Accounting (ACC)

ACC 1150
Fundamentals of Business Math
3:3:0 Fall, Spring

* Prerequisite(s): MAT 0950 or equivalent

Designed for the business student as a review of mathematical principles, techniques, computations, and their applications to business problems. Topics include: checking accounts and bank reconciliations, percent, solving for the "unknown," discounts, markups and markdowns, payroll, simple interest, discounting notes, present and future value, depreciation, inventory, taxes, insurance, stocks and bonds, annuities, sinking funds, and calculator procedures. Lab access fee of $30 for computers applies. Canvas Course Mats $78/McGraw applies

ACC 1750
Applied Accounting
4:4:0 On Sufficient Demand

* Prerequisite(s): Appropriate placement scores or (ENGL 1005 or ENGL 1010 with a grade of C- or higher)

Designed for non-accounting majors in Executive Assistant and Paralegal. Provides comprehensive coverage of the accounting cycle for services and merchandising organizations. Topics include: Journalizing, posting, financial statements, closing, accounting systems, internal control, accounts receivable, accounts payable, inventory control, and payroll. Taught in a computer environment. Lab access fee of $30 for computers applies.

ACC 2010
Financial Accounting
3:3:0 Fall, Spring, Summer

* Prerequisite(s): ENGL 1010 or ENGL 1005 or higher with a minimum grade of C-, MAT 1000 or higher with a minimum grade of C-, or appropriate test scores.

* Corequisite(s): ACC 1150 recommended if required for your degree

Designed for accounting majors to provide on-the-job work experience that will utilize the student's skills and abilities in the field of accounting. Requires a portfolio of acquired work experience and enhanced skills. Includes student, employer, and coordinator evaluations; on-site coordinator visits; written assignments; and oral presentations. Provides experience in formulating and completing individualized work experience objectives. A maximum of 3 credits may apply toward graduation. May be graded credit/no credit.

ACC 281R
Cooperative Work Experience
2 to 8:2 to 8:0 Fall, Spring, Summer

* Prerequisite(s): Approval of School of Business Career and Corporate Manager

Designed for accounting majors to provide on-the-job work experience that will utilize the student's skills and abilities in the field of accounting. Requires a portfolio of acquired work experience and enhanced skills. Includes student, employer, and coordinator evaluations; on-site coordinator visits; written assignments; and oral presentations. Provides experience in formulating and completing individualized work experience objectives. A maximum of 3 credits may apply toward graduation. May be graded credit/no credit.

ACC 3000
Financial Managerial and Cost Accounting Concepts
3:3:0 Fall, Spring, Summer

* Prerequisite(s): ENGL 2010, MAT 1010 or higher, and University Advanced Standing

Provide students in computer science and the technologies with knowledge of financial, managerial, and cost accounting concepts and applications. Preparing students to utilize accounting information in making business decisions. May be delivered online. Lab access fee of $30 for computers applies.

ACC 3005
Introduction to the Accounting Profession
1:1:0 Fall, Spring, Summer

* Prerequisite(s): ACC 2010 and University Advanced Standing

Focuses on variety of topics covering the accounting profession, including career options in accounting, certifications in accounting (CPA, CMA, CIA, CFE, etc.), ethics in the profession, current issues in accounting, professional standards, professionalism skills, and the curriculum for the accounting undergraduate and graduate degrees. May be graded credit/no credit. May be delivered online.

ACC 3010
Intermediate Accounting I
3:3:0 Fall, Spring, Summer

* Prerequisite(s): (ACC 2010, ACC 2020 and IM 2600) all with a B- or higher (MATH 1050, MATH 1055, or MATH 1090) all with a C- or higher, and University Advanced Standing

Reviews and expands on fundamental accounting material learned in beginning classes and provides a solid understanding of the accounting cycle process. Enables students to develop the background necessary to succeed as a professional accountant. May be delivered hybrid. Lab access fee of $30 for computers applies. Canvas Course Mats $78/McGraw applies

ACC 3020
Intermediate Accounting II
3:3:0 Fall, Spring, Summer

* Prerequisite(s): ACC 3010, MKTG 2200, and University Advanced Standing

* Prerequisite(s) or Corequisite(s): ACC 3300

Addresses debt and equity financing, investments in debt and equity securities, leases, deferred income taxes, employee compensation (payroll and pensions), earnings per share, accounting changes, and error corrections. Lab access fee of $30 for computers applies. Canvas Course Mats $78/McGraw applies

ACC 3030
Intermediate Accounting for Non-Accounting Majors
3:3:0 On Sufficient Demand

* Prerequisite(s): ACC 2010 and University Advanced Standing

An intermediate accounting course for non-accounting majors with emphasis on interpretation and use of general-purpose financial statements and the related disclosure notes. Addresses understanding interrelationships among the various financial statements and analyzing the effects of transactions on the financial statements. Analyzes common and significant accounts/transactions, especially those relating to the liability and equity sections of the financial statements. Canvas Course Mats $76/Wiley applies.

ACC 3120
Internal Auditing
3:3:0 On Sufficient Demand

* Prerequisite(s): (ENGL 1005, MATH 1050 or MATH 1055 or MATH 1090) higher, junior standing, minimum cumulative GPA of 3.0, and University Advanced Standing

Introduces students to the theories of governance, risk, and control concepts; internal auditing standards; audit techniques; and reporting practices. Applicable across disciplines.

ACC 312G
International Internal Auditing
3:3:0 Fall, Spring, Summer

* Prerequisite(s): ACC 2020 and University Advanced Standing

Introduces students to the international internal auditing standards; global auditing case studies; theories of governance, risk, and control concepts; audit techniques; and reporting practices. Applicable across disciplines. May be delivered hybrid and/or online.
ACC 3300
Cost Management
3:3:0 Fall, Spring, Summer
* Prerequisite(s): ACC 2010 with a B- or higher, ACC 2020 with a B- or higher, MGMT 2340 or STAT 2040, IM 2600, and University Advanced Standing

Provides a strategic approach to cost management and the development and use of relevant information for management decision making. Builds a foundation by discussing the various concepts of cost, cost behavior, and cost estimation techniques. Addresses costing of products and other cost objects using job order and process costing, activity-based costing, and cost allocation. Introduces management control topics of budgeting and performance evaluation through variance analysis. Concludes with current topics in cost management. May be delivered online. Lab access fee of $30 for computers applies.

ACC 3400
Individual Income Tax
3:3:0 Fall, Spring, Summer
* Prerequisite(s): ACC 3010 and University Advanced Standing

Studies federal individual income taxes. Covers the accounting theory and practices of federal individual income taxation based on a study of the laws, regulations, and income tax decisions. Lab access fee of $30 for computers applies. Canvas Course Mats $116/Pearson McGraw applies.

ACC 3510
Accounting Information Systems
3:3:0 Fall, Spring, Summer
* Prerequisite(s): ACC 3010, IM 2600, and University Advanced Standing

Teaches design and implementation of accounting information systems. Emphasizes accounting cycles, internal controls, and computerized environments. May be delivered hybrid. Lab access fee of $30 for computers applies.

ACC 4030
Governmental and Not For Profit Accounting
3:3:0 Fall
* Prerequisite(s): ACC 3010, Matriculation into the Woodbury School of Business, and University Advanced Standing

Covers areas of governmental and not-for-profit accounting and reporting. Includes fund accounting, the budgetary process, governmental financial reporting, not-for-profit organizations, health care organizations, colleges and universities, and public sector auditing. Lab access fee of $30 for computers applies.

ACC 4110
Auditing
3:3:0 Fall, Spring, Summer
* Prerequisite(s): ACC 312G, Matriculation into the Woodbury School of Business, and University Advanced Standing
* Prerequisite(s) or Corequisite(s): ACC 3020

Provides an introduction to independent audits of financial statements in accordance with generally accepted auditing standards, the environment in which audits are performed, and professional ethics. Includes basic audit concepts and procedures related to planning, testing internal controls, investigating reported financial results of business process cycles, and required auditor communications. May be delivered online. Lab access fee of $30 for computers applies. Canvas Course Mats $78/Cengage applies.

ACC 4140
Advanced Internal Auditing
3:3:0
* Prerequisite(s): Matriculation into the BS Accounting degree program, and University Advanced Standing or Instructor Approval.

Covers advanced topics in the theories of governance, risk, and control concepts; internal auditing standards; and audit techniques.

ACC 4310
Advanced Management Accounting
3:3:0 Fall, Spring, Summer
* Prerequisite(s): ACC 3300, Matriculation into any Woodbury School of Business bachelor degree program, and University Advanced Standing

Studies and applies advanced topics in Cost Management such as value chain analysis, activity-based management, and other current topics and issues in management accounting. Teaches the principles of management control including strategic planning, budgeting, performance measurement. Includes active class discussion, case analysis, and student presentations.

ACC 4350
Management Control
3:3:0 Not Offered
* Prerequisite(s): ACC 2020 or ACC 2030, Senior Standing in any Woodbury School of Business Bachelor program, and University Advanced Standing

Covers the management control environment and the structure of management control systems (responsibility center, transfer pricing, and measuring/controlling assets). Addresses the management control process (strategic planning, budgeting, performance measurement and analyzing operational and financial performance, and management compensation). Discusses variations in management control (controls for differentiated strategies, service organizations, and multinational organizations).

ACC 4400
Taxation of Business Entities
3:3:0 Not Offered
* Prerequisite(s): ACC 3400, Matriculation into the Woodbury School of Business, and University Advanced Standing

For accounting majors and other business students. Studies federal and state taxation of corporations, S-corporations, partnerships, estates, and trusts. Covers the accounting theory and practices of federal and state entity taxation based on a study of the laws, regulations, and associated tax decisions. Lab access fee of $30 for computers applies. Canvas Course Mats $78/Cengage applies.

ACC 4410
Tax Research
3:3:0 Not Offered
* Prerequisite(s): ACC 3010, ACC 3400, Matriculation into the BS Accounting degree program, and University Advanced Standing

Studies theory and practice of tax research as it applies to federal income taxation laws, rules and regulations. Applies ethical considerations and standards to tax practice. Emphasizes computerized tax research techniques which will be explored through cases dealing with administrative aspects of the IRS, court cases, client communications and a wide variety of tax topics.

ACC 4510
Information Systems Auditing
3:3:0 Fall, Spring
* Prerequisite(s): ACC 3510, ACC 312G, Matriculation into any Woodbury School of Business program, and University Advanced Standing

Provides students a project course covering IT audit and its impact on the financial statement audit. Covers information security, social engineering, and fraud data mining are also covered as they relate to accounting information systems and the associated data. May be delivered hybrid. Lab access fee of $30 for computers applies.

ACC 470R
Current Topics in Accounting
1 to 3.1 to 3.0 On Sufficient Demand
* Prerequisite(s): Department Chair approval and University Advanced Standing

Course varies from semester to semester. Provides opportunities for students to become exposed to emerging technology and topics of current interest and demand in Accounting. Repeatable for a maximum of 3 credits toward graduation.

ACC 481R
Internship
2 to 8.2 to 8.0 Fall, Spring, Summer
* Prerequisite(s): ACC 3010, Matriculation into the Woodbury School of Business, Approval of Accounting Department Internship Coordinator and University Advanced Standing

Provides accounting majors a transition from school to work where learned theory is applied to actual practice through meaningful on-the-job paid experience commensurate with upper-division classroom instruction. Includes student, employer, and coordinator evaluations, on-site work visits, written assignments, and oral presentations. May be repeated for a maximum of 6 credits toward graduation. May be graded credit/no credit.
ACC 490R
Accounting Seminar
1 to 3:1 to 3:0 to 9 On Sufficient Demand
* Prerequisite(s): Matriculation into the BS Accounting degree program, Department Chair Approval, and University Advanced Standing

Designed to provide short courses, workshops, and special programs on accounting-related topics. May be repeated for a maximum of 3 credits toward graduation.

ACC 491R
Independent Study
1 to 4:0 to 4:0 to 12 On Sufficient Demand
* Prerequisite(s): Department Chair approval and University Advanced Standing

For bachelor's degree students and other interested persons. Offers independent study as directed in reading, individual projects, etc., at the discretion and approval of the department chairperson. Repeatable for a maximum of 3 credits toward graduation.

ACC 5020
Advanced Financial Accounting
3:3:0 Fall, Spring, Summer
* Prerequisite(s): ACC 3020, Matriculation into the BS Accounting degree program, and University Advanced Standing

Presents accounting concepts and methods for business combinations, foreign currency transactions, foreign alliances. Includes accounting for business combinations and the various reporting requirements leading to consolidated financial statements.

ACC 5130
Case Studies in Internal Auditing
3:3:0 Spring
* Prerequisite(s): ACC 312G

Teaches student to design policies and procedures for internal audit operations by using risk based audit plans and developing audit plans. May be delivered hybrid.

ACC 5140
Fraud Examination
3:3:0 Fall, Spring
* Prerequisite(s): ACC 2010 or consent of instructor

Examines the seriousness of fraud and its impact on business and society. Includes forensic accounting and fraud prevention, detection, and resolution.

ACC 6020
Advanced Financial Accounting Applications
3:3:0 Fall, Spring, Summer
* Prerequisite(s): Admission to Master of Accountancy program

Presents accounting concepts, methods, and applications for business combinations, foreign currency transactions, foreign statement translation, and partnerships. Canvas Course Mats $78/McGraw applies.

ACC 6030
Financial Accounting and Reporting
3:3:0 Spring
* Prerequisite(s): Acceptance into the Master of Accountancy program

Focuses on understanding the nature and financial reporting aspects of complex business transactions such as corporate acquisitions, mergers, and other strategic alliances. Includes accounting for business combinations and the various reporting requirements leading to consolidated financial statements.

ACC 6060
Professionalism and Leadership
3:3:0 Fall, Summer
* Prerequisite(s): Admission to Master of Accountancy program

Enhances the ability to interact and communicate with others in the professional world. Builds skill development in oral and written communication, interviewing, networking, and leadership. Explores and enhances emotional intelligence.

ACC 6130
Case Studies in Auditing
3:3:0
* Prerequisite(s): Admission to Master of Accountancy or Master of Business Administration Program

Teaches policies and procedures for internal audit operations by creating risk based audit plans, developing audit objectives, and evaluating audit results.

ACC 6140
Fraud Examination and Forensic Accounting
3:3:0
* Prerequisite(s): Admission to Master of Accountancy or the Master of Business Administration Program

Examines the seriousness of fraud and its impact on individuals, businesses and society. Formulates fraud prevention, detection, and resolution methods using cases.

ACC 6150
Information Systems Auditing
3:3:0
* Prerequisite(s): Admission to Master of Accountancy or Master of Business Administration Program

Covers accounting theory and practices of the federal income taxation laws, rules and regulations relating to sales and exchanges of assets and the formation and operation of corporations and S corporations, and their effects upon the corporation's shareholders. Canvas Course Mats $78/McGraw applies.

ACC 6350
Management Control Systems
3:3:0 Spring
* Prerequisite(s): Admission to Master of Accountancy or Master of Business Administration Program

Evaluates the design of management control systems through case studies to enable the successful implementation of accounting strategies in a variety of for-profit entities. Emphasizes the development of the students' analytical and decision-making skills. Canvas Course Mats $134/Pearson applies.

ACC 6410
Tax Research and Procedure
3:3:0 Fall
* Prerequisite(s): Admission to the Master of Accountancy or Master of Business Administration Program

Practices the necessary skills to thoroughly research and analyze a tax problem, as well as to report research analysis and conclusions accurately. Explores computerized tax research methods, and the organization of the I.R.S. with some of the procedural aspects of tax compliance and practice, tax related penalties, professional responsibility and tax ethics.

ACC 6420
Principles of Corporate Tax
3:3:0 Fall, Spring
* Prerequisite(s): Admission to Master of Accountancy program

Covers accounting theory and practices of the federal income taxation laws, rules and regulations relating to sales and exchanges of assets and the formation and operation of corporations and S corporations, and their effects upon the corporation's shareholders. Canvas Course Mats $78/McGraw applies.

ACC 6430
Advanced Corporate Tax
3:3:0
* Prerequisite(s): Admission to Master of Accountancy or Master of Business Administration Program

Assesses the appropriate federal income tax for a corporation based on relevant accounting and business data. Analyzes the tax implications related to the form of entity and the location of the entity.

ACC 6440
Partnership Tax
3:3:0
* Prerequisite(s): Admission to Master of Accountancy or Master of Business Administration Program

Examines accounting theory and practices of the federal income taxation laws, rules and regulations relating to the formation and operation of partnerships, and their effects upon partners.

ACC 6460
Estate and Gift Tax
3:3:0
* Prerequisite(s): Admission to Master of Accountancy or Master of Business Administration Program

Examines the law and theory of federal taxation of estates and gifts based on Federal code, I.R.S. regulations, and digest of official income tax decisions.

ACC 6500
Advanced Accounting Information Systems
3:3:0 Not Offered
* Prerequisite(s): Acceptance in the MBA program

Develops the background necessary to plan, design and implement an accounting information system.
Aerospace Studies (AERO)

AERO 1000 Leadership Laboratory 1A .5:0:2 Fall
Studies basic fundamentals of military leadership: drill, courtesy, planning, and organizing at various levels of responsibility.

AERO 1010 Leadership Laboratory 1B .5:0:2 Spring
Studies basic fundamentals of military leadership: drill, courtesy, planning, and organizing at various levels of responsibility.

AERO 1100 The Air Force Today 1:1:0 Fall
* Corequisite(s): AERO 1000
Teaches development, organization, and doctrine of the U.S. Air Force. Emphasizes Strategic Force requirements.

AERO 1110 Aerospace Defense General Purpose and Support Forces 1:1:0 Spring
* Corequisite(s): AERO 1010

AERO 143R Air Force Physical Training .5:0:2 Fall, Spring
* Corequisite(s): AERO 1000
Prepares students for the physical demands placed upon them at Air Force Field Training encampment normally attended between their sophomore and junior years. Provides leadership opportunities and tests a cadet's physical fitness. Repeats are allowed. See advisor for details. May be repeated for a maximum of four credits.

AERO 2000 Leadership Laboratory 2A .5:0:2 Fall
Teaches fundamentals of military leadership: drill, courtesy, planning, and organizing at various levels of responsibility. Increased emphasis on performance level.

AERO 2010 Leadership Laboratory 2B .5:0:2 Spring
Teaches fundamentals of military leadership: drill, courtesy, planning, and organizing at various levels of responsibility. Increased emphasis on performance level.

AERO 2100 The Developmental Growth of Air Power A 1:1:0 Fall
* Corequisite(s): AERO 2000
Studies development of various concepts of air power employment, emphasizing factors that have prompted research and technological change.

AERO 2110 The Development and Growth of Air Power B 1:1:0 Spring
* Corequisite(s): AERO 2010
Studies development of various concepts of air power employment. Emphasizes factors that have prompted research and technological change.

AERO 3000 Leadership Laboratory 3A .5:0:2 Fall
* Prerequisite(s): University Advanced Standing
Teaches basic fundamentals of military leadership: drill, courtesy, planning, and organizing at various levels of responsibility. Students perform as cadet officers. Emphasizes leadership development.

AERO 3010 Leadership Laboratory 3B .5:0:2 Spring
* Prerequisite(s): University Advanced Standing
Teaches basic fundamentals of military leadership: drill, courtesy, planning, and organizing at various levels of responsibility. Students perform as cadet officers. Emphasizes leadership development.

AERO 305R Leadership Laboratory Honor Guard 1:0:3 Fall, Spring
* Prerequisite(s): University Advanced Standing
Teaches basic fundamentals of military leadership: drill, courtesy, planning, and organizing at various levels of responsibility. Emphasizes leadership development. Students perform as cadet officers. Repeats are allowed. See advisor for details. May be repeated for a maximum of 8 credits.

AERO 3100 Management and Leadership A 3:3:0 Fall
* Prerequisite(s): University Advanced Standing
Introduces students to the United States Air Force (USAF) and the Reserve Officer Training Corps (ROTC). Includes conflict management, followership, leadership responsibility, officership, and process improvement.

AERO 3110 Management and Leadership B 3:3:0 Spring
* Prerequisite(s): University Advanced Standing
Introduces students to the United States Air Force (USAF) and the Reserve Officer Training Corps (ROTC). Includes conflict management, followership, leadership responsibility, officership, and process improvement.

AERO 3200 Jet Pilot Introduction 2:2:0 On Sufficient Demand
* Prerequisite(s): University Advanced Standing
Studies principles of flight and accompanying issues. Introduces meteorology. Presents FARs as they apply to the private pilot. Provides orientation, understanding, and preparation of the US Air Force Undergraduate Pilot Training (UPT).
AIST 327G Indians of Utah
3:3:0 Fall Even Year
* Prerequisite(s): (ENGL 1010 or ENGL 1005) and University Advanced Standing
Investigates the history of Utah's five principal cultural groups from the pre-Columbian period to the present. Considers how economic processes, cross-cultural influences, and changing Federal and State policies have shaped American Indian communities and individuals in and around Utah. Examines how identity and culture in native communities have been defined and redefined through the processes of migration (both native and non-native), conquest, assimilation efforts, and cultural persistence.

AIST 3360 American Indian Education Policy
3:3:0 Spring Even Year
* Prerequisite(s): (ENGL 1010 or ENGL 1005) and University Advanced Standing
Examines the effects of the pandemics brought by the Euro-American perspectives on history and science. Examines the effects of the European conquest of the Americas on Native populations and cultures, and on global historical processes.

AIST 358G American Indian Health Policy
3:3:0 Fall Odd Year
* Prerequisite(s): ENGL 2010, University Advanced Standing
Explores the history, political economy, and epidemiology of American Indian health issues in the United States. Examines the effects of the pandemics brought by the Euro-American perspectives on history and science. Examines the effects of the European conquest of the Americas on Native populations and cultures, and on global historical processes.

AIST 3600 American Indian Policy and Tribal Government
3:3:0 Fall
* Prerequisite(s): ENGL 2010 or instructor approval and University Advanced Standing
Examines American Indian law in treaties, statutes, case law, regulations, and executive orders. Analyzes various policy approaches to the federal trust relationship, tribal sovereignty over internal affairs, civil jurisdiction over tribal lands, management of natural resources of tribal lands, and cultural preservation. Studies the traditional and modern forms of various Indian tribal governments.

AIST 3810 Precolumbian America
3:3:0 On Sufficient Demand
* Prerequisite(s): (ENGL 1010 or ENGL 1005) and AIST 180G and University Advanced Standing
Examines the effects of the European conquest of the Americas on Native populations and cultures, and on global historical processes.

AIST 3830 Indians of the Great Plains
3:3:0 Spring Even Year
* Prerequisite(s): (HIST 1700 or HIST 2700 or HIST 2710 or AIST 180G) and (ENGL 1010 or ENGL 1005) and University Advanced Standing
Surveys the histories of native communities of the Great Plains. Examines the geopolitical relations of the eighteenth and nineteenth centuries and the conditions of resistance to conquest. Highlights the identification and use of primary sources, both for scholarly activity and making sources available to native peoples.

AIST 384G Indians of the Southwest
3:3:0 Spring Even Year
* Prerequisite(s): (ENGL 1010 or ENGL 1005) and HIST 1700 and AIST 180G and University Advanced Standing
Surveys the cultural geography and social institutions of Indians of the American Southwest and their antecedents. Compares Southwestern Indian cultures and other social groups in the United States. Focuses on historic and contemporary relations among Indian cultures and with the United States federal and state governments.

AIST 3850 The Struggle for Self-determination
American Indians 1891 to present
3:3:0 Fall Even Year
* Prerequisite(s): (HIST 1700 or HIST 2700 or HIST 2710 or AIST 180G) and (ENGL 1010 or ENGL 1005) and University Advanced Standing
Surveys American Indian history from the Wounded Knee Massacre of 1891 to the present. Examines how American Indians shifted from armed conflict to the employment of legal and political strategies for achieving self-determination.
Course Descriptions

AIST 4600
Contemporary American Indian Political and Social Issues
3:3:0 Spring Odd Year
* Prerequisite(s): (AIST 358G or AIST 3600) and University Advanced Standing
Surveys current research and perspectives on contemporary American Indian issues. Utilizes a seminar approach in which each student will prepare summaries of books and articles to be distributed to the other class members. Includes identity, political activism, historiography, health, political, and cultural issues.

AIST 490R
Special Topics in American Indian Studies
3:3:0 On Sufficient Demand
* Prerequisite(s): ENGL 1010 and [POLS 1000 or POLS 1100 or HIST 1700 or HIST 1740 or (HIST 2700 and HIST 2710)] and University Advanced Standing
Explores special topics in American Indian Studies and related subjects. Examples of special topics may include health, specific tribal communities, education, political issues, the humanities in Native culture, economic and community development, comparative studies, social science perspectives, or other areas of student and faculty interest. May be repeated for a maximum of 6 credits.

American Studies (AMST)

AMST 2000
Introduction to American Studies
3:3:0 Spring
* Prerequisite(s): ENGL 2010
Introduces students to the interdisciplinary study of American culture. Employs insights and approaches from literature, history, art, sociology, anthropology, and political science. Analyzes a variety of texts and artifacts. Explores selected themes and issues central to American Studies.

AMST 300R
Topics in American Studies
3:3:0 Fall, Spring
* Prerequisite(s): ENGL 2010 and University Advanced Standing
Uses an interdisciplinary approach to study various topics and themes in American Studies. Topics might include Western American Culture, Nature and Culture, Popular Culture in America, Mass Media in America, etc. May be repeated for up to 6 credits toward graduation.

Anthropology (ANTH)

ANTH 101G
Social Cultural Anthropology
3:3:0 Fall, Spring, Summer
* Prerequisite(s): ENGL 1010 or ENGH 1005 with a grade of C+ or higher
Introduces students to the variability of human behavior cross-culturally and provides an understanding of the holistic approach to human behavior. Explores interrelationships, in a variety of cultural contexts, between beliefs, economic structures, sexuality, eating habits, ecology, politics, living arrangements, psychology, symbolism, and kinship. May be delivered hybrid.

ANTH 1020 (Cross-listed with: BIOL 1500)
Biological Anthropology
3:3:0 Fall
* Prerequisite(s): (ENGL 1010 or ENGH 1005) and (ANTH 101G or BIOL 1010)
For students with special interests in Anthropology or the Life Sciences. Studies fossils and living primates, primate biology and behavior. Studies human fossils. Investigates human evolution and variations of basic biology as it pertains to human development. Stresses the importance of the distribution and diversity of humankind.

ANTH 103G
World Prehistory
3:3:0 Fall, Spring
Introduces the archaeological record of human prehistory. Explores the earliest fossil remains, and follows the development of humans throughout prehistory. Examines techniques used by archaeologists to find, recover, date, and analyze prehistoric artifacts.

ANTH 180G (Cross-listed with: AIST 180G, HIST 180G)
Introduction to American Indian Studies
3:3:0 Fall
Provides an overview of modern and historical American Indian communities in the United States. Explores political and historical issues of major tribes and Indian communities by region. Provides students with information and perspectives on key social and cultural issues: spirituality, relations with the Federal government, notable individuals, art, literature, dance, media, health, education and activism.

ANTH 2030
Archeological Method and Theory
3:3:0 Spring
Explores the history, goals, theories, and methods of anthropological and archaeological research, especially as influenced by the natural sciences. Examines variations in prehistoric human behavior by analyzing the physical remains of ancient peoples throughout diverse time periods and geographical locations.

ANTH 2880
Introduction to Theory and Ethnography
3:3:0 Fall
Provides foundational skills for analytic reading and writing in anthropology. Explores how to apply theory to ethnographic data. Teaches how to write argumentative essays that engage with anthropological texts.

ANTH 3000 (Cross-listed with: LANG 3000)
Language and Culture LH
3:3:0 Fall, Spring, Summer
* Prerequisite(s): ENGL 1010 or ENGH 1005, (ANTH 101G or any foreign language 2010 course), Sophomore status, and University Advanced Standing
Introduces cultural linguistics. Analyzes features of human languages that make possible semantic universality. Examines distinction between phonetic and phonemic units. Explores relationship between language and culture. Studies how language shapes culture and how culture shapes language.

ANTH 3050
Intro to Ethnomusicology
3:3:0 On Sufficient Demand
* Prerequisite(s): University Advanced Standing
Introduces a comparative study of music traditions from a variety of cultural settings. Presents concepts and research methods of ethnomusicology. Provides opportunities to develop skills of listening, observation, analysis, and demonstration. Utilizes ethnography, archaeology, and personal observation.

ANTH 3150
Culture Ecology and Health
3:3:0 On Sufficient Demand
* Prerequisite(s): University Advanced Standing
Examines reciprocal roles of culture, environment, and disease in human health. Covers nutrition, stress, and traditional non-Western treatments. Explores cultures' use of their own global medicine to sustain health and welfare.

ANTH 3200
Food and Culture
3:3:0 On Sufficient Demand
* Prerequisite(s): University Advanced Standing
Explores the complex relationships between food, culture, and human action. Examines the cultural underpinning of human nutrition. Discusses the selected social, cultural, medical, political, and ideological uses of food. Examines the symbolism of food to better understand taboo, fasting and feasting, class and social stratification, sacrifice, hosting, cannibalism, and narrative grotesque.

ANTH 3210
Islam in the Modern World
3:3:0 Spring Odd Year
* Prerequisite(s): University Advanced Standing
Explores the different ways anthropologists have studied Muslim social life, including attempts to apply Muslim ethical frameworks to the domains of finance, politics, leisure, and the modern domestic sphere. Addresses issues relating to gender, race, and class in Muslim societies. Explores issues in interfaith relations, such as the challenges Muslims face when living in a Christian-majority society.

ANTH 3300
Culture Development and International Aid
3:3:0 Fall Odd Year
* Prerequisite(s): University Advanced Standing
Provides an overview of the anthropological study of international development. Analyses development practices and anthropological critiques of these practices. Explores the way anthropological approaches can increase the likelihood of development project success. Explores peasant studies and the many concerns of rural development. Discusses poverty and how it relates to economic, social, and political development. Appraises ways to ameliorate poverty and the role of governmental and non-governmental organizations in the process.
ANTH 3315
Great Basin Archaeology
3:3:0
* Prerequisite(s): (ANTH 1030 or ANTH 2030) and (ENGL 2010 with a minimum grade of C+) and University Advanced Standing

Investigates the prehistoric and ethnographic peoples of the Great Basin of North America through the study of their archaeological remains. Examines how the analysis of ancient technology, subsistence, skeletal material, rock art, settlement patterning, the environment, and archaeological theory shapes our understanding of cultures in the region. May include a field trip to an archaeological site.

ANTH 3340
Peoples and Cultures of Mexico
3:3:0
On Sufficient Demand
* Prerequisite(s): University Advanced Standing

Explores the people and cultures of Mexico. Discusses borders and immigration, indigenous cultures, rural/peasant societies, urban societies, and historical/political issues specific to Mexico. Emphasizes awareness of cultural relativity and global connectivity among the diverse peoples of Mexico.

ANTH 3350
Andean Prehistory
3:3:0
* Prerequisite(s): ANTH 101G and (ENGL 2010 with a minimum grade of C+) and (ANTH 103G or instructor approval) and University Advanced Standing

Offers an updated synthesis of the development, key achievements, material, organizational and ideological features of pre-Hispanic cultures of the Andean region of western South America. Spans around 12,000 years of pre-Hispanic cultural developments, from the earliest hunters-gatherers to the Spanish conquest of the Inca Empire. Focuses on the modern nation of Peru with an emphasis on the Pañan, Cupisnique, Chavin, Paracas, Nasca, Gallinazo Moche, Recuay, Tiwanaku, Wari, Cajamarca, Sicán, Chimú, and Inka.

ANTH 3360
Contemporary Issues in American Culture
3:3:0
On Sufficient Demand
* Prerequisite(s): University Advanced Standing

Examines key aspects of contemporary American culture. Discusses American values and popular culture, ethnicity, gender, childhood, food, reproduction, technology, crime, and globalization. Highlights aspects of American culture that may not be explored in other Behavioral Science curricula.

ANTH 3365
Gender and Sexuality
3:3:0
Spring Even Year
* Prerequisite(s): University Advanced Standing

Examines theories on the biological and cultural construction of sex and gender. Covers how different communities organize their lives around gender distinctions and sexual practices. Utilizes anthropological theories to analyze cultural practices and concepts pertaining to the following: differences between men and women, perceived sexual deviance and accepted sexual practices, non-binary people and third genders. Explores the way contradictory gender norms coexist and compete within the same culture.

ANTH 3370
History and Ethnography of Andean Societies
3:3:0
On Sufficient Demand
* Prerequisite(s): University Advanced Standing

Explores the social and cultural processes that characterize the societies that descend from the Inca Empire--Bolivia, Ecuador, and Peru--as they have developed since the Spanish invasion. Discusses contemporary political, economic, and social problems in these countries in the context of global society.

ANTH 3400
Myth Magic and Religion
3:3:0
Fall, Spring
* Prerequisite(s): University Advanced Standing

Explores the many aspects of religion, including its history, diversity, and how it relates to social science studies. Examines terms such as myth, magic, religion, ritual and shamanism, among others. Covers how these terms are used to discuss religious and spiritual practices around the world.

ANTH 3420
Andean Religion
3:3:0
On Sufficient Demand
* Prerequisite(s): University Advanced Standing

Explores religion prior to the Spanish conquest in the countries that were part of the Inca Empire--Bolivia, Ecuador, and Peru. Surveys the nature of Catholicism that was recreated after colonial conquest. Discusses the contemporary religious issues of Andean societies, such as secularity, and how Andean religious categories differ from categories that guide academic research on religion.

ANTH 3450
Shamanism and Indigenous Religion
3:3:0
On Sufficient Demand
* Prerequisite(s): University Advanced Standing

Explores the religious systems of indigenous peoples, particularly those which have been called shamanic. Focuses on the classical study of shamanism and the literature on indigenous shamanism. Locates the study of shamanism within a social context that includes social relational and political economic contexts of the groups within which shamanism is found. Poses questions of how shamanism is different from the expanding world religions and compares and contrasts shamanism with non-shamanic indigenous religions. Analyzes at the current marketing of shamanism in New Age contexts.

ANTH 3460
Anthropology of Mormonism
3:3:0
On Sufficient Demand
* Prerequisite(s): University Advanced Standing

Explores how an anthropological approach can enable a more in-depth comprehension of Mormonism as a religious tradition and cultural phenomena.

ANTH 3480
Global Christianity
3:3:0
Fall Even Year
* Prerequisite(s): University Advanced Standing

Explores the key issues that have arisen in the literature that explores Christianity from an anthropological perspective. Examines the development of Christianity from its historical origins to its current status as a “world religion.” Discusses how Christianity becomes relevant to different cultural contexts in the modern world. Analyzes Pentecostal, Evangelical Protestant, Eastern Orthodox, and Catholic forms of Christianity.

ANTH 3500
Discourse Semiotics and Representation
3:3:0
On Sufficient Demand
* Prerequisite(s): University Advanced Standing

Explores classical theoretical positions on representation, meaning, discourse, and poetics. Examines performance of culture and the implications of performance theory for scientific epistemology and methodology. Surveys recent work by anthropologists who grapple with these theoretical concerns in empirical research in a range of global settings.

ANTH 3550
Memory and History
3:3:0
On Sufficient Demand
* Prerequisite(s): University Advanced Standing

Studies how societies remember and represent their past and present in various contexts. Examines how societies employ different senses of temporality in these processes. Explores the relationships with historiography and ethnohistory and how anthropologists and historians have dealt with these issues.

ANTH 3560
Peace Violence and Human Morality
3:3:0
Fall Even Year
* Prerequisite(s): University Advanced Standing

Explores the cultural patterning of violence and nonviolence. Draws on theories of human values and ethics to understand how people morally justify different types of violent action, such as riots, genocide, warfare, and ritual violence. Explores cultural processes of pacifism, self-sacrifice, and reconciliation.

ANTH 3660
Globalized Society
3:3:0
Fall Odd Year
* Prerequisite(s): University Advanced Standing

Explores the development and reactions to globalization. Traces the formation of community of nation-states and multilateral agencies called “global society.” Explores the implications of global society for peoples far removed from this sphere of social organization. Provides an understanding of the world in which nation-states and their citizens are enmeshed.
ANTH 3700
Culture Psychology and Mental Health
3:3:0  Spring Even Year
* Prerequisite(s): University Advanced Standing
Explores interrelationships of individual personality to
elements of Western and non-Western sociocultural
systems. Examines relations of sociocultural contexts
to self, motives, values, personal adjustment, stress
and pathology using case histories and ethnography.
Discusses the idea of self and personality, normality and
deviance, and mental health and mental illness across
social and cultural boundaries.

ANTH 3720
Applied Anthropology
3:3:0  On Sufficient Demand
* Prerequisite(s): ANTH 101G, ENGL 2010, and
University Advanced Standing
Surveys the ethics and methods used by applied
anthropologists. Surveys a range of areas where applied
work is performed, including development anthropology,
anthropology and health, industrial anthropology,
marketing, and ethnography. Also explores the
political, social, and theoretical implications of applied
work.

ANTH 3750
Bioarchaeology
3:3:0  * Prerequisite(s): [(ANTH 1020 or BIOL 1500) and
(ENGL 2010 with a minimum C+ grade) or Instructor
approval] and University Advanced Standing
Focuses on the biological and contextual study of human
remains recovered from archaeological sites. Presents an
updated synthesis of bio-archaeological science dealing
with the study of the human skeleton to reconstruct
patterns of biological stress, infectious disease, lifestyle
and physical activity, diet, violent death, and genetic
relationships in the past. Temporal coverage principally
falls on the last 10,000 years of history, and the spatial
scope is global. Involves the dynamic nature of skeletal
tissues and the influences of environment and culture
on human variation. Acquired skills will be of value
to any students interested in skeletal studies including
archaeology, bioarchaeology, paleopathology, forensic
science, vertebrate biology, biomedical sciences, and
behavioral science.

ANTH 3830
Anthropological Field Methods
3:3:0  On Sufficient Demand
* Prerequisite(s): (ANTH 101G or ANTH 1020) and
(ENGL 2010 with a minimum grade of C+) and Instructor
approval and University Advanced Standing
Designed for electrical construction apprentice majors.
Prepares students for strenuous outdoor work, including
hiking, digging, carrying heavy loads, and processing
field collections in laboratory settings. Includes day activities
such as survey and excavation. Evenings are dedicated
to seminar-style discussion and laboratory work. Includes
periodic field trips to nearby archaeological and historic
sites. May be repeated for a maximum of 27 credits. May
be graded Credit/No Credit.

ANTH 3850
Ethnographic Methods WE
3:3:0  Fall
* Prerequisite(s): ANTH 101G and University Advanced Standing
Examines the utility of ethnographic research techniques
for answering different research questions. Formulates
research ethics protocols. Engages in participant
observation research and teaches techniques for
recording observations in field notes. Employs
ethnographic writing genres to compose reports on
original research. Develops skills in qualitative interview
techniques and the analysis of qualitative data.

ANTH 3870
Political Anthropology
3:3:0  Spring Even Year
* Prerequisite(s): University Advanced Standing
Explores anthropological theories of politics and power
in relation to human events and social institutions.
Provides a critical history of anthropological approaches
to understanding processes of regulating and controlling
populations, of justifying and executing power, of coaxing
populations into self-governance, and of disciplining
deviance. Analyzes political processes in non-state
societies and the workings of nation-states.

ANTH 4120
History of Anthropological Thought
3:3:0  Fall
* Prerequisite(s): ANTH 101G and ENGL 2010 with a
minimum C+ grade) and University Advanced Standing
Surveys anthropological thought, theory and its
philosophical roots from the nineteenth to the twentieth
centuries. Focuses on the concepts and theoretical
paradigms deployed in different social and intellectual
conjunctures, as well as on the major debates that have
formed the field and separated it from other social science
disciplines.

ANTH 4130
Contemporary Theory and Debates
3:3:0  Spring
* Prerequisite(s): ANTH 101G, ANTH 4120, and
University Advanced Standing
Explores social theory and other disciplines. Surveys
current debate through exploration of the conceptual
apparatuses that are deployed and the issues that
motivate current research. Studies contemporary
anthropological writings.

ANTH 4310
Kinship and the Family
3:3:0  Fall Even Year
* Prerequisite(s): University Advanced Standing
Explores anthropological thinking on familial relationships
and uses theoretical concepts to analyze a variety of
kinship practices. Covers the history of the anthropology
of kinship. Evaluates the adequacy of different
anthropological approaches to kinship for understanding
the distinct ways humans organize themselves into family
groups.

ANTH 475R
Current Topics in Anthropology
1 to 3:1 to 3:0  On Sufficient Demand
* Prerequisite(s): ENGL 2010 and University Advanced Standing
Presents selected topics in Anthropology and will vary
each semester. May be repeated for a maximum of 15
credits toward graduation.

ANTH 482R
Archaeological Field Methods Practicum
1 to 9:0 to 45  On Sufficient Demand
* Prerequisite(s): [ANTH 2030 and (ENGL 2010 with a
minimum grade of C+) or instructor approval] and
University Advanced Standing
Introduces students to archaeological field technique
and a critical approach to the methods by which
archaeology is conducted. Provides involvement in all
phases of field excavation, lab processing, curation
and preservation of archaeological remains, and data
analysis. Provides students with hands-on training in
archaeological, historical, bio-archaeological, and
environmental research. Explores how to conduct
archaeological surveys, large-scale site excavation, date
archival materials, excavate mortuary sites and human
burials, and document patterns of social complexity,
subsistence, and material culture. Students must be
prepared for strenuous outdoor work, including hiking,
digging, carrying heavy loads, and processing field
collections in laboratory settings. Includes day activities
such as survey and excavation. Evenings are dedicated
to seminar-style discussion and laboratory work. Includes
periodic field trips to nearby archaeological and historic
sites. May be repeated for a maximum of 27 credits. May
be graded Credit/No Credit.

ANTH 490R
Independent Studies
1 to 3:1 to 3:0  On Sufficient Demand
* Prerequisite(s): Degree student only; Instructor approval and University
Advanced Standing
For qualified students who wish to undertake a
well-defined project or directed study related to an
area of special interest. Requires individual initiative
and responsibility. Includes limited formal instruction
and faculty supervision. Projects may include writing
a publishable paper, passing a competency exam,
producing an annotated bibliography, an oral presentation,
or other options as approved by instructor. May be
repeated for a maximum of 6 credits.

Apprentice (APPR)

APP 281R
Cooperative Work Experience
1 to 8:1 to 8:0  On Sufficient Demand
* Corequisite(s): APPR 285R
Designed for electrical construction apprentice majors.
Provides paid, on-the-job work experience in the
student's major. Work experience, the correlated class
and enrollment are coordinated by the Cooperative
Coordinator. Includes student, employer and coordinator
evaluations, on-site work visits, written assignments and
oral presentations. Provides experience in writing and
completing individualized work objectives that improve
present work performance. May be graded Credit/No Credit.
APP 285R
Cooperative Correlated Class
1:1:0 On Sufficient Demand
* Corequisite(s): APPR 281R
Designed for electrical construction apprentice majors. Identifies on-the-job problems and provides remediation of those problems through in-class discussion and study. Includes the study of identifying and maximizing service opportunities. Students register for this class with approval of the Cooperative Coordinator. Includes lecture, guest speakers, video tapes, role playing, case analysis, oral presentation and written assignments. Completers should be better able to perform in their field of work or study.

Architecture (ARC)

ARC 1010
Classical Architecture Workshop
3:0 Fall, Spring
Provides an understanding of the fundamental principles and language of architecture. Instructs in the design principles that inform classical architecture which are found in the order, proportion, archetypal geometry, and patterns found in nature and the cosmos. Creates a solid foundation for learning and applying architecture’s vocabulary and syntax to compose poetic and meaningful buildings.

ARC 2110
Architecture Studio I
3:2:3 Fall, Spring, Summer
* Prerequisite(s): EGDT 1020 and ARC 1010 with a grade of C- or higher
Introduces the classical theories of architectural language, design, and craftsmanship in a hands on studio setting. Focuses on the classical vocabulary of the built environment. Investigates the forms, spaces, and ordering systems of design. Produces hand drawings in orthographic, perspective, and axonometric views. Illustrates light through shade and shadows. Applies understanding of classical building forms in the design of increasingly complex projects. Develops skills in traditional rendering and presentation techniques.

ARC 2210
Architecture Studio II
3:2:3 Spring
* Prerequisite(s): EGDT 1020, ARC 1010, and ARC 2110 with a grade of C- or higher
Exposes students to architectural site analysis and the process of evaluating a particular locations physical, historical, and cultural characteristics to inform design. Develops a building project of significant merit by measuring and documenting a selected site. Analyzes the complex elements of a site such as varying topography, watercourses, vegetation, habitats, weather patterns, and historical data to guide design decisions. Researches elements to determine the building placement, orientation, form and material selection.

ARC 2220
Construction Documents and Specifications
3:0 Fall, Spring
* Prerequisite(s): EGDT 1020 and EGDT 1100 with a grade of C- or higher
Prepares for the Construction Documents Technician (CDT) industry certification using standard software to complete working drawings for the architectural, civil, MEP, and structural industries. Develops a project manual and outline specifications, which coordinate with the working drawings of a commercial design.

ARC 3110
Architecture Studio III
6:3:9 Fall
* Prerequisite(s): Matriculation to the B-Arch Program and University Advanced Standing
Immerses students into the architecture studio culture and a design thinking environment. Emphasizes the fundamental design skills with attention on site and precedent. Requires research of a site and program necessary to develop cultural, theoretical, environmental, and historical contexts. Follows a Project based approach with a final presentation to a professional jury.

ARC 3120
Architectural Graphic Communication
3:0 Fall
* Prerequisite(s): Matriculation to the B-Arch Program and University Advanced Standing
Enables the student to confidently communicate design ideas to others. Includes involvement in producing complex 3D models and renderings of various project types. Combines traditional drawing techniques and contemporary software to complete assignments and projects.

ARC 3130
Codes and Construction Law
3:0 Fall
* Prerequisite(s): EGDT 2100, EGDT 2610 both with a grade of C- or higher and University Advanced Standing
Explores the modern building codes and how they affect building design and construction. Examines written specifications and the various jurisdictional requirements for architectural works. Provides in-depth information about the preparation and content necessary for a set of construction documents. Defines and explains the several types of construction contracts, bidding requirements, methods of specifying, substitutions, instructions, and warranties.

ARC 3210
Architecture Studio IV
6:3:9 Spring
* Prerequisite(s): ARC 3110 with a grade of C- or higher and University Advanced Standing
Engages in the essential pre-design processes of a project type. Includes the assessment of client and user needs, space analysis, and examination of project site. Follows a project based approach with a final presentation to a professional jury.

ARC 3220
Passive Environmental Systems
3:0 Spring
* Prerequisite(s): Matriculation to the B-Arch degree program, University Advanced Standing
Examines the principles of environmental systems design and the building envelope's affect on occupant comfort. Investigates passive heating and cooling strategies, natural ventilation, solar geometry, daylighting, climate considerations, thermal comfort, and mechanical systems.

ARC 3230
Global History of Architecture to 1700
3:0 Fall, Spring
* Prerequisite(s): Matriculation to the B-Arch degree program, University Advanced Standing
Explores the history of architecture and urbanism from a global perspective, beginning with the first settlements to roughly 1700 AD. Analyzes buildings and their surroundings through different methods of interpreting history. Presents that architecture is the result of complex interrelationships dealing with aesthetic, cultural, contextual, symbolic, religious, social, economic, political, technological, behavioral, and ecological issues.

ARC 4110
Architecture Studio V
6:3:9 Fall
* Prerequisite(s): ARC 3210 with a grade of C- or higher and University Advanced Standing
Explores architecture as part of an interdisciplinary team. Integrates a complex architectural program and associated needs of a user. Utilizes collaboration between disciplines such as mechanical, civil, and electrical engineering. Follows a project-based approach with a final presentation to a professional jury.

ARC 4120
Active Environmental Systems
3:0 Fall, Spring
* Prerequisite(s): ARC 3220 and University Advanced Standing
Examines the principles of environmental systems design and the building envelope's affect on occupant comfort and life safety. Investigates HVAC systems, indoor air quality, lighting, communication, security, fire protection, acoustics, vertical transportation, electrical, and plumbing systems.

ARC 4130
Global History of Architecture Since 1700
3:0 Fall
* Prerequisite(s): ARC 3230 with a grade of C- or higher. Matriculation to the B-Arch degree program, and University Advanced Standing
Explores the history of architecture and urbanism from a global perspective beginning with the first settlements since 1700 AD. Analyzes buildings and their surroundings through different methods of interpreting history. Explores architecture's complex interrelationships dealing with aesthetic, cultural, contextual, symbolic, religious, social, economic, political, technological, behavioral, and ecological issues.


**Course Descriptions**

**ARC 4210**
**Architecture Studio VI**
6:3:9  
Spring  
* Prerequisite(s): ARC 4110 with a grade of C- or higher and University Advanced Standing

Immerses students in the design of an architectural work to fulfill a community need. Encourages networking with community leaders and citizens. Employs project components such as client interviews, research methods, and interdisciplinary study. Explores a complex architectural program and associated needs of the community.

**ARC 4220**
**Building Envelope and Science**
3:3:0  Fall, Spring  
* Prerequisite(s): ARC 4120 with a grade of C- or higher and University Advanced Standing

Introduces modern architectural materials, methods of construction, and building enclosures including steel, concrete, curtain walls, high-performance materials, and thermal and moisture barriers. Evaluates the inclusion of sustainable systems to save energy and reduce the carbon footprint in building construction.

**ARC 4230**
**Building Structure II**
3:3:0  Spring  
* Prerequisite(s): ARC 4130 with a grade of C- or higher and University Advanced Standing

Studies the differences in design for structural elements in wood, steel, masonry, and concrete. Explores environmental conditions including water, snow, wind, soil, and seismic loads. Analyzes multiple structural systems, building systems, diaphragms, and structural connections. Includes structural engineer and architect communications.

**ARC 4510**
**Architecture Studio-Comprehensive Capstone I**
5:4:3  Fall  
* Prerequisite(s): ARC 4210 with a grade of C- or higher and University Advanced Standing  
* Corequisite(s): ARC 4520 and ARC 4530

Applies design skills through an architectural work which integrates critical and abstract thinking. Researches building systems, life safety considerations, building envelope, financial, cultural and environmental balance, and construction documentation skills.

**ARC 4520**
**Architectural Theory**
3:3:0  Fall  
* Prerequisite(s): SURV 455G and University Advanced Standing  
* Corequisite(s): ARC 4510 and ARC 4530

Surveys contemporary architectural thought and theory. Focuses on key figures, movements, and texts. Provides an overview of the principal theories that have informed or undermined architecture of the past four decades. Considers the changing role of theory with respect to practice. Supplies students with a set of questions, techniques, and tools for criticism and self-reflection.

**ARC 4530**
**Cultural Considerations in Architecture**
3:3:0  Fall  
* Prerequisite(s): SURV 455G and University Advanced Standing  
* Corequisite(s): ARC 4510 and ARC 4520

Examines the relationship between architecture, culture, history, economics, and humanity. Explores varying cultures and human behaviors and how they represent and manifest themselves in the built environment.

**ARC 4610**
**Architecture Studio-Comprehensive Capstone II**
5:4:3  Spring  
* Prerequisite(s): ARC 4510 with a grade of C- or higher and University Advanced Standing

Applies design skills through an architectural work which integrates critical and abstract thinking. Researches building systems, life safety considerations, building envelope, financial, cultural and environmental balance, and construction documentation skills.

**Arts (ART)**

**ART 1010**
**Introduction to Visual Arts**
3:3:0  Fall, Spring, Summer  

Develops an appreciation of the visual arts by investigating the elements and principles of art, art criticism, art production, and the history of art. Includes written critiques and assignments. Requires students to identify works of art and describe their significance in writing. May be delivered hybrid.

**ART 1020**
**Basic Drawing for Non-Majors**
3:2:2  Fall, Spring, Summer  

For non-majors. Introduces basic drawing techniques and stresses fundamentals of observation-based homework. Includes practice and skill building. Investigates basic black and white media such as graphite and charcoal. Requires sketchbook, in-class and home work assignments.

**ART 1050**
**Photography I**
3:2:3  Fall, Spring, Summer  

Emphasizes the use of camera operation, including aperture and shutter speed adjustments to control exposure, depth of field, lenses, and camera format. Teaches how to see photographically, using elements of composition and lighting to make stronger images. May be delivered online. Software fee of $12 applies. Course fee of $11 for equipment applies. Lab access fee of $26 for computers applies.

**ART 1110**
**Drawing I**
3:2:4  Fall, Spring, Summer  
* Prerequisite(s): Art and Design Major

For Art and Design majors. Introduces fundamental drawing concepts and media. Emphasizes mastery of basic drawing principles and integration of these principles into a personal drawing style through exposure to a variety of structured drawing experiences. Requires sketchbook, in-class and home work assignments.

**ART 1120**
**2D Design**
3:2:4  Fall, Spring, Summer  

Introduces skills, techniques, and materials associated with two-dimensional design fundamentals. Studies a variety of media, techniques, and subjects, exploring perceptual and descriptive possibilities regarding design both as a developmental process as well as an artistic end. Provides experience in a range of traditional and non-traditional design media. Projects and critiques examine integration of both visual elements and principles of design according to contemporary standards.

**ART 1130**
**3D Design**
3:2:2  Fall, Spring, Summer  
* Prerequisite(s): ART 1120

Presents a survey of the history and main lines of development and influential factors in three dimensional design. Examines important designers, firms, and decisive turning points in the history of three dimensional design. Emphasizes planning, purpose, and function through project oriented assignments. Teaches proper use of tools and materials. Course fee of $25 for materials applies.

**ART 1210**
**Spatial Drawing**
3:2:4  Fall, Spring, Summer  
* Prerequisite(s) or Corequisite(s): ART 1110

Provides students with essential drawing skills necessary for the correct representation of space. Introduces multiple linear perspective drawing methods, visualization, tonal drawing, and rendering skills. Studies perspective and spatial representation in a historical context.

**ART 1340**
**Sculpture I**
3:2:2  Fall, Spring, Summer  

Provides students with essential drawing skills necessary for the correct representation of space. Introduces multiple linear perspective drawing methods, visualization, tonal drawing, and rendering skills. Studies perspective and spatial representation in a historical context.

**ART 1350**
**Ceramics I**
3:2:2  Fall, Spring, Summer  

Studies clay as an expressive medium. Emphasizes techniques of working with clay, including hand building, wheel throwing, glazing, and firing. Course fee of $30 for materials applies.

**ART 1400**
**Graphic Computer Applications**
3:2:2  Fall, Spring, Summer  

Introduces concepts and software related to visual communication and the creation and reproduction of art. Teaches how to create and modify digital images using Adobe Photoshop. Also teaches basic design skills using Adobe Illustrator. Teaches basic page layout skills using InDesign. Covers basic software used in visual communications. May be delivered online. Software fee of $12 applies. Lab access fee of $26 for computers applies.
ART 1410
Typography I
3:2:4  Fall, Spring
* Prerequisite(s): ART 1120, ART 1400. For DGM majors: DGM 1110, DGM 2250.
Teaches the principles of typographic design and communication, type selection, and type terminology. Addresses typographic history and the use of typography in contemporary design including its relationship to layout and grid structure. Teaches skills to allow students to professionally set type using industry standard software. Software fee of $12 applies. Lab access fee of $26 for computers applies.

ART 1420
Graphic Design I
3:2:4  Fall, Spring
* Prerequisite(s): (ART 1120 and ART 1400) or (DGM 1110 and DGM 2250)
Provides an understanding of basic principles needed for effective visual communication. Presents a survey of graphic design theory and practice. Introduces graphic design processes for creative problem solving, production and critique. Software fee of $12 applies. Lab access fee of $26 for computers applies.

ART 1630
Introduction to Landscape Painting
3:2:2  Fall, Spring
On Sufficient Demand
Teaches landscape painting and drawing techniques through direct exposure to area sites. Explores interior and exterior landscapes. Studies color, shape, relationships, light, and space. Emphasizes individual interpretation of subject matter using a variety of media. Community members welcome.

ART 1650
Watermedia I
3:2:4  Fall, Spring
FF
Studies materials, techniques, and compositional methods of watercolor painting at a beginning level. Teaches the application of basic techniques for the use of transparent watercolor materials. Includes lecture/demonstration and studio time for application and evaluation. For majors and non-majors.

ART 1750
Intro to Digital Imaging
3:2:3  Fall, Spring
* Prerequisite(s): Art & Design major
Emphasizes the use of camera operation, including lens, aperture, and shutter speed adjustments to control exposure and depth of field. Teaches how to see photographically, using elements of composition and lighting to make stronger images. Uses digital captures as the primary focus. Also covers how to light and photograph 2D and 3D artworks as well as create reference photos. Required DSLR or SLR cameras. Software fee of $12 applies. Lab access fee of $26 for computers applies.

ART 1790
Dark Room Techniques
3:2:4  Fall, Spring
* Prerequisite(s): ART 1750
Introduces photography majors to traditional dark room processes, including development and printing methods. Teaches imagery through negative manipulation, diffusion, toning, and multiple exposure. Course fee of $19 for equipment applies.

ART 1810
Introduction to Interior Design
3:3:0  Fall, Spring
For individuals wishing to develop interior design skills, be employed in the interior design industry, or develop their own interior design business. Covers aesthetic and functional home design and space planning, “presentation” drafting and presentation techniques, “universal design,” quality furniture selection, and furniture arrangements. Includes kitchen design, architectural details, background materials, color fabric construction and selection. Includes lecture, guest speakers, videos, in-class labs and field trips. Completers have prepared floor plans, color and selection boards, and make client presentations.

ART 1820
Interior Space Design
3:3:0  Fall
For individuals wishing to develop interior design skills, be employed in the interior design industry, or develop their own interior design business. Covers aesthetic and functional home design and space planning, “presentation” drafting and presentation techniques, “universal design,” quality furniture selection, and furniture arrangements. Includes kitchen design, architectural details, background materials, color fabric construction and selection. Includes lecture, guest speakers, videos, in-class labs and field trips. Completers have prepared floor plans, color and selection boards, and make client presentations.

ART 1830
Residential Interior Design
3:3:0  Spring
For individuals wishing to develop interior design skills, be employed in the interior design industry, or develop their own interior design business. Covers aesthetic and functional home design and space planning, “presentation” drafting and presentation techniques, “universal design,” quality furniture selection, and furniture arrangements. Includes kitchen design, architectural details, background materials, color fabric construction and selection. Includes lecture, guest speakers, videos, in-class labs and field trips. Completers have prepared floor plans, color and selection boards, and make client presentations.

ART 200R
Art and Design Lecture Series
1:1:0  Fall, Spring
* Prerequisite(s): Declared Art and Design major
Offers weekly lectures exploring art and design. Addresses art education, art history, ceramics, drawing, graphic design, illustration, painting, photography, and sculpture. May be repeated for a maximum of 4 credits toward graduation. Course fee of $50 for support applies.

ART 2100
Teaching Art for Children FF
3:2:2  Fall, Spring
Introduces concepts and techniques to teach children art in the home, community, or schools based on state and national art teaching and learning standards. Includes community-based and multicultural engagement, materials management, and content appropriate for young learners. Assists students to become independent, creative, and productive learners as they acquire the knowledge, skills, and experience to teach children ages 5–12. Course Lab fee of $23 applies.

ART 2110
Drawing II
3:2:4  Fall, Spring
* Prerequisite(s): (ART 1110 or ART 1020) and ART 1120
Emphasizes continued mastery of drawing principles and further integration of these principles into a personal drawing style. Provides exposure to a variety of structured drawing experiences. Introduces color drawing media into vocabulary and application in works created.

ART 219R
Special Topics
1 to 3:1 to 3:0 to 6  On Sufficient Demand
E elective course for Art and Design students. Presents seminars and workshops from experts in industry. May range from a single weekend to a full semester. Repeatable for offerings of different content. A maximum of 3 credits may apply toward graduation. Lab access fee of $15 for computers applies.

ART 2220
Imagination and Visual Literacy
3:2:4  Fall, Spring
* Prerequisite(s) or Corequisite(s): ART 1210
Teaches visual problem solving skills that enable students to effectively find, interpret, evaluate, use, and create images that are original in concept. $25 course fee for support applies.

ART 2230
Illustrative Media and Techniques I
3:2:4  Fall, Spring
* Prerequisite(s): ART 1110, ART 1120  * Prerequisite(s) or Corequisite(s): ART 1210
Introduces the practice, study, and application of a variety of oil painting techniques used in the production of illustration art. Explores the development of mixed media processes and techniques using oil paint in combination with other materials and media will be explored.

ART 2240
Illustrative Media and Techniques II
3:2:4  Fall, Spring
* Prerequisite(s): ART 1210
Introduces the study, practice, and application of aqueous painting media used in the production of illustration art. Focuses on acrylic, gouache, casein or watercolor painting techniques. In addition, develops mixed media processes and techniques in combination with aqueous painting media.

ART 2250
Gestural Drawing
3:2:4  Fall, Spring
* Prerequisite(s): ART 1110, ART 1210
Introduces the drawing of basic shapes and forms used to create solidly-constructed, animated characters. Emphasizes understanding and communicating movement of the human form as shapes and drawing imaginatively. Course fee of $100 applies for support.

ART 2260
Digital Painting for Illustration I
3:2:4  Fall, Spring
* Prerequisite(s): ART 1110, ART 1400
Introduces the digital illustrator/painter to the application of various animation software programs such as basic raster, vector, and 3D. Software fee of $12 applies. Lab access fee of $26 for computers applies.
Course Descriptions

ART 2270  
Figure Drawing I  
3:2:4  Fall, Spring  
* Prerequisite(s): ART 1110, ART 1120, ART 1210, Art Design major or department approval.  
Studies the anatomy of the human figure; dynamics, posing and motion. Emphasizes figure-drawing skills such as extreme foreshortening, perspective and drawing the gestural motion of the human form. Uses live models (draped and/or undraped). Course Lab fee of $120 for support applies.

ART 2280  
3D Computer Modeling  
3:2:4  Fall, Spring, Summer  
* Prerequisite(s): ART 1400 or DGM 1110  
Teaches basic techniques of computer software-based 3D modeling, focusing primarily on Polygon and Subdivision Surface workflows applicable to virtually all modern 3D software packages. Includes basic lighting, surfing, and rendering techniques. Includes computer animation techniques. Software fee of $12 applies. Lab access fee of $26 for computers applies.

ART 2340  
Sculpture II  
3:2:2  Spring  
* Prerequisite(s): ART 1340 or Department Approval  
Teaches intermediate techniques of clay sculpture, including armature construction, base relief, figurative sculpture based on human and animal forms. Develops the skills to create a sculpture from clay model to finished piece. Course fee of $25 for materials applies.

ART 2350  
Ceramics II  
3:2:2  Fall, Spring  
* Prerequisite(s): ART 1350 or Department Approval  
Teaches intermediate and advanced techniques of wheel throwing, hand-building, and glazing. Emphasizes clay as an artistic medium. Includes decoration of clay shapes with engobes, slip, glaze, overglazes, etc. Develops the skills to create a quality finished ceramic piece. Requires students to provide all materials and equipment except wheels. Course fee of $40 for materials applies.

ART 2400  
Production Design  
3:2:4  Fall, Spring  
* Prerequisite(s): ART 1110, ART 1120, ART 1400, ART 1410, ART 1420, formal acceptance to Associate of Applied Science in Graphic Design (AAS) Program by portfolio review, or department approval.  
Introduces production techniques used in the graphic design industry. Includes the practical application of learned technical skills through design projects. Software fee of $12 applies. Lab access fee of $26 for computers applies.

ART 2430  
Branding I  
3:2:4  Fall, Spring  
* Prerequisite(s): ART 1110, ART 1120, ART 1400, ART 1410, ART 1420, formal acceptance to Associate of Applied Science in Graphic Design (AAS) Program by portfolio review, or department approval.  
Addresses concepts relating to branding campaigns. Teaches research skills and the influence they have on the creation of brand identities. Teaches brainstorming, conceptual skills, and the use of industry-standard software for the design and production of an identity system. Software fee of $12 applies. Lab access fee of $26 for computers applies.

ART 2440  
Motion Graphics I  
3:2:4  Fall, Spring  
* Prerequisite(s): ART 1110, ART 1120, ART 1400, ART 1410, ART 1420, formal acceptance to Associate of Applied Science in Graphic Design (AAS) Program by portfolio review, or department approval  
Teaches basic principles and techniques of 2D animation with an emphasis on typography. Includes discussion of creative problem solving in time-based media. Includes learning 2D industry software to render video and audio. Software fee of $12 applies. Lab access fee of $26 for computers applies.

ART 2480  
UI/UX Design I  
3:2:4  On Sufficient Demand  
* Prerequisite(s): ART 1410, ART 2400  
Teaches basic principles and techniques of interface design for the Web. Includes discussion of usability and information architecture to solve client needs. Includes learning HTML tags and CSS styling, image preparation for the Web, and using Adobe Dreamweaver to create and upload web-ready files. Software fee of $12 applies. Lab access fee of $26 for computers applies.

ART 2490  
Portfolio I  
3:2:2  Spring  
* Prerequisite(s): ART 1110, ART 1120, ART 1400, ART 1420  
* Prerequisite(s) or Corequisite(s): ART 2400  
Teaches the preparation of a portfolio for the BFA portfolio review and job interviews. Provides opportunities to evaluate and develop a format for professional presentations. Presents job-seeking skills pertinent to the visual arts industry. Software fee of $20 applies. Lab access fee of $20 for computers applies.

ART 2620  
Color Theory  
3:2:4  Fall, Spring  
* Prerequisite(s): ART 1120  
Explores the principles of color theory as related to the visual arts. Introduces theories of color, color systems, and the psychology of color through a sequence of exercises and projects.

ART 2630  
Painting I  
3:2:4  Fall, Spring  
Investigates the character and techniques of oil painting at a beginning level. Emphasizes several approaches (both traditional and modern) on a variety of surfaces.

ART 2640  
Painting II  
3:2:4  Fall, Spring  
* Prerequisite(s): ART 2630, (ART 1120 and ART 2620 recommended)  
Presents advanced traditional and non-traditional oil painting techniques. Emphasizes the techniques for personal exploration. Encourages development of individual style and approach to the media.

ART 2650  
Watermedia II  
3:2:4  Fall, Spring  
* Prerequisite(s): ART 1650. ART 2620 recommended  
Emphasizes development of technical skills, composition at an intermediate level in a variety of watermedia. Includes lecture, demonstration, and studio time for application and evaluation. Encourages development of personal style in relation to the media.

ART 2680  
Printmaking I  
3:2:4  Fall, Spring  
* Prerequisite(s): ART 1110 or ART 1020  
Introduces fine art printmaking and focuses on beginning techniques, processes, and materials. Explores the role of traditional and contemporary printmaking as a fine art medium. Focuses on the development of personal and individual imagery, craftsmanship, the use of tools and materials, and printmaking terminology. Includes intaglio printing and relief printing. Course Lab fee of $32 applies.

ART 2700  
Photography II  
3:2:4  Fall, Spring  
* Prerequisite(s): ART 1790  
Extends skills and principles learned in Introduction to Photography. Continues the exploration of light and composition through personal expression to make stronger images. Emphasizes technical control of exposure, development, and aesthetic presentation in the context of the Zone System. Teaches processes of archival printing and presentation. Emphasizes use of large format cameras. Course fee of $19 for equipment applies.

ART 2710  
Documentary Photography  
3:2:4  Fall, Spring  
* Prerequisite(s): ART 1750  
Teaches the art of telling stories through lens based media. Studies how to take a story from concept to publication. Explores methods of publication of imagery in magazines, newspapers, web sites; social media, annual reports, etc. Uses historical documentary references to inform contemporary ways of telling a story. Includes the use of still and moving imagery. Course Lab fee of $19 for equipment applies.
ART 2720
Color Photography
3:2:4 Fall, Spring
* Prerequisite(s): ART 1750
Introduces color photography and color theory using digital photography and Adobe Photoshop as well as inkjet printing and scanning. Explores cross processing and other development manipulations. Discusses development of color photography and color perception as applied to specific themes. Encourages creativity and personal expression. Software fee of $12 applies. Lab access fee of $26 for computers applies.

ART 2730
Photographic Lighting I
3:2:4 Fall, Spring
* Prerequisite(s) or Corequisite(s): ART 2720
Teaches the basic skills needed to control and manipulate light as a tool for the photographer in communication of artistic vision. Explores different lighting sources and investigates the effects of direction, quality and quantity. Emphasizes flash photography, tungsten, and natural lighting. Studies photographic studio, location, and mixed lighting techniques. Covers processes and concepts through slide presentations, readings, critiques and class discussions. Course Lab fee of $19 for equipment applies.

ART 2815
Historical Architecture and Interior Design
3:3:0 On Sufficient Demand
Studies interior design and its development and change through historical styles from prehistoric civilizations through the Victorian Era. Identifies major historical period styles, major architects, and designers. Covers furniture, lighting, and surface materials.

ART 281R
Art and Design Internship
1 to 6:1 to 6:0 Fall, Spring, Summer
* Prerequisite(s): Departmental Approval
Combines classroom theory with related, practical job experience. Provides students work experience as employees of a business, agency, or institution while enrolled in classes related to their career/major. Allows for individualized course content with students setting objectives in concert with their internship advisor and their workplace supervisor. Requires pre-approval by the area coordinator and department internship advisor. Offers variable credit determined by the number of hours worked per week. May be repeated for a maximum of 6 credits toward graduation. May be graded credit/no credit.

ART 2825
Modern Architecture Interiors and Furnishings
3:3:0 On Sufficient Demand
* Prerequisite(s): ART 1810
Studies interior design and its development through historical styles from the Arts and Crafts movement to Deconstructivism. Covers architects, designers, textiles, lighting and surface materials.

ART 281R
Independent Study
1 to 3:0 to 3:0 to 9 On Sufficient Demand
* Prerequisite(s): Sophomore and above students only
Provides an opportunity for second year and above students to do individual research and experimentation within the areas of the Art and Design Program. Limited to advanced work beyond that which can be completed in existing available classes. Requires that a proposal be submitted and approved by the department prior to enrollment. May be repeated for a maximum of three credits toward graduation.

ART 3005
Ceramic History Trends and Practices
3:2:2 On Sufficient Demand
* Prerequisite(s): ART 1350, ART 2350, and University Advanced Standing; or department approval
Investigates important movements, approaches, cultures, and techniques in the history of ceramic production. Studies artists, trends, and issues in contemporary ceramics.

ART 300R
Special Topics in Art
1 to 3:0 to 3:0 to 9 On Sufficient Demand
* Prerequisite(s): University Advanced Standing; formal acceptance to the Art and Design Bachelor of Arts (BA), Bachelor of Science (BS), or Bachelor of Fine Arts (BFA) degree, and department approval
Addresses emerging topics, issues, and developments related to the visual arts. Includes lectures, demonstrations, and studio time for application and evaluation. Encourages development of personal style in relation to the topic. May be repeated for a maximum of 9 credits toward graduation.

ART 311R
Drawing III
3:2:4 On Sufficient Demand
* Prerequisite(s): ART 2240 and University Advanced Standing; or department approval
Continues the exploration of the technical skills and conceptual development of drawing as a creative medium. Focuses on the mastery of drawing skills and includes demonstrations, lectures and active participation in the critical process. Emphasizes cultivating personal expression and independent serial work. May be repeated for a maximum of 6 credits toward graduation.

ART 3210
Narrative Illustration
3:2:4 Fall
* Prerequisite(s): (Matriculated into the BFA in Art and Design: Illustration emphasis) and University Advanced Standing
* Prerequisite(s) or Corequisite(s): ART 2230 or ART 2240
Provides experiences in creating mood through visual elements and controlling the pictorial space. Emphasizes composition, creativity and technical ability. Addresses narrative illustration and visual storytelling. Course fee of $20 for support applies.

ART 321R
Environment Design and Painting
3:2:4 Fall Odd Year
* Prerequisite(s): ART 3210 and University Advanced Standing; formal acceptance to the Art and Design Bachelor of Arts (BA), Bachelor of Science (BS), or Bachelor of Fine Arts (BFA) degree, or department approval
Develops and improves skills in designing, rendering and painting environments and landscapes for use in illustration, animation, video games and film. May be repeated for a maximum of 6 credits toward graduation.

ART 3220
Conceptual Illustration
3:2:4 Spring
* Prerequisite(s): (Matriculated into the BFA in Arts and Visual Communication: Illustration emphasis) and University Advanced Standing
* Prerequisite(s) or Corequisite(s): ART 2270
Introduces conceptual illustration and problem solving through the use of visual symbols, metaphors and icons. Course fee of $20 for support applies.

ART 322R
Advanced Rendering of Forms and Surfaces
3:2:4 Fall Odd Year
* Prerequisite(s): ART 2240 and University Advanced Standing; formal acceptance to the Art and Design Bachelor of Arts (BA), Bachelor of Science (BS), or Bachelor of Fine Arts (BFA) degree, or department approval
Studies the accurate depiction of light, shadow, and reflectivity. Focuses on realistic rendering of various objects, textures, and surfaces. Develops advanced skills with a variety of media that may include traditional and/or digital drawing and painting media. May be repeated for a maximum of 6 credits toward graduation.

ART 324R
Childrens Book Illustration
3:2:4 Fall Even Year
* Prerequisite(s): (Matriculated into the BFA in Art and Design: Illustration emphasis) and University Advanced Standing
* Prerequisite(s) or Corequisite(s): ART 2230 or ART 2240
Teaches the processes and techniques used in the execution of children’s book illustrations. Emphasizes stylizing, simplifying, exaggerating forms, and organizing pictorial space. Focuses on the art of narrative storytelling and continues the study of media and techniques relative to storybook illustration. May be repeated for a maximum of 6 credits toward graduation.
Course Descriptions

ART 325R
2D Animation for Illustration 3:2:4 Spring Odd Year
* Prerequisite(s): ART 2260 and University Advanced Standing; formal acceptance to the Art and Design Bachelor of Arts (BA), Bachelor of Science (BS), or Bachelor of Fine Arts (BFA) degree, or department approval

Provides the student of illustration a firm foundation to create simple to moderately complex 2D animations. Develops skills using animation basics including tweening, squash and stretch, anticipation, staging and timing. May be repeated for a maximum of 6 credits toward graduation. Software fee of $12 applies. Lab access fee of $26 for computers applies.

ART 3260
Digital Painting for Illustration II 3:2:4 Spring
* Prerequisite(s): ART 2260 and University Advanced Standing; formal acceptance to the Art and Design Bachelor of Arts (BA), Bachelor of Science (BS), or Bachelor of Fine Arts (BFA) degree, or department approval

Focuses on creating quality digital paintings/illustrations in a studio setting. Studies the more subtle features of the software applications. Practices advanced conceptual and problem solving skills. Software fee of $12 applies. Lab access fee of $26 for computers applies.

ART 3270
Digital Illustration 3:2:4 Spring Even Year
* Prerequisite(s): ART 1110, ART 1120, ART 2260 and University Advanced Standing; formal acceptance to the Art and Design Bachelor of Arts (BA), Bachelor of Science (BS), or Bachelor of Fine Arts (BFA) degree, or department approval

Develops advanced skills in producing pixel-based, computer-generated artwork for use as illustrations and other graphic communications. Emphasizes digitally painted images created from scratch rather than the creation of images produced through the digital manipulation of existing, found, or photographic resources. Develops conceptually based and communicative images that will be a vital aspect of each course project. Employs industry-standard software, and techniques including layers, compositing, channels, selection masks, and color adjustments. Software fee of $12 applies. Lab access fee of $26 for computers applies.

ART 327R
Rendering the Human Head 3:2:4 Fall, Spring
* Prerequisite(s): ART 1110, ART 1120, and University Advanced Standing; formal acceptance to the Art and Design Bachelor of Arts (BA), Bachelor of Science (BS), or Bachelor of Fine Arts (BFA) degree, or department approval

Develops proficiency in rendering the human head in a variety of approaches and techniques. Addresses geometric and planar construction, proportion, lighting, features, and expression. May be repeated for a maximum of 6 credits toward graduation. Course Lab fee of $93 for support applies.

ART 3280
3D Computer Rendering 3:2:4 Fall Odd Year
* Prerequisite(s): ART 1400 or DGM 1110 and University Advanced Standing; formal acceptance to the Art and Design Bachelor of Arts (BA), Bachelor of Science (BS), or Bachelor of Fine Arts (BFA) degree, or department approval; ART 2280 recommended

Teaches techniques in lighting, texturing, and rendering of 3D models and scenes with a special emphasis on aesthetics and composition. Includes HDR lighting, UV mapping, and texture painting, in addition to the standard techniques. Designed as a companion class to the modeling class, ART 2280, but can be explored as a stand-alone experience. Provides models, as needed, or students may use their own models as approved. Software fee of $12 applies. Lab access fee of $26 applies for computers.

ART 328R
Painting the Human Head 3:2:4 Fall
* Prerequisite(s): ART 327R and University Advanced Standing; formal acceptance to the Art and Design Bachelor of Arts (BA), Bachelor of Science (BS), or Bachelor of Fine Arts (BFA) degree, or department approval

Continues the development of rendering skills acquired in ART 327R (Head Drawing). Emphasizes mixing flesh tones, managing values, and investigates a variety of approaches to painting the human head. May be repeated for a maximum of 6 credits toward graduation. Course Lab fee of $93 for computers applies.

ART 333R
Sculpture III 3:2:2 to 4 Spring
* Prerequisite(s): ART 2340 and University Advanced Standing; or department approval

Investigates studio problems based on concepts applied to various three-dimensional materials. Places special emphasis on the development of individual expression in the students chosen medium. Encourages the development of individual style and exploration of alternative media. May be repeated for a maximum 6 credits toward graduation. Course fee of $25 for materials applies.

ART 334R
Ceramics III 3:2:2 to 4 Fall, Spring
* Prerequisite(s): ART 2350 and University Advanced Standing; or department approval

Continuation of concepts developed in Ceramics I and II. Addresses advanced skills in hand building, wheel throwing, glaze formulation and kiln firing. May be repeated for a maximum of 6 credits toward graduation. Course fee of $40 for materials applies.

ART 3420
Typography II 3:2:4 Fall, Spring
* Prerequisite(s): ART 2280, ART 2440, University Advanced Standing; formal acceptance to Bachelor of Fine Arts (BFA) Program by portfolio review, or department approval.

Develops advanced skills in the use of typography and layout. Examines editorial practices and executes designs that are appropriate for the intended audience. Teaches industry-standard page layout software. Software fee of $12 applies. Lab access fee of $26 for computers applies.

ART 3440
Motion Graphics II 3:2:4 Fall, Spring
* Prerequisite(s): ART 2280, ART 2440, University Advanced Standing; formal acceptance to Bachelor of Fine Arts (BFA) Program by portfolio review, or department approval.

Teaches principles and techniques of 3D animation with an emphasis on typography. Includes discussion of creative problem solving in time-based media. Includes learning 2D and 3D industry software to render video with audio. Software fee of $12 applies. Lab access fee of $26 for computers applies.

ART 3450
Branding II 3:2:4 Fall, Spring
* Prerequisite(s): ART 2400, ART 2430, University Advanced Standing; formal acceptance to Bachelor of Fine Arts (BFA) Program by portfolio review, or department approval.

Teaches concept and theory behind brand identity and package design. Covers how to conduct research to ensure designs are conceptually appropriate and targeted. Includes creation of collateral that supports campaign criteria. Software fee of $12 applies. Lab access fee of $26 for computers applies.

ART 3480
UI/UX Design II 3:2:4 Fall, Spring
* Prerequisite(s): DGM 2120, University Advanced Standing; formal acceptance to Bachelor of Fine Arts (BFA) Program by portfolio review, or department approval.

Teaches advanced principles and techniques to develop interactive experiences. Includes discussion of usability and user-centered design to solve client needs. Includes learning user interface (UI) and user experience (UX) design principles. Software fee of $12 applies. Lab access fee of $26 for computers applies.

ART 3500
Secondary Art Education Methods I 3:2:2 Fall
* Prerequisite(s): ART 1110, ART 1120, University Advanced Standing and Matriculation into Art Education.
* Corequisite(s): EDSC 4550

Introduces students to the materials, methods, and resources related to teaching middle school and high school visual arts. Emphasizes the characteristics and components of a quality art program. Designed for the art major pursuing teacher licensure for grades 7-12. Course Lab fee of $16 for materials applies.
ART 3510
Secondary Art Education Methods II
3:2:2 Spring
* Prerequisite(s): University Advanced Standing. Art Education Majors Only.

Investigates theories and models of curriculum development in the visual arts for middle school and high school students. Includes implementation of curriculum development, unit/lesson planning, and evaluation strategies in the visual arts. Prepares prospective art teachers to plan, organize, and promote quality art programs and curricula. Course Lab fee of $22 for materials applies.

ART 361R
Figure Drawing II
3:2:4 Fall
* Prerequisite(s): ART 2670 and University Advanced Standing; or department approval

Provides opportunity for independent exploration and Emphasizes experimental approach to watermedia. May be repeated for a maximum of 6 credits toward graduation. Course Lab fee of $150 for support applies.

ART 363R
Painting III
3:2:4 On Sufficient Demand
* Prerequisite(s): ART 2640 and University Advanced Standing; or department approval

Explores fundamental methods and techniques of oil painting from the figure using live models (draped and undraped). Emphasizes mastery of representational depictions of the figure. Includes themes of abstraction, interpretation, and narrative uses of the figure. May be repeated for a maximum of 6 credits toward graduation. Course Lab fee of $150 for support applies.

ART 365R
Watermedia III
3:2:4 On Sufficient Demand
* Prerequisite(s): ART 2650 and University Advanced Standing; or department approval

Explores the human form from a fine arts vantage point at an advanced level in various painting media (oil, acrylic, mixed, etc.). Explores historical and contemporary modes of media/image use and interpretation in conceiving and expressing the human form in a range of stylistic contexts. Focuses on the development and manipulation tool for image making. Investigates technical concerns of digital workflow, capture, and output for commercial and fine art applications. Strong emphasis on using Photoshop as a creative tool in personal artistic expression. Discusses more advanced uses of selection tools, color correction, layer and channel manipulations. Teaches alternative photographic processes with an emphasis on early photographic printing techniques. Includes preparation and exposure of paper using various alternative techniques through a variety of hands-on projects. May be repeated for a maximum of 6 credits toward graduation. Course Lab fee of $50 for equipment applies.

ART 366R
Life Drawing
3:2:4 Fall, Spring
* Prerequisite(s): ART 1110, ART 1120, or department approval and University Advanced Standing

Studies fundamental human anatomy, structure, value representation, proportion, shape, and gesture from a fine arts vantage point in a range of drawing media. Draws from observation of live models (clothed and unclothed). Serves as a foundation for advanced courses in drawing and painting the human form as found in traditional, modern, and contemporary fine arts movements. May be repeated for a maximum of 6 credits toward graduation. Course Lab fee of $135 applies.

ART 367R
Printmaking II
3:2:4 Spring
* Prerequisite(s): ART 1110 or ART 1020, ART 2680, University Advanced Standing, or department approval

Continues to develop, enhance, and create proficiency in printmaking skills through intermediate techniques, processes, and materials. Establishes the role of traditional and contemporary printmaking as a fine art medium. Includes challenging and complex projects with more advanced technical skills than Printmaking I. Strengthens the development of personal and individual imagery, including the importance of craftsmanship, the usage of additional tools/materials, and an expanding printmaking vocabulary. May be repeated for a maximum of 6 credits toward graduation. Course Lab fee of $34 for materials applies.

ART 368R
Printmaking III
3:2:4 On Sufficient Demand
* Prerequisite(s): ART 1110 or ART 1020, ART 2680, University Advanced Standing, or departmental approval

Continues the exploration of fine art printmaking through advanced techniques, processes, and materials including the mixing/printing of color inks and multiple plate registration. Strengthens the development of personal and individual imagery, including the importance of craftsmanship, the usage of new tools/materials, and an expanding printmaking vocabulary. May be repeated for a maximum of 6 credits toward graduation. Course Lab fee of $34 for materials, equipment applies.

ART 369R
Contemporary Figure Painting
3:2:4 On Sufficient Demand
* Prerequisite(s): ART 366R or ART 2270, ART 2630, and University Advanced Standing; or department approval. ART 2620 recommended.

Studies the human form from a fine arts vantage point at an advanced level in various painting media (oil, acrylic, mixed, etc.). Explores historical and contemporary modes of media/image use and interpretation in conceiving and expressing the human form in a range of stylistic contexts. Focuses on the development and manipulation tool for image making. Investigates technical concerns of digital workflow, capture, and output for commercial and fine art applications. Strong emphasis on using Photoshop as a creative tool in personal artistic expression. Discusses more advanced uses of selection tools, color correction, layer and channel manipulations. Teaches processes and concepts through slide presentations, readings, critiques, and class discussions. Course Lab fee of $19 for equipment applies.

ART 371R
Historical Photographic Processes
3:2:4 Fall
* Prerequisite(s): University Advanced Standing; formal acceptance to Bachelor of Fine Arts (BFA) Program by portfolio review, or department approval

Teaches alternative photographic processes with an emphasis on early photographic printing techniques. Includes preparation and exposure of paper using various alternative techniques through a variety of hands-on projects. May be repeated for a maximum of 6 credits toward graduation. Course Lab fee of $50 for equipment applies.

ART 3730
Photographic Lighting II
3:2:4 Spring
* Prerequisite(s): University Advanced Standing; formal acceptance to Bachelor of Fine Arts (BFA) Program by portfolio review, or department approval

Focuses on product lighting and camera techniques. Develops artistic skill through the creation of images that can be used in commercial settings, specifically in advertising. Course Lab fee of $19 for equipment applies.

ART 3740
Fine Art Photography
3:2:3 Fall, Spring
* Prerequisite(s): ART 1750 and University Advanced Standing; formal acceptance to the Art and Design Bachelor of Arts (BA), Bachelor of Science (BS), or Bachelor of Fine Arts (BFA) degree, or department approval

Integrates previously taught image-making skills, and encourages students to further develop their personal vision through a more developed project. Examines contemporary trends, styles, and critical issues through slide presentations, readings, critiques, and class discussions. Course Lab fee of $19 for equipment applies.

ART 3750
Advanced Digital Imaging
3:2:3 Fall
* Prerequisite(s): ART 2720 and University Advanced Standing; formal acceptance to the Art and Design Bachelor of Arts (BA), Bachelor of Science (BS), or Bachelor of Fine Arts (BFA) degree, or department approval

Integrates Photoshop as a development and manipulation tool for image making. Investigates technical concerns of digital workflow, capture, and output for commercial and fine art applications. Strong emphasis on using Photoshop as a creative tool in personal artistic expression. Discusses more advanced uses of selection tools, color correction, layer and channel manipulations. Teaches processes and concepts through slide presentations, readings, critiques and class discussions. Software fee of $12 applies. Lab access fee of $26 for computers applies.

ART 3800
Low-Fire Ceramics
3:2:2 Spring
* Prerequisite(s): ART 1350, ART 2350, and University Advanced Standing; or department approval

Explores low-temperature clay and glazing techniques, as well as the practical and aesthetic considerations of their use. Addresses the operation and maintenance of electric kilns.
Course Descriptions

ART 3810  
Ceramic Technologies  
3:2:2  On Sufficient Demand  
* Prerequisite(s): ART 1350, ART 2350, and University Advanced Standing; or department approval

Teaches proper practices in the ceramic studio. Includes kiln operation, maintenance and design, basic clay and glaze formulation, understanding ceramic materials, ceramic tool making, and studio practices and safety.

ART 382R  
Sculpting the Human Form  
3:2:2  Fall  
* Prerequisite(s): [(ART 1110 or ART 1020), ART 1130, ART 1340] and University Advanced Standing

Teaches sculpting principles and techniques related to the human form. Explores skeletal and muscula anatomy studies through the creation of an écorché sculpture. Sculpting will be done from live models (clothed and unclothed) to improve observation and rendering skills. Emphasizes armature design and creation. May be repeated for a maximum of 6 credits toward graduation. Course lab fee of $72 for illustration applies.

ART 411R  
Drawing IV  
3:2:4  On Sufficient Demand  
* Prerequisite(s): (ART 311R or department approval) and University Advanced Standing

Emphasizes individual exploration in a variety of drawing media. Variables engage "process" as a creative methodology. Continues with conceptual development of drawing as a creative medium. Encourages active participation in the critical process and refinement of a personal approach to the medium. May be repeated for a maximum of 6 credits toward graduation.

ART 421R  
Advanced Illustration  
3:2:4  Spring  
* Prerequisite(s): (Matriculated into the BFA in Art and Design: Illustration emphasis program) and University Advanced Standing  
* Prerequisite(s): or Corequisite(s): ART 3220

Provides advanced studies in producing a senior level portfolio. Encourages students to find a personal style and voice in communicating images. Requires advanced problem solving skills and advanced abilities in the creation of images. May be repeated for a maximum of 6 credits toward graduation. Course fee of $50 for support applies.

ART 426R  
Concept Design II  
3:2:4  Fall Odd Year  
* Prerequisite(s): (ART 426R, matriculated into the BFA in Art and Design: Illustration emphasis program) and University Advanced Standing

Offers advanced training in the creation of original and compelling character designs for artistic use and as icons for private and corporate use. May be repeated for a maximum of 6 credits toward graduation.

ART 428R  
Sequential Illustration  
3:2:4  Spring  
* Prerequisite(s): (ART 3210, matriculated into the BFA in Art and Design: Illustration emphasis program) and University Advanced Standing

Addresses emerging topics, issues, and technology relevant to graphic design. Addresses these issues through research and collaborative project development. May be repeated for a maximum of 6 credits toward graduation. Software fee of $12 applies. Lab access fee of $26 for computers applies.

ART 429R  
3D Illustration  
3:2:4  Fall Odd Year  
* Prerequisite(s): (ART 3280, matriculated into the BFA in Art and Design: Illustration emphasis program) and University Advanced Standing  
* Prerequisite(s): or Corequisite(s): ART 427R

Provides students the skills to develop a brand identity as reference or as standalone 3D illustration. May be repeated for a maximum of 6 credits toward graduation. Software fee of $12 applies. Lab access fee of $26 for computers applies.

ART 4360  
Mold Making and Casting  
3:2:2  Spring  
* Prerequisite(s): ART 1120, ART 1130, ART 2340, and University Advanced Standing; or department approval

Covers the basic process of casting and the construction of molds. Emphasizes the use of molds in the development of sculptural ideas. Course fee of $30 for materials applies.

ART 4370  
Hand Building Ceramics  
3:2:2  Fall  
* Prerequisite(s): ART 1350 and University Advanced Standing; or department approval

Designed for students interested in three-dimensional art forms. Emphasizes hand building design and techniques in creating both sculptural and vessel projects in water-based clay. Teaches advanced methods of coil, slab, and pinch construction. Utilizes slump molding, rolled slab, cylinders, and molds in creation of finished clay products. Course fee of $30 for materials applies.

ART 443R  
Design Studio  
3:2:4  Fall, Spring  
* Prerequisite(s): ART 3420, ART 3450, and University Advanced Standing; formal acceptance to Bachelor of Fine Arts (BFA) Program by portfolio review, or department approval

Addresses emerging topics, issues, and technology relevant to graphic design. Addresses these issues through research and collaborative project development. May be repeated for a maximum of 6 credits toward graduation. Software fee of $12 applies. Lab access fee of $26 for computers applies.

ART 4440  
Motion Graphics Studio  
3:2:4  Fall, Spring  
* Prerequisite(s): ART 3440, and University Advanced Standing; formal acceptance to Bachelor of Fine Arts (BFA) Program by portfolio review, or department approval

Addresses emerging topics, issues, and technology relevant to motion design. Addresses these issues through research and collaborative project development. Software fee of $12 applies. Lab access fee of $26 for computers applies.

ART 4480  
UI/UX Studio  
3:2:4  Fall, Spring  
* Prerequisite(s): ART 3480, and University Advanced Standing; formal acceptance to Bachelor of Fine Arts (BFA) Program by portfolio review, or department approval

Addresses emerging topics, issues, and technology relevant to UI/UX design. Addresses these issues through research and collaborative project development. Software fee of $12 applies. Lab access fee of $26 for computers applies.

ART 4490  
Portfolio II  
3:2:2  Spring  
* Prerequisite(s): ART 341R, ART 343R, and University Advanced Standing; formal acceptance to Bachelor of Fine Arts (BFA) Program by portfolio review, or department approval

Presents advanced instruction in the execution of a variety of graphic design projects (advertising, collateral, editorial, package, and web design) aimed at building an exit portfolio. Assists students to improve and refine their portfolios in preparation for employment. Provides students the skills to develop a brand identity for themselves to further enhance their employability. Software fee of $20 applies. Lab access fee of $25 applies for computers.

ART 463R  
Painting IV  
3:2:4  On Sufficient Demand  
* Prerequisite(s): ART 363R and University Advanced Standing; or department approval

Emphasizes independent and creative development as a painter. Provides an opportunity for students to solidify and expand their ideas while working within a class context. May be repeated for a maximum of 6 credits toward graduation.
**ART 465R**  
**Watermedia IV**  
3:2:4  
On Sufficient Demand  
* Prerequisite(s): ART 365R and University Advanced Standing; or department approval  
Explores printmaking as a fine art medium. Includes more challenging and complex projects with advanced technical skills than in Printmaking I, II, & III. Encourages the ability to detect and diagnose printing errors and to collaborate with peers in the making and critiquing of artworks. Strengthens the development of personal and individual imagery, including the importance of craftsmanship, the usage of new tools/materials, and an expanding printmaking vocabulary. May be repeated for a maximum of 6 credits toward graduation. Course Lab fee of $19 for equipment applies.

**ART 468R**  
**Printmaking IV**  
3:2:4  
On Sufficient Demand  
* Prerequisite(s): ART 3680, University Advanced Standing, or departmental approval  
Expands the exploration of fine art printmaking through advanced techniques, processes, and materials. Continues to view the role of traditional and contemporary printmaking as a fine art medium. Includes more challenging and complex projects with more advanced technical skills than in Printmaking I, II, & III. Encourages the ability to detect and diagnose printing errors and to collaborate with peers in the making and critiquing of artworks. Strengthens the development of personal and individual imagery, including the importance of craftsmanship, the usage of new tools/materials, and an expanding printmaking vocabulary. May be repeated for a maximum of 6 credits toward graduation. Course Lab fee of $34 for materials applies.

**ART 470R**  
**Figure Drawing III**  
3:2:4  
Spring  
* Prerequisite(s): ART 361R, Art and Visual Communication BFA Students, or Instructor approval) and University Advanced Standing  
Offers a senior-level drawing experience, emphasizing drawing from imagination. Continues skill development in proper character structure and scene layout. May be repeated for a maximum of 6 credits toward graduation. Course Lab fee of $125 for support applies.

**ART 471R**  
**Photographic Illustration**  
3:2:3  
Spring  
* Prerequisite(s): University Advanced Standing; formal acceptance to Bachelor of Fine Arts (BFA) Program by portfolio review, or department approval  
Develops skills in illustrating concepts through photographic processes. Encourages students to work through assignments from their own personal emphasis of commercial or fine art image making styles. Explores contemporary trends, styles, and critical issues through slide presentations, readings, critiques and class discussions. Focuses on the development of interpretation and conceptual image making. May be repeated for a maximum of 6 credits toward graduation. Course Lab fee of $19 for equipment applies.

**ART 474R**  
**Advanced Photo Studies**  
3:2:4  
Fall  
* Prerequisite(s): University Advanced Standing; formal acceptance to Bachelor of Fine Arts (BFA) Program by portfolio review, or department approval  
Integrates all previous image making skills acquired into the students' visual vocabulary. Encourages students to further develop their own personal vision through more developed projects. Examines contemporary trends, styles, and critical issues through slide presentations, readings, critiques and class discussions. Investigates needed skills in running a business as a commercial and Fine Art photographer. Emphasizes conceptual image making. May be repeated for a maximum of 6 credits toward graduation. Course Lab fee of $19 for equipment applies.

**ART 4750**  
**Exploratory Photographic Processes**  
3:2:4  
Spring  
* Prerequisite(s): University Advanced Standing; formal acceptance to Bachelor of Fine Arts (BFA) Program by portfolio review, or department approval  
Explores deconstruction of the image in both a formal and conceptual process. Analyzes liquid emulsions, mixed media, encaustic, and alternative surfaces and materials. Examines the possibilities of the image beyond two-dimensional traditional photography. Course Lab fee of $19 for equipment applies.

**ART 481R**  
**Art and Design Internship**  
1 to 6:1 to 6:0  
Fall, Spring, Summer  
* Prerequisite(s): University Advanced Standing; formal acceptance to the Art and Design Bachelor of Arts (BA), Bachelor of Science (BS), or Bachelor of Fine Arts (BFA) degree and departmental approval  
Combines classroom theory with related, practical job experience. Students works as employees of a business, agency, or institution while enrolled in classes related to their career major. Course content is individualized with students setting objectives in concert with their internship advisor and their workplace supervisor. Internship enrollment must be pre-approved by the area coordinator and department internship advisor. Number of hours worked per week will determine number of credits granted. May apply a maximum of 6 credits toward graduation. May be graded credit/no credit.

**ART 4820**  
**Professional Practices for the Visual Arts I**  
1:1:0  
On Sufficient Demand  
* Prerequisite(s): University Advanced Standing; declared Art & Design major; junior or senior status or department approval  
For Art and Design majors. Covers business topics related to visual arts professions, including standard policies and procedures, basic contracts and pricing methods, trade customs, ethical standards, and general business practices.

**ART 4830**  
**Professional Practices for the Visual Arts II**  
1:1:0  
On Sufficient Demand  
* Prerequisite(s): University Advanced Standing; declared Art & Design major; junior or senior status or department approval  
For Art and Design majors. Introduces students to legal topics relevant to professions in the visual arts, including the principles of copyright, trademark, and contract law, as well as policies and laws that impact the production of creative work.

**ART 4840**  
**Professional Presentation for the Visual Arts**  
1:1:0  
On Sufficient Demand  
* Prerequisite(s): University Advanced Standing; declared Art & Design major; junior or senior status or department approval  
For Art and Design majors. Covers topics related to preparing work for presentation and marketing work within visual arts professions, including building a professional website, preparing a professional portfolio, getting work ready for exhibition, and advertising/marketing work.

**ART 4850**  
**Professional Writing for the Visual Arts**  
1:1:0  
On Sufficient Demand  
* Prerequisite(s): University Advanced Standing; declared Art & Design major; junior or senior status or department approval  
For Art and Design majors. Focuses on the development of advanced writing skills for visual arts professionals, including writing artists statements, biographies, critiques, critical reviews, exhibition labels, and content for social media platforms. Also focuses on understanding and tailoring communication for specific audiences.

**ART 4890**  
**Senior Seminar**  
3:3:0  
Fall, Spring  
* Prerequisite(s): University Advanced Standing; Senior status and formal acceptance to the Art and Design Bachelor of Arts (BA), Bachelor of Science (BS), or Bachelor of Fine Arts (BFA) degree, or department approval  
For Art and Design majors. Covers standard policies and procedures used in the creation and marketing of visual arts. Includes estimating, pricing, trade customs, ethical standards, contracts, and other legal rights and issues. Explores job opportunities and self-employment options for visual artists.
**Course Descriptions**

**ARTH 491R**
Independent Study
1 to 3:0 to 3:0 to 9 On Sufficient Demand
* Prerequisite(s): University Advanced Standing, formal acceptance to the Art and Design Bachelor of Arts (BA), Bachelor of Science (BS), or Bachelor of Fine Arts (BFA) degree, and department approval

Provides an opportunity for upper division students to do individual research and experimentation within the areas of the Art and Design Program. Study is limited to advanced work beyond that which can be completed in existing available classes. A proposal must be submitted and approved by the department prior to enrollment. May be repeated for a maximum of 3 credits toward graduation.

**ARTH 4990**
Senior Studio
3:2:2 On Sufficient Demand
* Prerequisite(s): University Advanced Standing, Senior status, formal acceptance to the Art and Design Bachelor of Arts (BA) or Bachelor of Science (BS), and department approval

For Art and Design majors with senior status. Combines and integrates concepts, methodologies and skills developed in previous Art and Design course work, through the completion of a comprehensive project. Requires students to develop their own project/portfolio in consultation with a faculty advisor. Finished projects will demonstrate individual student skills and interests.

**ARTH 499R**
BFA Project WE
3:2:4 Fall, Spring
* Prerequisite(s): University Advanced Standing, Senior status and formal acceptance to Bachelor of Fine Arts (BFA) program by portfolio review or department approval

Focuses on the development and execution of a gallery exhibition or professional portfolio. Includes collaborative work with a gallery/museum professional in preparation of the exhibition's public viewing. May be repeated for a maximum of 6 credits toward graduation. Software fee of $12 applies. Lab access fee of $26 for computers applies.

**Art History (ARTH)**

**ARTH 2720**
History of Art from the Renaissance
3:3:0 Fall, Spring, Summer
Covers major trends in Western art, from the Renaissance through the Modern era, including elements of political, religious, cultural, literary, and philosophical elements as they impacted the creation of art.

**ARTH 272H**
History of Art from the Renaissance
3:3:0 On Sufficient Demand
Covers major trends in Western art, from the Renaissance through the Modern era, including elements of political, religious, cultural, literary, and philosophical elements as they impacted the creation of art.

**ARTH 2720**
Northern Baroque Art History
3:3:0 On Sufficient Demand
* Prerequisite(s): ARTH 2710, (ARTH 2720 recommended), ENGL 1010 or ENGL 1005, and University Advanced Standing

Covers major trends in Western art from Flanders during the 17th century. Explores the artistic, historical, and broad cultural influences on art of this period.

**ARTH 3010**
History of Design and Visual Arts
3:3:0 Fall, Spring
* Prerequisite(s): ARTH 2710 or ARTH 2720 and University Advanced Standing

Explores topics within art and architectural history. Topics will change each semester to reflect the research activities and interests of the instructor (e.g., "The History of Victorian Art & Design", "The History of Rococo Painting & Sculpture"). May be repeated for a maximum of 6 credits toward graduation.

**ARTH 3015**
Ancient Art of Egypt and the Near East
3:3:0 Summer
* Prerequisite(s): ARTH 2710 (ARTH 2720 recommended), (ENGL 1010 or ENGL 1005), and University Advanced Standing

Covers major trends in Western art from the Paleolithic period to the Gothic era, including elements of political, religious, cultural, literary, and philosophical elements as they impacted the development of art.

**ARTH 3020**
Classical Art and Architecture History
3:3:0 Spring
* Prerequisite(s): ARTH 2710 (ARTH 2720 recommended), ENGL 1010 or ENGL 1005, and University Advanced Standing

Covers major trends in Western art from the Paleolithic period to the Gothic era, including elements of political, religious, cultural, literary, and philosophical elements as they impacted the development of art.

**ARTH 3030**
Medieval Art and Architecture History
3:3:0 Fall
* Prerequisite(s): ARTH 2710 (ARTH 2720 recommended), ENGL 1010 or ENGL 1005, and University Advanced Standing

Covers major trends in Western art from the Paleolithic period to the Gothic era, including elements of political, religious, cultural, literary, and philosophical elements as they impacted the development of art.

**ARTH 3040**
Renaissance Art History
3:3:0 Fall
* Prerequisite(s): ARTH 2710 (ARTH 2720 recommended), ENGL 1010 or ENGL 1005, and University Advanced Standing

Covers major trends in Western art from the Paleolithic period to the Gothic era, including elements of political, religious, cultural, literary, and philosophical elements as they impacted the development of art.

**ARTH 3050**
Baroque Art and Architecture History
3:3:0 Spring
* Prerequisite(s): ARTH 2710 (ARTH 2720 recommended), ENGL 1010 or ENGL 1005, and University Advanced Standing

Covers major trends in Western art from the Paleolithic period to the Gothic era, including elements of political, religious, cultural, literary, and philosophical elements as they impacted the development of art.

**ARTH 3055**
Northern Baroque Art History
3:3:0 Fall
* Prerequisite(s): ARTH 2720, ENGL 1010 or ENGL 1005, and University Advanced Standing

Covers major trends in Western art from the Paleolithic period to the Gothic era, including elements of political, religious, cultural, literary, and philosophical elements as they impacted the development of art.

**ARTH 3060**
Renaissance Art History
3:3:0 Spring
* Prerequisite(s): ARTH 2710 (ARTH 2720 recommended), ENGL 1010 or ENGL 1005, and University Advanced Standing

Covers major trends in Western art from the Paleolithic period to the Gothic era, including elements of political, religious, cultural, literary, and philosophical elements as they impacted the development of art.

**ARTH 3070**
Medieval Art and Architecture History
3:3:0 Fall
* Prerequisite(s): ARTH 2710 (ARTH 2720 recommended), ENGL 1010 or ENGL 1005, and University Advanced Standing

Covers major trends in Western art from the Paleolithic period to the Gothic era, including elements of political, religious, cultural, literary, and philosophical elements as they impacted the development of art.
Course Descriptions

**ARTH 3060**
Nineteenth-Century Art History
3:3:0  Spring
* Prerequisite(s): ARTH 2720 (ARTH 2710 recommended), ENGL 1010 or ENGH 1005, and University Advanced Standing

Studies leading artists and movements of the 19th century, emphasizing artistic developments in Europe between 1750 and 1900, primarily in France. Explores the broad historical, social, cultural, and philosophical changes that took place and influenced the visual arts of the century. Includes lecture and class discussions.

**ARTH 3070**
Modern Art and Architecture History
3:3:0  Fall
* Prerequisite(s): ARTH 2720, ENGL 1010 or ENGH 1005, and University Advanced Standing

Studies leading artists, artworks, and movements. Explores the broad cultural, historical, and philosophical influences on modern art and architecture. Includes lectures and class discussions on modern art and architecture. May be delivered online.

**ARTH 3080**
History of Architecture
3:3:0  Fall
* Prerequisite(s): (ARTH 2710 or ARTH 2720 or B-ARCH degree student with department approval), (ENGL 1010 or ENGH 1005), and University Advanced Standing

Surveys developments in architecture over the centuries, focusing on a variety of periods and leading innovators. Includes the role of technology as well as the broad cultural background in which the architecture was created.

**ARTH 309G**
Introduction to Non Western Ancient Art
3:3:0  Spring
* Prerequisite(s): (ARTH 2710 or ARTH 2720), (ENGL 1010 or ENGH 1005), and University Advanced Standing

Introduces students to the art and architecture of the non-western cultures of East Asia, Southeast Asia, Sub-Saharan Africa, Islam, Oceania and the Americas from before the period of Western Colonialism and domination (the course may focus on all or only one of these areas depending on faculty expertise). Places Non-Western art into its native context and discusses the religious, cultural, political, and philosophical world views in which art and architecture were produced in contrast to Western stereotypes or biases of Non-Western cultures.

**ARTH 3100**
History of American Art and Architecture
3:3:0  Spring
* Prerequisite(s): (ARTH 2710 or ARTH 2720 or B-ARCH degree student with department approval), (ENGL 1010 or ENGH 1005), and University Advanced Standing

Studies leading artists, architects and movements in America from the colonial era to the 1950s. Explores the aesthetic, social, political, and technological changes that impacted the development of art and architecture in America, with an emphasis on the styles and movements of the nineteenth and twentieth centuries. Includes lecture and class discussions.

**ARTH 3110**
The History of Illustration
3:3:0  Fall, Spring
* Prerequisite(s): University Advanced Standing

Surveys the history of illustration as visual communication. Discusses major movements and the influence of technological advancements in printing and broadcast media on the field of illustration. Focuses primarily on the period from 1860 to the present.

**ARTH 3120**
History of Contemporary Art
3:3:0  Spring
* Prerequisite(s): (ARTH 2710 or ARTH 2720), (ENGL 1010 or ENGH 1005), and University Advanced Standing

Studies themes and trends related to contemporary art. Explores the diverse influences that impacted art from late modernism to the twenty-first century. Emphasis will be given to understanding the pluralism of international contemporary art from the last three decades. Includes lecture and class discussions.

**ARTH 3200**
The History of Photography
3:3:0  Fall, Spring
* Prerequisite(s): (ARTH 2710 or ARTH 2720) and University Advanced Standing

Traces the different directions photography has taken since its inception, using the social and cultural environment as a context. Investigates the ever-increasing use of photography by artists in the creative process from the first uses of the camera obscura to the present. Discusses the developments that set the stage for the "invention" of photography and how photography changed the role of artists in the 19th and 20th centuries. Covers documentary photography and the rise of fine art photography as separate art forms.

**ARTH 3300**
Introduction to Museum Studies
3:3:0  Fall
* Prerequisite(s): Students must be a declared Art and Design major (or admittance to class by instructor) and have taken either ARTH 2710 or ARTH 2720, University Advanced Standing.

Introduces students to theoretical knowledge and practical skills needed to work in the museum environment. Teaches the basic functions and operations of museums, as well as art historical connections to these nonprofit organizations.

**ARTH 3310**
Art Theory and Criticism
3:3:0  Fall Even Year
* Prerequisite(s): [ARTH 2710 or ARTH 2720 or (HUM 2100 and HUM 2200)] and University Advanced Standing

Examines art theories, explores ideas related to content and understanding the meaning in art by emphasizing interpretation and judgment. Integrates theories and concepts related to both historical and contemporary art history through critical writings and artist statements.

**ARTH 3400**
Arts Management
3:3:0  Fall
* Prerequisite(s): ARTH 2720 and University Advanced Standing

Studies trends, themes, and historical developments related to arts and cultural management. Analyzes the economic, political and social environments in which artists and art organizations operate, including the consideration of legal, ethical, and policy issues. Explores such topics as freedom of expression, arts accessibility, art dealership, corporate partnerships, arts leadership, and globalization of the arts. Investigates the relationships between institutions, businesses, and museums related both to art history and to the contemporary art market.

**ARTH 350G**
Latin American Art and Architectural History
3:3:0  Spring
* Prerequisite(s): (ARTH 2710 or ARTH 2720), (ENGL 1010 or ENGH 1005), and University Advanced Standing

Surveys visual culture of the arts and architecture of Latin America, specifically, Mexico, Central America and South America from its Pre-Columbian roots, through the Colonial Period, Independence, and to contemporary trends in Latin American Art in the 21st century. Concentrates on the complicated interactions between indigenous cultures and imported styles, particularly during the colonial and independence periods, documenting the emergence of a truly unique Latin American identity forged in the synthesis of these sometimes complimentary and often competing cultures.

**ARTH 391R**
Art History Seminar
3:3:0  On Sufficient Demand
* Prerequisite(s): [ARTH 2710 or ARTH 2720], ARTH 2800, (ENGL 1010 or ENGH 1005), and University Advanced Standing

Explores topics within Art and Architectural History. Topics will change each semester to reflect the research activities and interests of the instructor (e.g., "The Life and Art of Michelangelo," "The Current State of Gender Studies in Art History"). May be repeated for a maximum of 12 credits toward graduation.

**American Sign Language (ASL)**

**ASL 1000**
Introduction to the Deaf World
3:3:0  On Sufficient Demand
* Prerequisite(s): [ARTH 2710 or ARTH 2720] and University Advanced Standing

Focuses on the nature, make up, and significance of the Deaf-World as a linguistic and cultural minority group. Gives significant attention to the different ways that deaf people form a minority group thereby adding diversity to society at large. Also addresses the diversity within the group and the sociological factors that affect its makeup. Introduces American Sign Language (ASL) and teaches some basic conversational skills. Gives special attention to the differences between the ways hearing and Deaf people construct meanings associated with deaf people. Taught in (or interpreted into) English.
Course Descriptions

ASL 1010
Beginning American Sign Language I
4:4:1
Fall, Spring, Summer
Introduces American Sign Language (ASL) to students with no previous experience with ASL. Employs an immersion approach to language learning. Emphasizes basic expressive and receptive conversational skills. Includes introduction to American Deaf culture. Requires weekly lab. Lab access fee of $10 applies. Lab access fee of $10 applies.

ASL 1020
Beginning American Sign Language II
4:4:1
Fall, Spring, Summer
* Prerequisite(s): Students should have equivalent knowledge of ASL 1010
Builds on the experiences in ASL 1010. Emphasizes basic expressive and receptive conversational skills through active student participation. Continues introduction to American Deaf culture. Employs an immersion approach to language learning. Requires a weekly lab. Lab access fee of $10 applies.

ASL 115R
ASL Conversation I
1:1:0
Fall
Offers novice ASL users opportunities to enhance their proficiency in the target language by focusing on production. Teaches how to improve authentic pronunciation, reduce errors in authenticity of language structure, generate thought in the target language spontaneously as a substitute for translation, and sharpen comprehension for natural conversational flow. Contrasts with all other first-year courses which must strive to produce mastery of the whole range of language acquisition components. Facilitates lowering the affective filter when conversing in the target language by increasing the frequency of conversational opportunities. Increases mastery of lexical items through increased frequency of use. May be repeated for a maximum of 3 credits toward graduation. Taught in ASL.

ASL 202G
Intermediate American Sign Language II
4:4:0
Fall, Spring, Summer
* Prerequisite(s): Students should have equivalent knowledge of ASL 1020
Continues applied conversation use of ASL through literature, narratives, poetry, and creative sign play. Analyzes ASL grammatical principles and Deaf cultural experiences to explore and understand various underlying metaphors found in ASL literature. Requires Deaf community exposure and involvement. Lab access fee of $10 applies.

ASL 2030
Advanced Fingerspelling
1:1:0
Fall, Spring
* Prerequisite(s): ASL 1020 or equivalent knowledge
Focuses on the patterns of ASL fingerspelling, one of the hardest ASL skills to master. Increases ability to accurately produce and comprehend ASL fingerspelling. Gives attention to the nature and application of fingerspelling within the sociocultural context of the Deaf-World. Taught in ASL.

ASL 2040
ASL Numbers
1:1:0
Fall, Spring
* Prerequisite(s): ASL 1020 or equivalent knowledge
Focuses on the complex rule systems governing ASL numbers as used in a wide range of settings. Increases ability to accurately produce and comprehend contextually situated ASL numbers. Taught in ASL.

ASL 2050
Advanced ASL Grammar
3:3:0
On Sufficient Demand
* Prerequisite(s): Students should have equivalent knowledge of ASL 202G
Explores the grammar of ASL focusing on areas typically difficult for English speakers, particularly ASL classifiers. Provides extensive instruction and opportunity for students to improve both comprehension and production through regular interaction. Taught in ASL. Lab access fee of $10 applies.

ASL 2060
Using Space in ASL
3:3:1
On Sufficient Demand
* Prerequisite(s): ASL 2050
Studies the use of space in ASL productions and how to visualize and describe spatial relationships using ASL. Emphasizes skills necessary to describe space from different angles and point of views, focusing on areas typically difficult for English speakers. Provides extensive instruction and opportunity for students to improve both comprehension and production. Taught in ASL.

ASL 215R
ASL Conversation II
1:1:0
Spring
* Prerequisite(s): Students should have equivalent knowledge of ASL 1020
Offers lower division/novice ASL users opportunities to enhance their proficiency in the target language by focusing on production. Teaches how to improve authentic pronunciation, reduce errors in authenticity of language structure, generate thought in the target language spontaneously as a substitute for translation, sharpen comprehension, and develop conversational strategies such as circumlocution and managing a conversation with useful expressions for starting a conversation, gaining time to think, helping interlocutors, seeking agreement, etc. Contrasts with all other first year courses which must strive to produce mastery of the whole range of language acquisition components. Facilitates lowering the affective filter when conversing in the target language by increasing the frequency of production opportunities and defusing concern about new vocabulary and grammar. Increases mastery of lexical items through increased frequency of use. May be repeated for a maximum of 3 credits toward graduation.

ASL 3000
Technology for Deaf Studies
3:3:1
Fall, Spring
* Prerequisite(s): It is recommended that students complete ASL 202G or have equivalent skills acquired through classes elsewhere or other through life experiences.
Examines various forms of media that will help Deaf Studies students succeed in both the pursuit of their academic degrees and in real-world work environments. Draws on the theoretical approaches of the Visual Culture field to explore visual theory, museums, memorials, film and video. Gives in-depth instruction in the use of multiple digital technologies used in higher-level Deaf Studies classes and in work environments associated with Deaf people. Taught in ASL.

ASL 3010
Foundations and Theory and Methods of Deaf Studies
3:3:0
On Sufficient Demand
* Prerequisite(s): (ASL 202G or equivalent) and University Advanced Standing
Provides Deaf Studies students a foundation for further study. Covers three areas: (1) significant persons and events in the Deaf-World which are often referenced in later courses; (2) significant theoretical approaches in the field; and (3) fundamentals of conducting research. Lays the foundation for students to engage in meaningful inquiry in upper-division coursework. Taught in ASL.

ASL 3050
Advanced American Sign Language
3:3:0
Fall, Spring, Summer
* Prerequisite(s): It is recommended that students complete ASL 202G or have equivalent skills acquired through classes elsewhere or other through life experiences
Focuses on grammatical and linguistic aspects of ASL, including the following: sign formation, morphological structures, syntactic structures, prononimization, identification and analysis of subjects and objects, classifiers, depicting verbs, pluralization, time concepts, and social interaction of language and culture within Deaf communities. Lab access fee of $10 applies.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Department</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASL 315R</td>
<td>ASL Conversation III</td>
<td>ASL</td>
<td>Offers intermediate ASL users opportunities to enhance their proficiency in the target language by focusing on production. Centers on discussions from a selected reading list in 'book club' form. Teaches how to improve authentic pronunciation, reduce errors in authenticity of language structure, generate thought in the target language spontaneously as a substitute for translation, and sharpen comprehension for natural conversational flow. Contrasts with all other third-year courses which are more content based. Facilitates lowering the affective filter when conversing in the target language by increasing the frequency of conversational opportunities. May be repeated for a maximum of 3 credits toward graduation.</td>
</tr>
<tr>
<td>ASL 3310</td>
<td>Foundations of Interpreting</td>
<td>ASL</td>
<td>Introduces bidirectional (ASL-to-English and English-to-ASL) interpreting between Deaf and hearing people. Studies the profession and skills necessary to be an interpreter. Includes history, models, and professional certification procedures of interpreting; cognitive processes, physical and psychological factors, intercultural communication, ethics, and situational interpreting. Deaf students are encouraged to enroll. This course may be taught as a hybrid.</td>
</tr>
<tr>
<td>ASL 3320</td>
<td>Physiology of Interpreting</td>
<td>ASL</td>
<td>Introduces students to skills and processes required to maintain health and wellbeing in the physically demanding and high stress field of interpreting. Develops cognitive, ergonomic, and dual tasking abilities required to interpret without stress or physical injury. Helps students better understand how a healthy lifestyle and developing good habits can improve their skills and prevent injury. Lab access fee of $10 applies.</td>
</tr>
<tr>
<td>ASL 3330</td>
<td>Cross Cultural Communication and Interpreting</td>
<td>ASL</td>
<td>Builds on ASL 3310. Focuses heavily on the practice of interpreting with special emphasis on the dimension of intercultural communication. Requires regular skill-building exercises in both consecutive and simultaneous interpretation, both English-to-ASL and ASL-to-English. Deaf students are encouraged to enroll. Taught in ASL. Lab access fee of $10 applies.</td>
</tr>
<tr>
<td>ASL 3340</td>
<td>Interpreting as a Profession</td>
<td>ASL</td>
<td>Builds on the principles (ASL-to-English and English-to-ASL) for interpreting between Deaf and hearing people taught in Interpreting I. Studies the profession and skills necessary to be an interpreter in more specialized settings such as medical, legal, mental health, and theatre. Includes history, models, and professional certification procedures of interpreting; cognitive processes, physical and psychological factors, intercultural communication, ethics, and situational interpreting. Deaf students are encouraged to enroll. Lab access fee of $10 applies.</td>
</tr>
<tr>
<td>ASL 3350</td>
<td>Consecutive Interpreting</td>
<td>ASL</td>
<td>Introduces skills and processes required to produce consecutive interpretations. Focuses on developing basic cognitive, semantic, and dual tasking abilities required to interpret rehearsed and/or spontaneous texts. Teaches to incorporate semantic choice, register, and ethical behavioral decisions and understand how they impact interpretation. Develops sets of technical or field-specific signs and applies these to interpretative work. Includes one-hour per week lab. Taught in ASL. Lab access fee of $10 applies.</td>
</tr>
<tr>
<td>ASL 3360</td>
<td>Simultaneous Interpreting</td>
<td>ASL</td>
<td>Introduces skills and processes required to produce simultaneous interpretations. Focuses on transitioning from consecutive interpreting to time-limited simultaneous interpreting. Develops cognitive, semantic, and dual tasking abilities required to interpret spontaneous texts. Teaches and incorporates more advanced semantic choices and negotiation techniques. Works with a variety of audience sizes and types. Teaches how ethics impact behavioral decisions and interpretations. Includes one-hour per week lab. Lab access fee of $10 applies.</td>
</tr>
<tr>
<td>ASL 3365</td>
<td>Deaf Interpreting in the Community</td>
<td>ASL</td>
<td>Examines the roles, responsibilities and benefits of Certified Deaf Interpreters. Prepares Deaf interpreters for certification as Certified Deaf Interpreters (as recognized by the Registry of Interpreters for the Deaf). Prepares hearing interpreters to work in teams with Deaf interpreters. Examines settings, ethics, roles, theory and hands-on exercises.</td>
</tr>
<tr>
<td>ASL 3370</td>
<td>Sign to Voice Interpreting</td>
<td>ASL</td>
<td>Introduces skills and processes required to produce conceptually accurate and linguistically appropriate voice interpretations of ASL texts. Develops cognitive, semantic, and dual tasking abilities required to interpret spontaneous texts. Teaches and incorporates more advanced semantic choices and negotiation techniques. Works with a variety of audience sizes and types. Teaches how ethics impact behavioral decisions and interpretations. Includes one-hour per week lab. Lab access fee of $10 applies.</td>
</tr>
<tr>
<td>ASL 3380</td>
<td>Transliteration</td>
<td>ASL</td>
<td>Provides students advanced study and skills development in the business and profession of interpreting, decision making while interpreting between Deaf (including Deafblind) and hearing populations, and negotiation of the complex and growing field of interpreting. Students develop the understanding of the day to day demands of the work needed become truly professional interpreters. Provides extensive individual feedback. Lab access fee of $10 applies.</td>
</tr>
<tr>
<td>ASL 3510</td>
<td>History of Deaf People to 1817</td>
<td>ASL</td>
<td>Explores chronologically to 1817 the formation and treatment of the Deaf community and culture. Emphasizes the rise of deaf education in a European setting and on the links to American Deaf education. Examines perceptions of deaf people and language across this period. Taught in ASL.</td>
</tr>
</tbody>
</table>
Course Descriptions

ASL 3520
History of Deaf People after 1817
3:3:0 Fall, Spring
* Prerequisite(s): ASL 202G or equivalent and University Advanced Standing

Explores the evolution and treatment of the Deaf community and culture emphasizing activities in the United States chronologically from 1817 onward. Emphasizes the rise of oralism, the development of deaf residential schools, the emergence of American Deaf culture and the recognition of ASL as a true language. Taught in ASL.

ASL 3530
Modern Deaf Culture
3:3:0 Fall, Spring
* Prerequisite(s): ASL 202G or equivalent knowledge and University Advanced Standing

Examines the historical contributions of early Deaf artists and their subject matter and style represent a Deaf worldview. Takes as a reference other art periods. Examines the contributions of early Deaf artists whose mores, beliefs, values and traditions emanate from a shared worldview that differs markedly from the view usually ascribed to them by non-intimates. Taught in ASL. May be delivered hybrid and/or online.

ASL 3610
ASL Literature
3:3:0 Fall, Spring, Summer
* Prerequisite(s): ASL 3050 and University Advanced Standing

Examines oppression in various forms through a comparative study spanning across cultures and communities. Examines the parallels between widely-understood forms of oppression and those specific to the Deaf-World. Fulfills Global/Intercultural graduation requirement. Taught in ASL.

ASL 3750
Deaf Cinema
3:3:0 Spring
* Prerequisite(s): ASL 3050 and University Advanced Standing

Examines the critical role film plays in Deaf culture and the Deaf community. Uses film as a background to critically think about and address key issues that Deaf people encounter in society. Studies various lenses of Deaf themes and Deaf characters in movies, as well as how Deaf people have been involved with creating movies throughout history and contrasts this with the ways film has been a mold for the ideology and identity of Deaf people. Introduces concepts of film composition and critiquing tools. Taught in ASL. May be delivered hybrid.

ASL 385G
Audism/Linguicism/Oppression
3:3:0 Fall, Spring
* Prerequisite(s): ASL 3050 and (ASL 3510 or ASL 3520 or ASL 3530) or department approval and University Advanced Standing

Examines oppression in various forms through a comparative study spanning across cultures and communities. Examines the parallels between widely-understood forms of oppression and those specific to the Deaf-World. Fulfills Global/Intercultural graduation requirement. Taught in ASL.

ASL 415R
ASL Conversation IV
1:1:0 Fall
* Prerequisite(s): ASL 3050 and University Advanced Standing

Examines oppression in various forms through a comparative study spanning across cultures and communities. Examines the parallels between widely-understood forms of oppression and those specific to the Deaf-World. Fulfills Global/Intercultural graduation requirement. Taught in ASL.

ASL 415R
ASL Conversation IV
1:1:0 Fall
* Prerequisite(s): ASL 3050 and University Advanced Standing

Examines oppression in various forms through a comparative study spanning across cultures and communities. Examines the parallels between widely-understood forms of oppression and those specific to the Deaf-World. Fulfills Global/Intercultural graduation requirement. Taught in ASL.

ASL 4360
Legal Interpreting
3:3:0 Fall
* Prerequisite(s): ASL 3310 and University Advanced Standing

Provides a conceptual understanding of the American legal system, and the unique cultural challenges related to interpreting for parties within the system. Examines both the law and Deafness and the areas of language and cultural mediation required to effectively facilitate communication between people who are Deaf and people who are hearing in legal settings. Lab access fee of $10 applies.

ASL 4370
Ethics for Interpreters
3:3:0 Fall, Spring
* Prerequisite(s): ASL 3310 and University Advanced Standing

Examines oppression in various forms through a comparative study spanning across cultures and communities. Examines the parallels between widely-understood forms of oppression and those specific to the Deaf-World. Fulfills Global/Intercultural graduation requirement. Taught in ASL.

ASL 4380
Applying Interpreting Skills to Coursework--Medical
3:3:0 Fall
* Prerequisite(s): ASL 3350; ASL 3360, matriculation into the Interpreting Emphasis, and University Advanced Standing

Guides interpreters through skill sets applied to real life classroom lectures, specifically medical and psychology courses offered online through accredited universities. Requires practical application of specific interpreting skills and techniques as well as course preparation and acquisition of course specific knowledge to develop balanced interpreting practices, including both specific applicable skills in interpretation and a broad based liberal arts knowledge to which the skills are applied.

ASL 4381
Applying Interpreting Skills to Coursework--Law
3:3:0 Spring
* Prerequisite(s): ASL 3350, ASL 3360, matriculation into the Interpreting Emphasis, and University Advanced Standing

Guides interpreters through skill sets applied to real life classroom lectures, specifically law and justice courses offered online through accredited universities and sample courtroom scenarios. Requires practical application of specific interpreting skills and techniques as well as course preparation and acquisition of course specific knowledge to develop balanced interpreting practices, including both specific applicable skills in interpretation and a broad based liberal arts knowledge to which the skills are applied.
ASL 4382
Applying Interpreting Skills to Coursework--Education
3:3:0  Fall
* Prerequisite(s): ASL 3350, ASL 3360, matriculation into the Interpreting Emphasis, and University Advanced Standing.

Guides interpreters through skill sets applied to real life classroom lectures, specifically education and other courses offered online through accredited universities. Requires practical application of specific interpreting skills and techniques as well as course preparation and acquisition of course specific knowledge to develop balanced interpreting practices, including both specific applicable skills in interpretation and a broad based liberal arts knowledge to which the skills are applied.

ASL 4383
Applying Interpreting Skills to Coursework--Community
3:3:0  Spring
* Prerequisite(s): ASL 3350, ASL 3360, matriculation into the Interpreting Emphasis, and University Advanced Standing.

Guides interpreters through skill sets applied to real life classroom lectures and instruction including business, manufacturing and organizational courses offered online through accredited universities. Requires practical application of specific interpreting skills and techniques as well as course preparation and acquisition of course specific knowledge to develop balanced interpreting practices, including both specific applicable skills in interpretation and a broad based liberal arts knowledge to which the skills are applied.

ASL 439R
Special Topics in Interpreting
3:3:1  On Sufficient Demand
* Prerequisite(s): ASL 3310 and University Advanced Standing

Provides students advanced study and skills development in interpreting between deaf (including deaf-blind) and hearing populations. Focuses on different topics as deemed appropriate (e.g., variety of academic, business, or social contexts). Provides extensive individual feedback to rapidly improve students' interpreting skills and understanding of the complex nature of the interpreting process. Repeatable for a maximum of 9 credits toward graduation. Lab access fee of $10 applies.

ASL 4410
ASL Linguistics
3:3:0  Fall, Spring, Summer
* Prerequisite(s): ASL 3050 and University Advanced Standing

Introduces the linguistic study of ASL, including phonology, morphology, syntax, semantics, and discourse structure. Emphasizes grammatical structures of ASL, including sign formation, pronominalization, identification and analysis of subjects and objects, classifiers, depicting verbs, pluralization, time concepts, and social interaction of language and culture within Deaf communities. Taught in ASL.

ASL 4450
Deaf World Discourse
3:3:0  Fall
* Prerequisite(s): ASL 3050 and University Advanced Standing

Examines the discourse practices of the Deaf-World. Studies the ways that Deaf people use discursive forms to accomplish specific social aims. Explores the semiotic connections between discursive forms and various Deaf-World identities. Adopts an anthropological bias toward real-world discourse as primary data, and prepares students to do ethnographic fieldwork in the Deaf-World. Taught in ASL.

ASL 4520
Deaf People and Disability Studies
3:3:1  Spring
* Prerequisite(s): ASL 3050 and University Advanced Standing

Introduces the field of disability studies and shows where Deaf people fit within this field. Explores the historical, social, political, religious, philosophical, and cultural influences that construct and influence the categories of "disability" and "deafness." Examines the complex relation between Deaf and disability rights groups as well as how Deaf persons and persons with disabilities construct their own meanings and identities. Taught in ASL.

ASL 4530
Deaf Peoples of the World
3:3:0  Spring
* Prerequisite(s): ASL 3530 and University Advanced Standing

Explores the lives of Deaf people in various places around the world. Considers the extent to which the deaf experience is cross-cultural and to what extent it is unique to specific locations. Explores the lifestyles, educational opportunities, political climate and level of community development of deaf people across the globe. Seeks to illuminate areas of overlap and of difference among the worldviews of various communities.

ASL 4550
Multicultural Deaf Lives
3:3:0  Fall, Spring
* Prerequisite(s): ASL 3050 and University Advanced Standing

Focuses on cultural issues, values, behaviors, identities and language of Deaf people from diverse backgrounds. Examines autobiographies, documentaries, films, videos, and academic literature to help understand the contributions and historical development of the emerging majority of the Deaf community that is underrepresented in the United States and the world. Taught in ASL. May be delivered online.

ASL 4560
Deaf People and the Law
3:3:0  Spring
* Prerequisite(s): ASL 3050 and University Advanced Standing

Focuses on the impact of laws and the legal system in the lives of people who are Deaf and the role such laws and the legal system play in the general understanding of Deafness in the United States. Explores in detail the rights of persons who are Deaf in a hearing world. Taught in ASL.

ASL 4610
ASL Literature II
3:3:0  Spring, Summer
* Prerequisite(s): ASL 3610 and University Advanced Standing

Explores the dynamics of ASL literature and its traditions by studying various genres and ASL storytellers/poets. Covers stories with handshape constraints, poetry, and songs. Taught in ASL. May be delivered hybrid and/or online.

ASL 4800
Deaf Culture Studies WE
3:3:0  Fall, Spring
* Prerequisite(s): (ASL 3510 or 3520 or 3530) and University Advanced Standing

Explores advanced concepts relative to American Deaf culture, including cultural conflicts, tensions, and contradictions. Provides a comprehensive study of the Deaf-World through analysis of historical events, current issues, writing, and the expressions of Deaf people themselves. Taught in ASL. Lab access fee of $10 applies.

ASL 4850
Advanced Understanding of Oppression and Audism
3:3:0  On Sufficient Demand
* Prerequisite(s): ASL 385G and University Advanced Standing

Examines the various ways in which hearing people oppress Deaf people. Explores different avenues through which society has built a system of privilege based on an audiocentric center. Also examines how certain members of the Deaf community internalize audist constructions of deafness.

ASL 4890
Deaf Studies Senior Capstone
3:3:0  On Sufficient Demand
* Prerequisite(s): Senior status and University Advanced Standing
* Prerequisite(s) or Corequisite(s): ASL 4800

Engages students in a synthesis and critical review of what they have learned through coursework. Produces a project or thesis reflecting students' knowledge and passionate interests developed in the course of their study as a Deaf Studies major. Taught in ASL.

ASL 490R
Special Topics in Deaf Studies
1 to 3:1  to 3:0 to 1
* Prerequisite(s): ASL 3050 and University Advanced Standing

Presents selected topics in Deaf Studies. Varies each semester. Topics will reflect the interdisciplinary nature of the Deaf Studies field. Projects and evaluation will vary according to the topic. May be repeated for a maximum of 9 credits with different topics.
Course Descriptions

ASL 495R
Independent Study in Deaf Studies
1 to 3:1 to 3:0 On Sufficient Demand
* Prerequisite(s): For Deaf Studies students only; Instructor approval, Program Coordinator/Department Chair approval, and University Advanced Standing

Provides independent study as directed in reading and individual projects specifically related to the Deaf Studies field at the discretion and approval of the Dean and/or Department Chair. May be repeated for a maximum of 6 credits toward graduation.

Astronomy (ASTR)

ASTR 1040PP
Elementary Astronomy
3:3:0 Fall, Spring, Summer

Introduces astronomy and cosmology. Provides a physics-based overview of the solar system, the lives and deaths of stars, galaxies, and the evolution of the Universe. Explores the basic principles of physics and light, the tools of astronomy, and interesting concepts such as the Big Bang and black holes. Canvas Course Mats $67/Pearson applies

ASTR 104H
Elementary Astronomy PP
3:3:0 Spring

As an honors section, this course requires a greater level of engagement and greater level of proficiency on the part of the student. Introduces astronomy and cosmology. Provides a physics-based overview of the solar system, the lives and deaths of stars, galaxies, and the evolution of the Universe. Explores the basic principles of physics and light, the tools of astronomy, and interesting concepts such as the Big Bang and black holes.

ASTR 1050
Investigations of the Solar System
3:3:0 On Sufficient Demand
* Prerequisite(s): MAT 1030 or any higher mathematics

Offers a descriptive and conceptual survey of the solar system. Describes the probable origin and evolution of the sun and planets, and the workings of the sun. Covers light, optics and spectroscopy, and the mechanics of orbital motion. Compares planets by their origins, structures and atmospheres. While the presentation is primarily qualitative, assumes rudimentary math skills on the part of the student to facilitate comparative studies of solar system objects.

ASTR 1060
Investigations of Stars and Galaxies
3:3:0 On Sufficient Demand
* Prerequisite(s): MAT 1030 or any higher mathematics

Describes the origins and evolutions of stars, and collections of stars, galaxies and clusters of galaxies. Includes introduction to cosmology. Teaches the law of gravity and those laws of physics connected with optics and spectroscopy. Emphasizes conceptual learning, and assumes rudimentary mathematical skills on the part of students to facilitate comparative studies.

ASTR 1070PP
Cultural Astronomy in Our Lives
3:3:0 Spring

Explores the visible sky as seen with the naked eye. Presents examples of cultural interpretations of the sun, moon, planets and stars, methods of keeping calendars, and changes that occur through the seasons. Studies the motions of the planets, including the earth, and changes in the sky from different latitudes. Investigates how astronomy has impacted the lives of people throughout the ages and around the world. Includes extensive use of the UVU planetarium, nighttime observation, illustrated lectures, and class demonstrations. Canvas Course Mats $67/Pearson applies

ASTR 107H
Cultural Astronomy in Our Lives
3:3:0 On Sufficient Demand

Explores the visible sky as seen with the naked eye. Presents examples of cultural interpretations of the sun, moon, planets and stars, methods of keeping calendars, and changes that occur through the seasons. Studies the motions of the planets, including the earth, and changes in the sky from different latitudes. Investigates how astronomy has impacted the lives of people throughout the ages and around the world. Includes extensive use of the UVU planetarium, nighttime observation, illustrated lectures, and class discussion.

ASTR 1080 PP
Life in the Universe
3:3:0 Fall

Presents a general introduction to the scientific method of understanding life, its origins, and its place in the universe. Discusses the philosophy governing the scientific view of learning about life. Treats in detail what life is, the adaptability of life and how it evolves, why Earthlike conditions resulted in life as we know it, what other environmental conditions might sustain life, and where life may be found beyond Earth.

ASTR 2040
Intermediate Astronomy
3:3:0 Fall, Spring
* Prerequisite(s): PHYS 2210

Introduces astronomy and cosmology with an emphasis on the physical principles underlying astronomical phenomena. Provides a physical and mathematical overview of the solar system, the nature and evolution of stars, galaxies, dark matter and dark energy, the large scale structure of the Universe, the Big Bang, and Inflation.

ASTR 290R
Independent Study
1 to 5:0 to 5:0 to 15 On Sufficient Demand

For students interested in advanced topics in astronomy and cosmology. Students may choose their own course of study under the guidance of an assigned faculty member.

ASTR 3050
Astrophysics I
3:3:0 Fall
* Prerequisite(s): PHYS 2220, MATH 1220, and University Advanced Standing

Covers the physics of stars, stellar structure and evolution, and the solar system. Treats in detail the current methods of astronomical data collection and analysis. Discusses the mathematics of the laws of stellar structure and their implications for the birth, life, and death of stars.

ASTR 3060
Astrophysics II
3:3:0 Spring
* Prerequisite(s): PHYS 2220, MATH 1220, ASTR 3050, and University Advanced Standing

Covers the physics of galaxies and cosmology. Treats in detail the current methods of astronomical data collection and analysis as it relates to these topics. Discusses the mathematics of the Theories of Relativity and its implications for the origin and structure of the Universe.

ASTR 4100
Brown Dwarfs and Exoplanets
3:3:0 Fall
* Prerequisite(s): PHYS 2220, MATH 1220, and University Advanced Standing
* Prerequisite(s) or Corequisite(s): PHYS 3100

Provides an advanced, calculus-based introduction to the rapidly evolving field of brown dwarfs and extrasolar planets (exoplanets). Includes topics related to the theory of substellar objects, planetary formation, planetary interiors, planetary atmospheres, planetary orbits, and observational methods for detecting and characterizing brown dwarfs and exoplanets.

ASTR 4350
Research Methods in Astronomy
3:1 to 2:2 to 4 On Sufficient Demand
* Prerequisite(s): ASTR 3050, University Advanced Standing, and Department and Instructor Approval

Presents directed topics in research methods in astronomy. Prepares students to conduct astronomy research projects. Emphasizes practical methodologies in measurement, software, error analysis, and statistical analysis. Requires a class project. May require use of specialized astronomical image processing software (e.g., IRAF and PyRAF) and other programming languages. Includes practice producing oral presentations, posters and journal articles using contemporary software and LaTeX.

Auto Mechanics (AUT)

AUT 1000
Survey of Automotive Technology
2:2:0 Fall, Spring

An introductory course for those interested in Automotive Technology. Presents basic automotive repair lessons on ignition and fuel systems, brakes, CV joints, and emissions for state inspections. Discusses electrical accessories, computerized engine controls, and chassis components.

AUT 100L
Survey of Automotive Lab
1:0:3 Fall, Spring
* Corequisite(s): AUT 1000

Introductory course for those interested in Automotive Technology. Offers basic automotive repair lab experiences on proper and safe equipment usage, vehicle construction, engine operation, steering and suspension components, brakes, measuring and diagnostic tools. Tool room fee of $19 for equipemnt applies.
AUT 1010
Maintenance and Light Repair
2:2:0  Fall, Spring, Summer
Teaches skills in shop safety and basic skills to prepare students for future automotive technology-related courses and placement in high skill, high paying employment. Includes service information systems, precision measurement, tire and wheel service, bearings, headlamp adjustment, lubricants and fluids, cleaning methods, gaskets and sealants, belts and hoses, cooling systems, and other systems.

AUT 101L
Maintenance and Light Repair Lab
2:0:6  Fall, Spring, Summer
* Prerequisite(s) or Corequisite(s): AUT 1010
Develops necessary skills in shop safety and basic maintenance skills. Presents basic maintenance and light repair of vehicle systems. Prepares students for future automotive technology related courses and placement in high skill, high paying employment areas. Examines vehicle system operations such as: service information, precision measurement, tires and wheels, bearings, headlamp adjustment, lubricants and fluids, cleaning methods, gaskets and sealants, belts and hoses and cooling systems

AUT 1110
Brake Systems
2:2:0  Fall, Spring
* Corequisite(s): AUT 111L Recommended
For automotive majors and other interested community members. Covers the principles of automotive braking including hydraulic theory, diagnosis, and service of brake systems. Studies drum, disc, and power units. Includes wheel bearing adjustments, packing, and troubleshooting. Discusses tire construction including both lateral and radial run out and wheel balancing techniques. Software fee of $10 applies. Lab access fee of $15 for computers applies

AUT 111L
Brake Systems Lab
1:0:3  Fall, Spring
* Prerequisite(s) or Corequisite(s): AUT 1110
Provides hands on brake systems instruction, including drum, disc, and power units. Includes wheel bearing adjustments, packing, and troubleshooting. Labs include tire construction, both lateral and radial run out and wheel balancing techniques. Tool room fee of $19 for equipment applies. Course Lab fee of $17 for computers applies

AUT 1120
Manual Power Trains
2:2:0  Fall, Spring
* Corequisite(s): AUT 112L Recommended
For automotive majors and other interested community members. Designed to develop skills and knowledge in the area of manual transmission/transaxles and driveline components. Covers the function, construction, operation, inspection, troubleshooting and servicing of front, rear, and four-wheel drive power transmission devices used in passenger cars and light trucks. Software fee of $10 applies. Lab access fee of $15 for computers applies

AUT 112L
Manual Power Trains Lab
1:0:3  Fall, Spring
* Prerequisite(s) or Corequisite(s): AUT 1120
Defin diagnosis and repair of manual transmissions including transaxles, differentials, drive shafts, and four wheel drive components. Operation of clutches with torque and gear application. Tool room fee of $19 for equipment applies. Course Lab fee of $16 for materials applies

AUT 1130
Engine Repair
2:2:0  Fall, Spring
* Corequisite(s): AUT 113L Recommended
Offers an in-depth study of design, operation, troubleshooting, and service procedures for modern gasoline and diesel engines. Presents procedures for disassembly and reassembly of engine units, service, and technical data. Software fee of $10 applies. Lab access fee of $15 for computers applies

AUT 113A
Engine Repair
1:0:3  Fall, Spring
For automotive majors and other interested community members. Studies construction, operation, and performance of various types of engines. Covers the theory of combustion, and characteristics of fuels, lubrication systems, cooling systems, timing valves, and wear problems with all other parts of the engine. Includes lab experience. Tool room fee of $10 for equipment applies

AUT 113B
Engine Repair
2:1:3  Fall, Spring
Designed for anyone interested in small-engine repair. Includes hands hands-on application with shop time. Offers practical information about small engines, theory, operations, and maintenance. Provides information, troubleshooting and service techniques for snowmobiles, 4-wheelers, personal watercraft, mowers, tillers, and other small engine applications

AUT 113L
Engine Repair Lab
1:0:3  Fall, Spring
* Prerequisite(s) or Corequisite(s): AUT 113L
Provides a laboratory experience enhanced by following the Engine Repair ASE task list. Emphasizes demonstrations, observations and hands-on participation. Utilizes actual vehicle systems of major manufacturers to supplement training. Tool room fee of $19 for equipment applies. Course Lab fee of $17 for materials applies

AUT 1140
Engine Electrical Systems
1:0:3  Fall, Spring, Summer
* Corequisite(s): AUT 114L Recommended
Studies the function, construction, operation, testing, diagnosis and servicing of automotive ignition systems, starting, charging/generator systems and battery testing using a variety of diagnostic test equipment.

AUT 114L
Automotive Electrical Systems Lab
1:0:3  Fall, Spring, Summer
* Prerequisite(s) or Corequisite(s): AUT 1140
Studies electrical and electronic fundamentals found and used on current model automobiles and trucks. Topics of study are: electricity, Ohm’s Law, magnetism, inductance, capacitance, electronic devices, schematic user’s information, test procedures, test equipment, and batteries. Lab exercises include lab experience. Tool room fee of $19 for equipment applies. Course Lab fee of $17 for materials applies

AUT 1150
Suspension and Steering Systems
2:2:0  Fall, Spring
* Prerequisite(s): AUT 1110, AUT 1120, AUT 1130, and AUT 1160
* Corequisite(s): AUT 115L Recommended
Studies the function, construction, operation, testing, diagnosis and servicing of automotive suspension systems, starting, charging systems and battery testing using a variety of diagnostic test equipment. Proper use of diagnostic test equipment in the lab and on vehicle systems will stressed. Tool room fee of $19 for equipment applies. Course Lab fee of $17 for materials applies

AUT 115L
Suspension and Steering Systems Lab
1:0:3  Fall, Spring, Summer
Provides a laboratory experience enhanced by following the Suspension and Steering ASE task list. Emphasizes demonstrations, observations and hands-on participation. Utilizes actual vehicle systems of major manufacturers to supplement training. Tool room fee of $19 for equipment applies. Course Lab fee of $17 for materials applies

AUT 1160
Automotive Electrical Systems
2:2:0  Fall, Spring, Summer
* Corequisite(s): AUT 116L Recommended
Studies electrical and electronic fundamentals found and used on current model automobiles and trucks. Topics of study are: electricity, Ohm’s Law, magnetism, inductance, capacitance, electronic devices, schematic user’s information, test procedures, test equipment, and batteries. Lab exercises include lab experience. Tool room fee of $19 for equipment applies. Course Lab fee of $17 for materials applies

AUT 116L
Automotive Electrical Systems Lab
1:0:3  Fall, Spring, Summer
* Prerequisite(s) or Corequisite(s): AUT 1160
AUT 1220  Automatic Powertrain Systems  
2:2:0  Fall, Spring
* Prerequisite(s): AUT 1110, AUT 1120, AUT 1130, and AUT 1160
* Corequisite(s): AUT 122L

Includes the operation, diagnosis, repair, and adjustment of automatic transmissions and transaxles. Covers planetary gearing, strategies for operation, and service procedures of passenger car, SUVs and light-trucks. Software fee of $10 for lab applies. Lab access fee of $15 for computers applies.

AUT 122L  Automatic Transmissions and Transaxles Lab  
1:0:3  Fall, Spring
* Prerequisite(s) or Corequisite(s): AUT 1220

Provides a laboratory experience enhanced by following the Automatic Transmissions and Transaxles ASE task list. Emphasizes demonstrations, observations and hands-on participation. Utilizes actual vehicle systems of major manufacturers to supplement training. Tool room fee of $19 for equipment applies. Course Lab fee of $17 for materials applies.

AUT 1230  Engine Performance  
2:2:0  Fall, Spring
* Prerequisite(s): AUT 1110, AUT 1120, AUT 1130, and AUT 1160
* Corequisite(s): AUT 123L Recommended

Studies electrical and fuel systems fundamentals found on passenger cars, light-trucks, and marine applications of theory, operation, and construction. Includes solid state electronic ignition systems. Teaches tune-up including diagnosis and troubleshooting. Computerized fuel injection found on gasoline and diesel engines will also be studied. Software fee of $10 applies. Lab access fee of $15 for computers applies.

AUT 123A  Engine Performance  
1:1:3  Fall

For automotive majors and other interested community members. Studies electrical and fuel system fundamentals including theory, construction and principles of operation. Covers batteries, lighting, starting, and charging. Includes all solid state electronic and ignition systems. Teaches tune-up including diagnosis and troubleshooting. Studies computerized ignition and fuel injection. Includes lab experience.

AUT 123B  Engine Performance 2nd Half  
2:1:3  Spring

Includes advanced instruction in engine performance, starting systems, charging systems, and indicator circuits. Discusses all mechanical and electronic parts of the vehicle relative to quality engine tune-up and diagnostic instruction. Includes lab experience.

AUT 123L  Engine Performance Lab  
1:0:3  Fall, Spring
* Prerequisite(s) or Corequisite(s): AUT 1230

Provides a laboratory experience enhanced by following the Engine Performance ASE task list. Emphasizes demonstrations, observations and hands-on participation. Utilizes actual vehicle systems of major manufacturers to supplement training. Tool room fee of $19 for equipment applies. Course Lab fee of $17 for materials applies.

AUT 1260  Tech Math for Mechanics  
3:3:0  Fall, Spring

For students in Automotive, Collision Repair, and Diesel Technology majors. Covers principles of math as required by the industry. Studies pressures, measuring engine and horsepower output, hydraulics, torque, and electrical flow. Includes solving equations in percent, proportion, variation, formula rearrangement, function and graphs with right and oblique triangles. Successful completers should be able to solve problems on the job using technical and mathematical data.

AUT 201L  Automotive Service Practicum Engine Performance and Steering Suspension  
2:0:6  Fall
* Prerequisite(s): AUT 1210, AUT 1230 with a grade of C- or better

Includes field type service work in an instructional setting. Emphasizes vehicle service needs which are most frequently required in modern commercial service centers. Requires the diagnosis and repair of computerized vehicle systems. Includes standards for quality and quantity of work produced. Studies parts procurement, estimates, repair orders, and customer relations. Follows ASE P2 Performance Tasks for Steering/Suspension and Engine Performance. Tool room fee of $19 for equipment applies. Course Lab fee of $17 for materials applies.

AUT 203L  Automotive Service Practicum Brake Systems and Transmission Controls  
2:0:6  Spring
* Prerequisite(s): AUT 1110, AUT 1160, AUT 1220 with a grade of C- or better

Includes field type service work in an instructional setting. Emphasizes vehicle service needs which are most frequently required in modern commercial service centers. Requires the diagnosis and repair of computerized vehicle systems. Includes standards for quality and quantity of work produced. Studies parts procurement, estimates, repair orders, and customer relations. Follows ASE P2 Performance Tasks for Automatic Transmissions and Brake Systems including Anti-Lock and Traction Control. Tool room fee of $19 for equipment applies. Course Lab fee of $17 for materials applies.

AUT 210L  Advanced Steering and Suspension/Alignment  
2:2:0  Fall
* Prerequisite(s): AUT 1210, AUT 1160 with a grade of C- or better
* Corequisite(s): AUT 201L Recommended

Discusses advanced theory of two-wheel and four-wheel alignment. Studies nomenclature, theory of operation and service procedures for mechanical, electronic, and electrical parts of automotive steering and suspension systems. Software fee of $10 applies. Lab access fee of $15 for computers applies.

AUT 211L  Automotive Service Practicum Steering/Suspension/Alignment Lab  
1:0:3  Fall
* Prerequisite(s): AUT 1210
* Corequisite(s): AUT 2110

Includes field type service work in an instructional setting. Emphasizes vehicle service needs which are most frequently required in modern commercial service centers. Requires the diagnosis and repair of computerized vehicle systems. Includes standards for quality and quantity of work produced. Studies parts procurement, estimates, repair orders, and customer relations. Follows ASE P2 Performance Tasks for Steering/Suspension.
AUT 2120 Advanced Engine Performance 2:2:0 Fall
* Prerequisite(s): AUT 1130, AUT 1230, AUT 1160 with a grade of C- or better
* Corequisite(s): AUT 202L Recommended

Includes advanced instruction in engine performance, indicator circuits and On-Board Diagnostics II (OBD-II). Discusses mechanical and electronic parts of the vehicle relative to quality engine tune-up and diagnostic instruction. Software fee of $10 applies. Lab access fee of $15 for computers applies.

AUT 212L Automotive Service Practicum Engine Performance Lab 1:0:3 Fall
* Prerequisite(s): AUT 1230
* Corequisite(s): AUT 2120

Includes field type service work in an instructional setting. Emphasizes vehicle service needs which are most frequently required in modern commercial service centers. Requires the diagnosis and repair of computerized vehicle systems. Includes standards for quality and quantity of work produced. Studies parts procurement, estimates, repair orders, and customer relations. Covers tasks related to engine performance.

AUT 2130 Advanced Emission Control Systems 2:2:0 Fall
* Prerequisite(s): AUT 1130, AUT 1230, AUT 1160 with a grade of C- or better
* Corequisite(s): AUT 202L Recommended

Studies emissions control systems on vehicles. Reviews county emissions certification requirements. Emphasizes the pre and post testing of the different emission systems and the control of the systems as they apply to different types of fuel systems. Software fee of $10 applies. Lab access fee of $15 for computers applies.

AUT 213L Automotive Service Practicum Emission Controls Lab 1:0:3 Fall
* Prerequisite(s): AUT 1230
* Corequisite(s): AUT 2130

Includes field type service work in an instructional setting. Emphasizes vehicle service needs which are most frequently required in modern commercial service centers. Requires the diagnosis and repair of computerized vehicle systems. Includes standards for quality and quantity of work produced. Studies parts procurement, estimates, repair orders, and customer relations. Follows ASE P2 Performance Tasks for Emission Control Systems.

AUT 2140 Chassis Electrical and Electronics Systems 2:2:0 Fall
* Prerequisite(s): AUT 1160, AUT 1170 with a grade of C- or better
* Corequisite(s): AUT 202L Recommended

Studies theory, diagnosis, and repair of chassis electrical and electronic systems. Includes the study of lighting systems, electronic dash circuits, inflatable restraint systems, electronic cruise control systems and other accessories found on vehicles.

AUT 214L Automotive Service Practicum Chassis Electrical and Electronics Lab 1:0:3 Fall
* Prerequisite(s): AUT 1160
* Corequisite(s): AUT 2140

Includes field type service work in an instructional setting. Emphasizes vehicle service needs which are most frequently required in modern commercial service centers. Requires the diagnosis and repair of computerized vehicle systems. Includes standards for quality and quantity of work produced. Studies parts procurement, estimates, repair orders, and customer relations. Follows ASE P2 Performance Tasks for Chassis Electrical.

AUT 2210 Advanced Braking and Control Systems 2:2:0 Spring
* Prerequisite(s): AUT 1110, AUT 1160 with a grade of C- or better
* Corequisite(s): AUT 221L Recommended

Covers diagnosis and repair of electronic controlled braking systems; including anti-lock brakes, traction control systems, stability control systems and other control systems found on modern vehicles. Software fee of $10 applies. Lab access fee of $15 for computers applies.

AUT 221L Automotive Service Practicum Brake Systems Lab 1:0:3 Spring
* Prerequisite(s): AUT 1110
* Corequisite(s): AUT 2210

Includes field type service work in an instructional setting. Emphasizes vehicle service needs which are most frequently required in modern commercial service centers. Requires the diagnosis and repair of computerized vehicle systems. Includes standards for quality and quantity of work produced. Studies parts procurement, estimates, repair orders, and customer relations. Follows ASE P2 Performance Tasks for Brake, Anti-Lock and Traction Control Systems.

AUT 2220 Automatic Transmissions and Electronic Controls 2:2:0 Spring
* Prerequisite(s): AUT 1160 with a grade of C- or better
* Corequisite(s): AUT 203L Recommended


AUT 222L Automotive Service Practicum Transmission Controls Lab 1:0:3 Spring
* Prerequisite(s): AUT 1220
* Corequisite(s): AUT 2220

Includes field type service work in an instructional setting. Emphasizes vehicle service needs which are most frequently required in modern commercial service centers. Requires the diagnosis and repair of computerized vehicle systems. Includes standards for quality and quantity of work produced. Studies parts procurement, estimates, repair orders, and customer relations. Follows ASE P2 Performance Tasks for Transmission Controls.

AUT 2240 Heating Ventilation Air Conditioning and Refrigeration Theory 2:2:0 Spring
* Prerequisite(s): AUT 1160 with a grade of C- or better
* Corequisite(s): AUT 204L Recommended

Offers an in-depth study of automotive heating, ventilation, air conditioning (A/C), and refrigeration systems. Includes theory of operation, diagnosis and repair of HVACR systems. Environmental safety issues are stressed including laws and regulations, CFC recovery and recycling, ozone depletion, and new, environmentally friendly, systems. Computerized automatic temperature controlled systems are also covered. Stresses service, diagnosis and troubleshooting using electronic test equipment. Software fee of $10 applies. Lab access fee of $15 for computers applies.

AUT 224L Automotive HVAC Lab 1:0:3 Spring
* Corequisite(s): AUT 2240

This course provides a laboratory experience for Heating, Ventilation, and Air Conditioning lecture (AUT 2240). Studies and provides experience with R12 and 134a refrigerants, environmental issues, retrofit assemblies, evacuation and charging AC systems, and problem solving of AC systems. Course Lab fee of $17 for materials applies.

AUT 2250 Electronic Fuel Management Systems 2:2:0 Spring
* Prerequisite(s): AUT 1230, AUT 1160 with a grade of C- or better
* Corequisite(s): AUT 204L Recommended

Studies automotive fuel controls with particular emphasis placed on micro-processor control systems. Studies electronic and mechanical sensors of fuel and ignition systems. Also covers alternative fuel systems. Stresses service, diagnosis and troubleshooting using electronic test equipment.
**Course Descriptions**

**AUT 225L**  
Automotive Service Practicum Fuel Management Systems Lab  
1:0:3  
Spring  
* Prerequisite(s): AUT 1230  
* Corequisite(s): AUT 2250 or AUT 2350

Includes field type service work in an instructional setting. Emphasizes vehicle service needs which are most frequently required in modern commercial service centers. Requires the diagnosis and repair of computerized vehicle systems. Includes standards for quality and quantity of work produced. Studies parts procurement, estimates, repair orders, and customer relations. Follows ASE P2 Performance Tasks for Advanced Engine Performance and Fuel Management Systems.

**AUT 2350**  
Electronic Diesel Fuel Management Systems  
2:2:0  
On Sufficient Demand  
* Prerequisite(s): AUT 1160 with a grade of C- or better  
* Corequisite(s): AUT 204L Recommended


**AUT 281R**  
Cooperative Work Experience  
1 to 8:1 to 8:0  
Fall, Spring, Summer  
* Corequisite(s): AUT 285R

Designed for Automotive Technology majors. Provides paid, on-the-job work experience in the student’s major. Work experience, the correlated class, and enrollment are coordinated by the Cooperative Coordinator. Includes student, employer, and coordinator evaluations, on-site work visits, written assignments, and oral presentations. Provides experience in writing and completing individualized work objectives that improve present work performance. May be repeated as desired for interest. May be graded credit/no credit.

**AUT 285R**  
Cooperative Correlated Class  
1:1:0  
Fall, Spring, Summer  
* Corequisite(s): AUT 281R

Designed for Automotive Technology majors. Identifies on-the-job problems and provides remediation of those problems through in-class discussion and study. Includes the study of identifying and maximizing service opportunities. Students register for this class with approval of the Coop coordinator. Included lecture, guest speakers, video tapes, role playing, case analysis, oral presentations, and written assignments. Completers should be better able to perform in their field of work or study. May be repeated as desired for interest.

**AUT 299R**  
SkillsUSA  
1:1:0  
Fall, Spring

Designed for Automotive Technology majors. Supports and facilitates the goals and objectives of SkillsUSA. SkillsUSA is a pre-professional student organization that develops social awareness, civic, recreational, and social activities. Students may participate in local, state, and national contests. May be repeated as desired for interest.

**AUT 3230**  
High Performance Engines  
3:2:3  
Spring  
* Prerequisite(s): AUT 1130, AUT 1230, and University Advanced Standing

Offers a more in-depth study of the design factors that are unique to high output engines and how to modify engines to obtain the desired outcome. Studies the characteristics of various fuels used in high performance engines and their effects. Discusses the implications of service learning and ethics in high performance engine applications. Tool room fee of $19 for equipment applies. Course Lab fee of $17 for materials applies.

**AUT 3350**  
Alternative Fuel Systems  
3:3:0  
Fall  
* Prerequisite(s): University Advanced Standing, Junior Standing, and AUT 2250 or AUT 2260 recommended  
* Corequisite(s): AUT 2240 recommended

This course is open to all interested students and community members with departmental approval. Studies current and upcoming alternatives to gasoline as a fuel for the transportation industry that are being promoted, used, and developed by sources within and without the mainstream production system. Includes new alternatives such as CNG/Propane, hydrogen, electric, hybrid (both plug-in and non-plug-in), bio-fuels (both diesel and alcohol), diesel, and fuel cells. Discusses the implications of service learning and ethics in alternative fuel powered vehicles.

**Autism Studies (AUTS)**

**AUTS 250G**  
Understanding the Autism Spectrum  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): ENGL 1010 or ENGH 1005 (with C or higher) or instructor approval

Discusses autism beginning with the history of the diagnostic category and moving through contemporary issues of etiology, neurobiology, prevalence, assessment, treatment, education, policy, and community impact and inclusion. Emphasizes principles of interdisciplinary care, cultural competence, family centered approaches, and life course perspective.

**AUTS 3810**  
Autism Across the Lifespan I Infants and Children  
3:3:0  
* Prerequisite(s): University Advanced Standing

Examines key issues related to infants and children who are diagnosed with an autism spectrum disorder and the impact on family and communities. Emphasizes principles of interdisciplinary care, cultural competence, family centered approaches, and life course perspective. Requires a 25-hour service learning component.

**AUTS 382G**  
Autism across the Lifespan II Teens and Adults  
3:3:0  
Fall, Spring  
* Prerequisite(s): University Advanced Standing and AUTS 250G

Examines key issues related to teens and adults diagnosed with an Autism Spectrum Disorder and the impact on family and communities. Emphasizes principles of interdisciplinary care, cultural competence, family centered approaches, and life course perspective. Requires a 20-hour service learning component.

**AUTS 3850**  
Autism Assessment and Treatment  
3:3:0  
* Prerequisite(s): University Advanced Standing


**AUTS 4650**  
Autism and Applied Behavior Analysis  
3:3:0  
Fall  
* Prerequisite(s): AUTS 250G or EDSP 340G and University Advanced Standing

Describes the scientific principles of applied behavior analysis and how they relate to autism intervention. Discusses principles of single case designs, antecedents, reinforcement, consequences, and behavior modification.

**AUTS 481R**  
Field Placement  
1 to 8:1 to 8:0  
Fall  
* Prerequisite(s): AUTS 250G, AUTS 3810, AUTS 382G, AUTS 3850, and University Advanced Standing  
* Corequisite(s): AUTS 482R

Provides a generalist base for practice that involves an on-site, supervised field agency practicum. Makes connections between classroom learning and learning that takes place in the on-site field practicum. Supports supervised practice hours in a local agency setting. May be repeated for a maximum of 9 credits toward graduation. May be graded credit/no credit.

**AUTS 482R**  
Group Autism Seminar  
1:1:0  
Fall, Spring  
* Prerequisite(s): AUTS 250G and University Advanced Standing  
* Corequisite(s): AUTS 481R  
* Prerequisite(s) or Corequisite(s): AUTS 3810 or AUTS 3826 or AUTS 3850 or AUTS 4650

Provides a generalist base for autism practice in a weekly seminar. Integrates classroom learning with learning that takes place in the on-site field practicum. May be repeated for a maximum of 9 credits toward graduation. May be graded credit/no credit.
AVSC 1100
Survey of Aviation Science
3:3:0 Fall, Spring, Summer
Designed for all students interested in aviation careers. Includes a general knowledge of aviation, historical events, and aerospace studies' development opportunities. Covers aviation and aerospace terminology, how aircraft and spacecraft fly, research and development of future systems, government and industry roles in the growth of aviation. Provides entering students with a first year experience covering critical thinking, time and financial management and collaboration as well as aviation career prospects.

AVSC 1160
Mountain and Desert Flying
1:1:0 Fall
* Prerequisite(s): AVSC 1100
Introduces common flying conditions in mountain and desert areas. Emphasizes flight accident statistics and causes, effects of altitude on aircraft and pilot, mountain associated wake turbulence, techniques for low-altitude search and rescue or photography over mountainous areas, maneuvers, and abnormal or emergency procedures. Includes survival techniques for emergency landings in mountainous or desert terrain.

AVSC 1110
Ground I - Private
3:3:0 Fall, Spring, Summer
* Prerequisite(s): Departmental Approval
Introduces the entry-level student to the airplane as they prepare for flight training. Stresses airport systems, air traffic control procedures, aviation weather, air navigation, radio communication procedures, and Federal Aviation Regulations. Prepares students for the required FAA Private Pilot Airplane Knowledge Test. Course fee of $160 applies.

AVSC 1120
Basic Aircraft Systems
1:1:0 Not Offered
* Prerequisite(s): AVSC 1100
Designed to provide a more in-depth knowledge of the basic systems used in piston-powered aircraft. Includes an examination of propeller systems, constant speed propellers, retractable landing gear, electrical systems, cooling, flight control systems, and basic hydraulics. Will help students with oral examinations for the commercial and other flight certificates.

AVSC 1130
Glider Rating
1:1:1 Not Offered
* Prerequisite(s): AVSC 1100
Prepares student to transition from powered to unpowered glider flight in preparation for the FAA Private Pilot Glider Rating. Includes ground and flight lessons covering glider towing, launching, powered gliders, thermals, weather, landing, mountain waves, regulations, and emergency procedures. Teaches aerodynamic theory associated with more efficient flight and aircraft control.

AVSC 1150
Mountain and Desert Flying
1:1:0 Fall
* Prerequisite(s): AVSC 1100 and AVSC 1110
Introduces common flying conditions in mountain and desert areas. Emphasizes flight accident statistics and causes, effects of altitude on aircraft and pilot, mountain associated wake turbulence, techniques for low-altitude search and rescue or photography over mountainous areas, maneuvers, and abnormal or emergency procedures. Includes survival techniques for emergency landings in mountainous or desert terrain.

AVSC 1170
Seaplane Rating
1:1:1 Not Offered
* Prerequisite(s): AVSC 1100, AVSC 1110
Provides training to aid in the transition from single-engine land to single-engine water. Stresses the differences between operating on land and over bodies of water. Introduces regulations for seaplane pilots. Provides training in seaplane aircraft with the capability to land and takeoff from water. Prepares the student for the FAA seaplane rating flight test.

AVSC 1230
Flight II - Instrument I
2:1:3 Fall, Spring, Summer
* Prerequisite(s): AVSC 1100, AVSC 1110 and Department Approval
Prepares students to meet FAA Instrument Airplane and Commercial Airplane Pilot cross-country requirements. Introduces extended cross-country flights in both day and night environments with consideration for passenger safety. Includes operational flight performance using all available navigational weather and airplane performance data. Requires proof of completion of cross-country airplane pilot in command time. May be delivered online. Course fee of $160 applies.

AVSC 1240
Ground II - Instrument
3:2:2 Fall, Spring, Summer
* Prerequisite(s): AVSC 1100, AVSC 1110 and Department Approval
Examines FAA regulations, meteorology, navigation, radio procedures, instrument departures, en route and approach procedures, the instrument airway, and airspace systems as well as aircraft systems operation. Introduces glass cockpit instrumentation. Covers basic flight instrument construction and operation. Prepares pilots for the required FAA Instrument Pilot Airplane Knowledge Test. Course fee of $160 applies.

AVSC 1250
Flight II - Instrument II
3:2:2 Fall, Spring, Summer
* Prerequisite(s): AVSC 1230 and Department Approval
Stresses attitude instrument flying techniques. Covers instrument approach and approach procedures and instrument en route and cross-country navigation techniques in actual or simulated weather conditions with reference solely to the flight instruments. Prepares students for the required FAA Instrument Airplane Practical Test. Course fee of $18,550 for flight applies.

AVSC 1260
21st Century Avionics and Instrumentation
1:1:0 Fall, Spring, Summer
* Prerequisite(s): AVSC 1100
Provides pilots with the knowledge and practical experience using new generation glass cockpit electronic instrumentation and radio navigation devices. Includes glass cockpit system knowledge, functions, safety, flight planning, crew concepts, and the use of GPS technology. Requires flight, flight training device, or computer based instruction and experience to meet FAA standards for transition to this technology. May be delivered online.

AVSC 1310
AMT Procedures and Practices A
5:5:0 Not Offered
For Aviation Maintenance Technician Apprentice students. Introduces students to the aviation maintenance environment. Studies common procedures and practices in the industry, the use of tools and measurement devices, and Federal Aviation Regulation related to technician certification and inspections. Includes maintenance forms and record keeping, and weight and balance publications.

AVSC 1320
AMT General Knowledge A
5:5:0 Not Offered
For Aviation Maintenance Technician Apprentice students. Introduces general processes used by the Aviation maintenance Technician. Introduces aircraft electrical principles including the devices and procedures used in analyzing aircraft electrical systems. Covers materials and processes used in aircraft maintenance. Develops basic science application skills for aircraft maintenance.
AVSC 1330
AMT Airframe Phase I B
5:0:0 Not Offered
* Prerequisite(s): AVSC 1310, AVSC 1320, Must complete all (a) level AMT apprentice courses with grade of C- or better
For Aviation Maintenance Technician Apprentice Students. Introduces students to the basics of power plant installation, repair, and servicing. Focuses on the reciprocating engine used on certified aircraft. Covers radial engines, basic two- and four-stroke reciprocating engines, engine overhaul, starter and ignition systems, and troubleshooting procedures.

AVSC 2070
Communications for Aviation Professionals
3:3:0 Fall, Spring, Summer
* Prerequisite(s): ENGL 1010 or ENGH 1005
Teaches the skills necessary to effectively communicate with a variety of aviation stakeholders and professionals. Examines principles of written and verbal communication. Covers the planning, organizing and delivery of positive and negative messages. Teaches effective interpersonal and listening skills as well as techniques for adapting the message to the audience. Includes the effective development and delivery of computer-aided presentations. Explores the hazards and impacts of miscommunication on aviation safety.

AVSC 2090
Air Transport Economics
3:3:0 Fall, Spring, Summer
* Prerequisite(s): MAT 1030 or 1035, STAT 1040 or 1045, MATH 1050 or 1055, AVSC 2150
Teaches basic economic concepts as applicable to air transportation. Introduces foundational principles of free enterprise, supply and demand, private and social implications of profit maximization, market structure, resources markets, inflation, economic and industry cycles, inflation and economic growth. Introduces competitive advantage, air transport demand, modeling, pricing, revenue management and supply and route architecture.

AVSC 2110
Aviation Weather
3:3:0 Fall, Spring, Summer
Enables the aviation administrator to understand and appreciate the operational and strategic impacts of weather on the aviation industry. Teaches atmospheric composition and structure, climate and synoptic weather, aviation weather reports, forecasts and weather data sources. Requires students to apply these principles in a decision making capacity through weather tracking, planning and decision making activities.

AVSC 2120
Personal Finance for Aviation Professionals
3:3:0
* Prerequisite(s): AVSC 1050, AVSC 1100
Covers financial decision making with a view of financial choices/ alternatives and the impact or consequences of these choices during a student's collegiate and professional career. Includes real life scenarios designed around common challenges and issues. Requires students to create a proposed budget and reconcile expenditures monthly as the course progresses. Explores net worth statements, budgets, taxes, insurance alternatives, and life decisions applicable to finance. May be delivered online.

AVSC 2130
Aviation Safety
3:3:0
* Prerequisite(s): AVSC 1100
Presents an introduction to aviation safety. Covers agencies overseeing safety at the commercial and general aviation levels as well as the applicable regulations they develop and enforce. Explores general aviation and commercial aviation accident statistics and accident causation models. Discusses airline, airport, aircraft, and air traffic control safety issues. Explores the role of the aviation administrator as a safety advocate and responsible party in a variety of settings.

AVSC 2150
Air Transportation Management
3:3:0
* Prerequisite(s): AVSC 2150
Presents the management skills necessary to be a fixed based operator and entry-level manager for scheduled airlines in the national aviation system. Teaches management functions, marketing, financing, organization and administration, flight operations, maintenance, safety, and liability. Provides hands-on experience of management styles through evaluations and critiques of local airlines and airport facilities.

AVSC 2180
Managing Technology in Aviation
3:3:0
* Prerequisite(s): AVSC 2150
Introduces airline computer applications. Explores information management in areas of reservations, planning and scheduling, dispatch, maintenance control and crew management. Explores revenue, customer loyalty and cargo management. Discusses training programs, solution implementation and maintenance costs, as well as managing consulting services for aviation applications.

AVSC 2190
Introduction to Dispatch and Scheduling
3:3:0
* Prerequisite(s): AVSC 1010
Not Offered
Introduces airline and corporate flight department operations and flight dispatch procedures. Teaches effects of weather, air traffic control and maintenance on fleet logistics. Introduces responsibilities of dispatchers, routers, maintenance controllers, and general system operations. Covers pertinent crew and operational federal aviation regulations. Examines tools and practices of airline system control and corporate flight departments. Explores responsibilities and authority of dispatchers and schedulers.

AVSC 2200
Aviation Marketing
3:3:0
* Prerequisite(s): ENGL 1010 or ENGH 1005
Teaches principles of aviation marketing and promotional concepts. Covers planning and coordination, advertising and media as well as sales presentations. Explores aviation tradeshows, trade events, and networking as industry marketing tools. Teachers marketing research, financial planning, and transportation methods.

AVSC 2210
AMT Airframe Phase II C
5:0:0 Not Offered
* Prerequisite(s): AVSC 1330, AVSC 1340, Must complete all (b) level AMT apprentice courses with grade of C- or better
For Aviation Maintenance Technician Apprentice Students. Prepares students for intermediate level understanding of major airframe components and accompanying devices. Includes lessons on structure alignments, aircraft rigging, flight control balance, communications and navigation equipment, brake systems, anti-skid systems, and landing gear position indication.

AVSC 2220
AMT Airframe Phase III D
5:0:0 Not Offered
* Prerequisite(s): AVSC 2210, AVSC 2230, Must complete all (c) level AMT apprentice courses with grade of C- or better
For Aviation Maintenance Technician Apprentice Students. Offers in-depth study of major airframe components and accompanying devices. Prepares students for intermediate level understanding of major airframe components and accompanying devices. Includes lessons on structure alignments, aircraft rigging, flight control balance, communications and navigation equipment, brake systems, anti-skid systems, and landing gear position indication.

AVSC 2230
AMT Powerplant Phase II C
5:0:0 Not Offered
* Prerequisite(s): AVSC 1330, AVSC 1340, Must complete all (b) level AMT apprentice courses with grade of C- or better
For Aviation Maintenance Technician Apprentice Students. Prepares students for intermediate level understanding of major airframe components and accompanying devices. Prepares students for intermediate level understanding of major airframe components and accompanying devices. Includes lessons on structure alignments, aircraft rigging, flight control balance, communications and navigation equipment, brake systems, anti-skid systems, and landing gear position indication.

AVSC 2240
AMT Powerplant Phase III D
5:0:0 Not Offered
* Prerequisite(s): AVSC 2210, AVSC 2230, Must complete all (c) level AMT apprentice courses with grade of C- or better
For Aviation Maintenance Technician Apprentice Students. Prepares students for intermediate level understanding of major airframe components and accompanying devices. Prepares students for intermediate level understanding of major airframe components and accompanying devices. Includes lessons on structure alignments, aircraft rigging, flight control balance, communications and navigation equipment, brake systems, anti-skid systems, and landing gear position indication.
Course Descriptions

AVSC 2250
Aviation Business Statistics
3:3:0 Fall, Spring, Summer
* Prerequisite(s): MAT 1030 or 1035, MATH 1050 or 1055, or STAT 1040 or 1045
Presents an application of statistics in business and economics within the context of an aviation-related business and operational setting involving the manufacturing, sustainment, safety, marketing, sales, and aftermarket services of aerospace products. Topics include methods of collecting, analyzing, and presenting data, descriptive statistics, populations and samples, measures of central tendency and dispersion, elementary probability, binomial and normal distributions and their interrelationships, frequency distributions, averages, index numbers, probability, sampling, estimation, analysis of variance, time series, regression and correlation, and chi-square.

AVSC 2300
Ground IV - Commercial
3:3:0 Fall, Spring, Summer
* Prerequisite(s): AVSC 1250 and Department Approval
Covers privileges, responsibilities and the operational environment of a commercial pilot. Explores application of aeronautical knowledge and skills in simulated commercial operation situations. Develops judgment and decision-making skills. Studies aerodynamics, performance and limitations, weight and balance, aircraft systems, airworthiness, aeromedical factors, night and high altitude operations, weather hazards and reports, airport operations, flight planning, and decision making. Prepares students for the required FAA Commercial Pilot Airplane Knowledge Test. Course fee of $160 applies.

AVSC 2310
Flight IV - Commercial
3:2:3 Fall, Spring, Summer
* Prerequisite(s): AVSC 1250 and Department Approval
Includes maneuvers such as steep power turns, steep spirals, slow flight, lazy eights, pylons eights, and chandeliers. Includes commercial cross-country, instrument flying skills, and emergency procedures. Prepares students for the required FAA Commercial Pilot Airplane Practical Test. Graded credit/no-credit. Course fee of $18,050 for flight applies.

AVSC 235R
Unusual Attitude Safety Training
1:1:1 On Sufficient Demand
* Prerequisite(s): AVSC 1250
Teaches pilots how to assess various flight situations and take the appropriate action to avoid or recover from any in-flight unusual attitude scenario, includes training not covered by commercial flight courses such as situations involving wake turbulence, wind shear, mountain waves and other wind flow patterns, as well as instrument or control system failure and pilot error may produce unusual attitudes beyond those experience in normal flight. Presented in three phases: 1) Private Pilot Student, 2) Instrument Pilot Student, 3) Commercial Pilot Student and for the Certified Flight Instructor Student. Course enhances overall pilot skill and increases confidence in all flight conditions. May be repeated for a maximum of 2 credits toward graduation.

AVSC 2400
Ground Certified Flight Instructor
4:4:0 Fall, Spring
* Prerequisite(s): Department Approval
Provides the foundational knowledge and teaching skills necessary to become an authorized FAA airplane flight instructor. Teaches certification and training requirements for which the student will have instructional privileges. Develops organization and presentation skills required for instructional activity including the application of human behavior and learning principles during instructional activity. Emphasizes training of aviation students to specific standards of competence regardless of the specific instructional privileges carried by the flight instructor. Focuses on the teaching of critical emphasis areas as identified by the FAA. Prepares students for the required FAA Flight Instructor Airplane Knowledge Test and Fundamentals of Instruction Knowledge Test. May be delivered online.

AVSC 2410
Flight Certified Flight Instructor
1:1:1 Fall, Spring, Summer
* Prerequisite(s): Department Approval
Designed for advanced pilots preparing for the Flight Instructor rating. Trains students to discuss and teach while precisely performing maneuvers and maintaining proper operational control. Emphasizes the identification of common student errors and proper correction. Prepares students for the required FAA Flight Instructor Airplane Practical Test. May be delivered online.

AVSC 2420
Ground CFI Instrument
1:1:0 Fall, Spring
* Prerequisite(s): AVSC 2300, AVSC 2310
Corequisite(s): AVSC 2430
Stresses in-depth study of gyroscopic and pressure instruments, attitude instrument flying techniques, IFR departure, en route, arrival and approach procedures, and the teaching of this to other pilots. Discusses Federal Aviation Regulations that apply to instrument flight instruction, flight logbook endorsements and entries, and other directives and publications that apply to airplane instrument flight. Studies the correct procedures for teaching and the analyzing of student errors while performing the required instrument flight maneuvers. Prepares students for the required FAA Flight Instructor Instrument Airplane Knowledge Test. May be delivered online.

AVSC 2430
Flight CFI Instrument
1:1:1 Fall, Spring, Summer
* Prerequisite(s): AVSC 2300, AVSC 2310
Corequisite(s): AVSC 2420
Designed for instructor pilots seeking the CFI Airplane Instrument rating. Covers all required instrument flying maneuvers from the right seat of the instrument training airplane such as instrument departures, en route navigation, and instrument approach to landings. Prepares students for the required FAA Flight Instructor Instrument Airplane Practical Test. May be delivered online.

AVSC 2440
Ground III - Multi Engine
1:1:0 Fall, Spring, Summer
* Prerequisite(s): AVSC 1110 and Department Approval

AVSC 2450
Flight III - Multi Engine
1:1:1 Fall, Spring, Summer
* Prerequisite(s): AVSC 1110 and Department Approval
Prepares students for flight in complex multi-engine airplanes. Stresses normal and emergency flight procedures and skills demonstrated and practiced for all phases of flight. Includes single-engine operation of a multi-engine airplane in varying flight environments and situations. Discusses complex systems operation as well as instrument flight procedures. Prepares the student for the required FAA Multi-engine Airplane Practical Test. Course fee of $11,300 for flight applies.

AVSC 2500
Ground Multi Engine Instructor
1:1:0 On Sufficient Demand
* Prerequisite(s): AVSC 2300, AVSC 2310
Corequisite(s): AVSC 2510
Presents specific teaching techniques and skills necessary to certify as a flight instructor with a multi-engine airplane rating. Includes a review of the multi-engine airplane pilot certification requirements. Stress the unique instructional and safety responsibilities with students in multi-engine airplanes. Prepares students for the oral exam portion of the FAA Multi-Engine Airplane Instructor Practical Test. May be delivered online.

AVSC 2510
Flight Multi Engine Instructor
1:1:0 Fall, Spring, Summer
* Prerequisite(s): AVSC 2300, AVSC 2310
Corequisite(s): AVSC 2500
Prepares students for various maneuvers and operations necessary to instruct pilots for the FAA Multi-engine Airplane Practical Test. Teaches normal and emergency flight operations and procedures in all the various flight environments and regimes. Teaches the knowledge and skill necessary to operate a multi-engine airplane safely, while instructing multi-engine airplane pilots. Prepares students for the required FAA Multi-engine Airplane Instructor Practical Test. May be delivered online.

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AVSC 2710
Aviation Marketing
3:3:0 Fall, Spring, Summer
Prerequisite(s): AVSC 2150
Teaches principles of aviation marketing, market research and promotional concepts. Covers planning and coordination, advertising, and media as well as sales presentations. Explores aviation trade shows, trade events, and networking as industry marketing tools. Covers the history of customer service in the aviation industry. Introduces customer service principles applicable to both general and commercial aviation. Analyzes customer rights and carrier responsibilities and explores diffusion of confrontational customers. Analyzes airline and corporate cultures and resulting effects on employees and customers.

AVSC 2750
Unmanned Aircraft Systems
3:3:0 Spring
Prerequisite(s): AVSC 2150
Introduces unmanned aircraft systems and applications. Examines the history and development of unmanned aircraft, their systems, technology, training methods, and implementation. Examines the current and future roles these aircraft will take in society and the implications surrounding their increased usage. Explores security, privacy and safety as they relate to the utilization of unmanned aircraft systems in military, law enforcement and civilian applications. Examines challenges and opportunities related to civilian utilization. May be delivered online.

AVSC 276R
Current Topics in Aviation
1 to 3:1 to 3:0 On Sufficient Demand
Selected topics in Aviation Science that will vary from semester to semester. May be repeated with different topic areas for a maximum of six credit hours toward graduation.

AVSC 281R
Cooperative Work Experience
1 to 8:1 to 8:0 Not Offered
Designed for Aviation majors. A current job in an aviation related field required prior to registering for this course. Course content is individualized, with students setting objectives in consultation with their faculty coordinator and their on-the-job supervisor. Credit is determined by the number of hours a student works during the semester. (One credit for each five hours of work per week.) May be repeated for a maximum of 8 credits toward graduation. Graded credit/no credit.

AVSC 285R
Cooperative Correlated Class
1:1:0 Not Offered
Corequisite(s): AVSC 281R
Designed to enable students with career aspirations in aviation related fields to begin career planning. Enhances student's knowledge, personal development, professional development and professional preparation by integrating academic study with practical experience and resume preparation. May be repeated for a maximum of 2 credits toward graduation.

AVSC 2860
SkillsUSA
1:1:0 Not Offered
SkillsUSA includes leadership training, parliamentary procedure, job interview skills, prepared speaking, extemporaneous speaking, and organizational skills. Upon completion, the student should understand the SkillsUSA organization and how it helps to build leadership skills.

AVSC 3010
Flight Environment
3:3:0 Fall
Prerequisite(s): AVSC 1240 and University Advanced Standing
Teaches interpretation, selection, and compilation of appropriate weather data. Examines METAR, TAF, PIREPS, AIRMET's, SIGMET's and other sources of applicable weather information. Uses sample reports, data, and charts. Includes class and group discussion, lecture, practical example, and case studies. May be delivered online.

AVSC 3020
Aviation Insurance and Risk Management
3:3:0 Fall, Spring, Summer
Prerequisite(s): AVSC 2310 and University Advanced Standing
Explores the complexity of aviation risk management from flight operations and aircraft maintenance perspectives. Examines industry insurance practices and standards, including the development of risk management procedures to meet both government and insurance requirements. Analyzes basic underwriting procedures and requirements. Presents basic principles of hazardous materials handling in aviation.

AVSC 3030
Air Traffic Control I
3:3:0 Fall, Spring, Summer
Prerequisite(s): AVSC 1100 and University Advanced Standing
Teaches tower, approach, and center techniques and terminology. Covers radar and non-radar control environments and the pilot's responsibility in each. Explains effective use of the Air Traffic Control System.

AVSC 3040
Air Traffic Control II
3:3:0 Spring
Prerequisite(s): AVSC 3030 and University Advanced Standing
Covers advanced air traffic management concepts, weather problems, communications procedures, and technical control skills. Provides simulated air traffic control situations and crisis management skills. Discusses terminal air route procedures and Federal Aviation Regulations. May be delivered online.

AVSC 3060
Airline Management
3:3:0 Fall, Spring, Summer
Prerequisite(s): AVSC 2150 and University Advanced Standing
Prepares student for management level duties at air carriers. Examines airline operational considerations, regulation, financing, accounting methods, marketing, customer service, profitability, and labor relations. Discusses how some airlines succeed and others fail.

AVSC 3070
Aviation Cargo Operations
3:3:0 On Sufficient Demand
Prerequisite(s): AVSC 2150 and University Advanced Standing
Studies air cargo history and industry development. Teaches air cargo scheduling and supply chain administration. Explores aircraft options and conversions and airport and logistical considerations. Discusses shipping and air cargo regulations including hazardous material (hazmat) and security issues. Explores domestic and international air cargo considerations.

AVSC 3090
Airline and Dispatch Operations
3:3:0 Fall, Spring, Summer
Prerequisite(s): AVSC 2150, AVSC 2110 and University Advanced Standing
Introduces airline and corporate flight department operations and flight dispatch procedures. Teaches effects of weather, air traffic control and maintenance on fleet logistics. Introduces responsibilities of dispatchers, routers, maintenance controllers, and general system operations. Covers pertinent crew and operational federal aviation regulations. Examines tools and practices of airline system control and corporate flight departments. Explores responsibilities and authority of dispatchers and schedulers.

AVSC 3100
Corporate Aviation Management
3:3:0 Fall, Spring, Summer
Prerequisite(s): AVSC 2150 and University Advanced Standing
Introduces basic principles of corporate flight department management. Discusses regulatory requirements in corporate aviation, acquisition procedures, insurance requirements, and pilot certification programs. Explores fractional ownership programs and management.

AVSC 3110
Aviation Security
3:3:0 Spring
Prerequisite(s): AVSC 2150, and University Advanced Standing
Presents advanced security issues related to aviation including passenger screening, profiling, hijacking, bomb threats and passenger disruptions. Covers historical incidents and studies a variety of responses to threats from various countries. Discusses the role of the Department of Homeland Security and the Transportation Security Administration. Covers the role of pilots and other flight crew in security, including the Federal Flight Deck Officers Program. Includes a discussion of regulatory issues and laws established since the 9/11 attacks. May be delivered online.

AVSC 3120
Airport Management
3:3:0 Fall, Spring, Summer
Prerequisite(s): AVSC 2150 and University Advanced Standing
Explores airport management at both small and large airports. Emphasizes basic requirements and attributes of successful airport managers. Course includes discussion of local and state airport finance and regulatory issues. Discusses pertinent Federal Aviation Regulations and security issues.
### AVSC 3140 Fixed Base Operations Management
3:3:0  On Sufficient Demand
* Prerequisite(s): AVSC 2150 and University Advanced Standing
Prepares students for employment and management at a fixed base operation and related general aviation management. Covers the organization, profit, maintenance, and safety systems concerning fixed base operators. Presents pertinent Federal Aviation Regulations, facility management, and advertising issues.

### AVSC 3150 Principles of Aviation Management
3:3:0  Fall, Spring, Summer
* Prerequisite(s): AVSC 2070, AVSC 2150 and University Advanced Standing
Teaches principles of aviation management including the management process, decision-making, and organizational structure. Covers leadership skills including communication, fostering team work, conflict resolution, and human resource management. Analyzes the importance of ethics and social responsibility as well as developing and crafting executive strategies. Studies organizational culture and effective management of innovation and change. May be delivered online.

### AVSC 3200 Flight Physiology
3:3:0  Fall
* Prerequisite(s): AVSC 1240 and University Advanced Standing
For pilots with a career goal in commercial Aviation. Teaches physiological and psychological factors that affect pilot performance. Studies issues such as human error, fatigue, illness, attitudes, training devices, controls, cabin space, and human payload. Includes lecture, demonstration, experiments, group projects, class discussion, and possible guest lecturers.

### AVSC 3210 Aircraft Accident and Emergency Management
3:3:0  On Sufficient Demand
* Prerequisite(s): AVSC 2130 and University Advanced Standing
Teaches how to develop a pre-accident plan addressing the issues of chain and command responsibility, initial response to safety and security issues, and the coordination of human and material resources for public safety. Emphasizes post crash/aircraft incident preservation of forensic evidence. May be delivered online.

### AVSC 3220 Aircraft Accident Investigation
3:3:0  On Sufficient Demand
* Prerequisite(s): AVSC 2130 and University Advanced Standing
Explores the fundamental requirements of aircraft mishap and accident investigation. Covers the initial gathering and preservation of evidence at the crash site, including photographic and videographic documentation, assessing environmental factors, human factor considerations, aircraft maintenance status, and air traffic control considerations.

### AVSC 3230 Accident Witness Interviewing
3:3:0  On Sufficient Demand
* Prerequisite(s): AVSC 3210 or AVSC 3220) and University Advanced Standing
Teaches the currently recommended techniques for conducting an accident witness interview and common mistakes. Presents methods of evaluating and analysis of interview information. Case studies and role playing will be used in classroom exercises.

### AVSC 3240 Aviation Accident Reporting
3:3:0  On Sufficient Demand
* Prerequisite(s): AVSC 3210 or AVSC 3220), (ENGL 1010 or ENGH 1005), and University Advanced Standing
Teaches the student a working knowledge of preparing a complete aircraft mishap/accident report that includes the factual information, analysis, and conclusions, including probable causes, and aviation safety recommendations. Involves turning accident investigation data into an accident report.

### AVSC 3300 Jet Transport Systems
3:3:0  Spring
* Prerequisite(s): AVSC 1240 and University Advanced Standing
Provides training on turbine driven engines, thrust vectoring, pneumatics, electrical, hydraulic, and auxiliary systems. Includes subjects such as pressurization, de-ice and anti-ice, environmental, and warning systems. Utilizes schematic drawings, computer based trainers, and various jet operating manuals. Includes lecture, class discussion, demonstrations, group practice, and possible guest lecturers.

### AVSC 3310 Aviation Logistics Management
3:3:0  On Sufficient Demand
* Prerequisite(s): AVSC 2150, AVSC 3150, and University Advanced Standing
Examines functional areas of supply, maintenance, transportation and services at operational, strategic and tactical levels. Covers facilities, manpower, labor relations, financial and system management, contract administration, analytical techniques and decision making. Uses a variety of case studies and examples of various transportation companies, airlines, and support groups. May be delivered online.

### AVSC 3320 Aviation Managerial Accounting
3:3:0  Fall, Spring, Summer
* Prerequisite(s): AVSC 2150 and University Advanced Standing
Provides aviation administration students with knowledge of financial, managerial, and basic cost accounting concepts and applications. Introduces basic accounting methods, accounting information systems and the utilization of accounting information in the decision making process. Uses aviation industry case studies and examples. May be delivered online.

### AVSC 3350 Aviation Labor and Human Resource
3:3:0  On Sufficient Demand
* Prerequisite(s): AVSC 2150, AVSC 3150, and University Advanced Standing
Focuses on effective management of human resources in the unique environment of the aviation industry. Teaches planning, recruitment, selection, training, development, labor relations, employees benefits and compensation, employee legal issues, termination and unemployment, and applicable state and federal regulations. May be delivered online.

### AVSC 3400 International Flight Operations
3:3:0  Fall, Spring, Summer
* Prerequisite(s): AVSC 1240 and University Advanced Standing
Provides an overview of international flight operations including advanced air navigation systems. Explores navigation equipment and aids utilized in international flight operations. Teaches the operation of the "Glass Cockpit" flight data center. Utilizes simulation for operation of a glass cockpit equipped aircraft.

### AVSC 3530 Flight Aerodynamics
3:3:0  Fall, Spring, Summer
* Prerequisite(s): AVSC 1240 and University Advanced Standing
Teaches the aerodynamics involved in commercial aircraft. Includes aircraft turning and accelerated climb performance, take off velocity, load factors, hypersonic flight, and laminar flow airfoils. Includes demonstration, examples, experiments, and class discussion. May be delivered online.

### AVSC 3600 Multi-piloted Operations
3:3:0  Fall, Spring, Summer
* Prerequisite(s): AVSC 1100, AVSC 2070 and University Advanced Standing
Explores concepts of Crew Resource Management (CRM), Threat and Error Management (TEM), and Advanced Qualification Program (AQP) concepts. Covers crew coordination, communication, flight discipline, pilot flying and pilot monitoring protocols in multi-piloted environments.

### AVSC 3740 Advanced Methods in Aviation Investigation
3:3:0  On Sufficient Demand
* Prerequisite(s): AVSC 3220 and University Advanced Standing
Teaches current scientific techniques for the analysis of aircraft materials, components, performance and design. Considers aircraft crashworthiness. Discusses the process of establishing facts from analysis and of the findings of an aircraft investigation and probable vs. proximate cause.
Course Descriptions

**AVSC 4020**  
Applied Aviation Finance  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): AVSC 3320 and University Advanced Standing  

Examines financial management in the aviation corporate and public sectors and the role of financial markets and institutions. Introduces finance terminology and techniques. Discusses time value of money, fundamentals of security valuation, capital asset pricing model and capital budgeting. Introduces weighted average cost of capital and contrasts debt policy and governance in the public and private aviation sectors.

**AVSC 410G**  
Flight Airline Transport Pilot  
1:0:3  
On Sufficient Demand  
* Prerequisite(s): AVSC 2300, AVSC 2310, and University Advanced Standing  

Focuses on the areas necessary to pass an Airline Transport Pilot Aircraft Practical Test. Covers pre-flight, takeoff and departure, in flight maneuvers, instrument procedures, approaches and landings, normal and abnormal procedures, emergency procedures and postflight procedures. Prepares students for the required FAA Airline Transport Pilot Aircraft Practical Test.

**AVSC 4160**  
Aviation Law  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): AVSC 2150, PHIL 2050, and University Advanced Standing  

Introduces the student to the United States Constitution plus derivation and application of international, federal, state and local laws as applied to aviation. Covers administrative, civil and criminal law including torts, principles of liability, contracts, sales, commercial transactions, the environment, labor law and Federal Aviation regulations.

**AVSC 4210**  
Flight: Turbine Transition  
1:0:3  
On Sufficient Demand  
* Prerequisite(s): AVSC 2300, AVSC 2310, and University Advanced Standing  

Covers the required training experience in preparation for an FAA airplane type rating practical exam. Includes start up, taxi, take-off, en-route, approach, landing, shutdown, and emergency procedures. Requires individualized instruction in a cockpit procedures trainer, simulator or aircraft. Proof of earned airplane type rating is required.

**AVSC 4300**  
Ground Airline Transport Pilot Aircraft Dispatcher  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): AVSC 2110 and University Advanced Standing  

Discusses aircraft aerodynamics, airspace and airports, air traffic control, aviation weather, and aero-medical factors and applicable NTSB and FAA regulations. Analyzes the aspects of decision making and professionalism in aviation. Prepares students for the required FAA Airline Transport Pilot Airplane 121 (ATP); FAA Airline Transport Pilot Airplane (135); or Aircraft Dispatcher (ADX) Knowledge Tests.

**AVSC 4310**  
Aerospace Aftermarket Support Services  
3:3:0  
Spring, Summer  
* Prerequisite(s): University Advanced Standing  

Explores organizational structures, geographical location selection, staffing, service delivery, and infrastructure requirements of an effective aftermarket product support program associated with aerospace vehicles. Explores existing support concepts to enable the student to design and plan an integrated and deployable product support organization. Emphasizes key elements of customer relationship management. Includes studies for both Original Equipment Manufacturer (OEM) and third-party service providers.

**AVSC 4450**  
Aviation Professional Seminars  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): Senior Standing and University Advanced Standing  

For upper division Aviation Science majors. Designed for aviation managers and pilots to develop a global perspective and understanding of key intercultural issues facing aviation. Studies the role of multi-culturalism and globalization, especially where these issues impact safety and the business environment. Includes a study of aviation regulation and scenario-based problem solving skills.

**AVSC 4700**  
Aviation Career Preparation  
1:1:0  
Fall, Spring, Summer  
* Prerequisite(s): AVSC 3300, 3600 and University Advanced Standing  

For upper division Aviation majors. A current job in an aviation related field required prior to registering for this course. Course content is individualized, with students setting objectives in consultation with their faculty coordinator and their on-the-job supervisor. Credit is determined by the number of hours a student works during the semester. (One credit for each five hours of work per week.) May be repeated for a maximum of 6 credits toward graduation. May be graded credit/no credit.

**AVSC 475R**  
Current Topics in Aviation  
1 to 3:0  
Fall, Spring, Summer  
* Prerequisite(s): AVSC 1010 and University Advanced Standing  

Presents selected topics in Aviation Sciences and will vary each semester. Requires a special project related to the area of study. May be repeated with different topic areas for a maximum of 6 credits toward graduation.

**AVSC 4800**  
Professional Pilot Capstone  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): AVSC 3300, 3600 and University Advanced Standing  

Teaches systems, operations and performance limitations of the CRJ. Emphasizes operating practices, along with systems indoctrination and procedures training. Includes systems and operations common to most turbine and transport category aircraft. Provides insight into the rigors of studying for ground school systems class. Utilizes lecture, demonstration, and cockpit procedure trainers. Student who complete the course should be prepared to pass the applicable written exam. May be delivered online. Software fee of $100 applies.

**AVSC 4805**  
Canadian Regional Jet Orientation  
1:0:3  
* Prerequisite(s) or Corequisite(s): AVSC 4800  

Introduces Canadian Regional Jet aircraft (CRJ) procedures through hands on application in the CRJ flight simulation training device. Provides simulated experience as a pilot in normal, abnormal, and emergency operations. Includes scenario based training in the CRJ200 flight management system (FMS) and other essential systems. Emphasizes crew resource management (CRM) skills in transport category aircraft.

**AVSC 481R**  
Cooperative Work Experience  
1 to 8:1 to 8:0  
Fall, Spring, Summer  
* Corequisite(s): AVSC 485R  

For upper division Aviation majors. A current job in an aviation related field required prior to registering for this course. Course content is individualized, with students setting objectives in consultation with their faculty coordinator and their on-the-job supervisor. Credit is determined by the number of hours a student works during the semester. (One credit for each five hours of work per week.) May be repeated for a maximum of 8 credits toward graduation. May be graded credit/no credit.

**AVSC 485R**  
Cooperative Related Class  
1:1:0  
Not Offered  
* Prerequisite(s): Current job in an aviation related field and University Advanced Standing  
* Corequisite(s): AVSC 481R  

For upper division Aviation Science majors. Designed to enable students with career aspirations in aviation related fields to begin career planning. Enhances a student's knowledge, personal development, professional development and professional preparation by integrating academic study with practical experience and resume preparation. May be repeated for a maximum of 2 credits toward graduation.
AVSC 4900
Strategic Aviation Management Capstone 3:3:0 Fall, Spring, Summer
* Prerequisite(s): AVSC 3150, Senior standing, and University Advanced Standing
* Prerequisite(s) or Corequisite(s): AVSC 4020

Provides aviation administration students with the opportunity to practice and apply their cumulative knowledge acquired over the entire course of study. Teaches the components of formulating a strategic plan, implementing and controlling its execution, and evaluating its success. Applies principles of accounting, finance, economics, labor, logistics, operations, research and strategy development through simulation and aviation case studies.

AVSC 491R
Undergraduate Research Project 3 to 6:2:3 to 12 Not Offered
* Prerequisite(s): AVSC 3200, AVSC 3600, ENGL 2010, Matriculation into Bachelor's Degree, and University Advanced Standing

Combines and integrates concepts, methodologies, and skills developed in previous AVSC course work through the completion of a comprehensive project. Students will develop their own project and portfolio in consultation with a faculty advisor. A list of detailed guidelines for the project is available from the Aviation Science Department. May be repeated three times for a maximum of 6 credits.

AVSC 4950
Aerospace Technology Management Capstone Project 3:3:0 Fall, Spring, Summer
* Prerequisite(s): AVSC 4500, AVSC 4550, and University Advanced Standing.

Assesses significant evidence of learning within the discipline studied through a culminating project. Documents evidence of achievement, experience and competencies for current and prospective employers to aid in job placement or promotion.

Behavioral Science
(BESC)

BESC 1000
Behavioral Science Forum 2:2:0 On Sufficient Demand

For students interested in exploring a Behavioral Science major. Offers an overview of curriculum, major requirements, faculty and their specialties, study and writing helps and guidelines, campus resources and career possibilities. Utilizes lectures, guest speakers, field trips, and application-oriented activities.

BESC 107G
Multicultural Societies 3:3:0 Fall

Examines societies and cultures within the kinships, beliefs, values and political backgrounds related to differing ethnic groups. Provides a forum for constructive interaction among people of differing economic, social, racial, ethnic and religious backgrounds.

BESC 295R
Beginning Research Experience 1 to 3:1 to 3:0 On Sufficient Demand
* Prerequisite(s): Instructor approval; BESC department major

Provides a mentored experience to assist on a faculty member's research project. Begin to explore academic literature to investigate topics of interest. Requires individual initiative and responsibility. Includes limited formal instruction and faculty supervision. Includes literature searches, materials creation, data collection, or other options as approved by the instructor. May be repeated for a maximum of six credits toward graduation. May be graded Credit/No Credit.

BESC 3010
Statistics for the Behavioral Sciences 4:4:0 Fall, Spring, Summer
* Prerequisite(s): MAT 1000 or higher and University Advanced Standing

Introduces use of statistics for research purposes. Teaches descriptive and inferential statistics. Includes central tendency, variability, correlation and regression, probability (particularly probability distributions), and various inferential techniques such as t-test for independent and dependent samples, one-way and two-way analysis of variance, post-hoc tests, and non-parametric statistics. May be delivered hybrid and/or online.

BESC 3020
Research Methods for the Behavioral Sciences 3:3:0 Fall, Spring, Summer
* Prerequisite(s): BESC 3010 or declared major in Family Science and (admission into BSW program or declared major in Behavioral Science, Family Science, or Psychology) and (ANTH 101G, FAMS 101G, PSY 1010, SOC 1010, or SW 1010) and (ENG 2010 with a grade of C+ or higher) and University Advanced Standing

Surveys the most common research designs in the social sciences. Includes true experiments, quasi-experiments, correlational designs, survey research, single case, and the philosophy of qualitative methods. Includes the design of a study, original data collection, data analysis, presentation of results. May be delivered hybrid and/or online.

BESC 380G
Interviewing Skills 3:0 Fall, Spring
* Prerequisite(s): ENGL 2010 with C+ or better and University Advanced Standing; PSY 3400 with a C-grade or higher recommended

Develops knowledge of and skill in clinical interviewing across cultures. Familiarizes students with a broad range of clinical interviewing skills. Uses class discussions, video clips of master clinicians, instructor modeling, in-class practice, videotaped role plays, and class and instructor evaluations of role plays.

BESC 3820
Women/War/Peacebuilding 3:3:0 On Sufficient Demand
* Prerequisite(s): (FAMS 3410 or COMM 3410 or COMM 3510 or SOC 1010 or ANTH 101G) and (ENG 2010 with a C+ grade or higher) and University Advanced Standing

Examines the gendered foundations and dynamics of war (and ethno-political violence) and peace. Explores consequences to women and their roles in militarism and transformational justice and peacebuilding. Emphasizes an analysis of gender within the framework of the behavioral sciences.

BESC 4030
Introduction to Practice Evaluation and Grant Writing 3:3:0 On Sufficient Demand
* Prerequisite(s): (ENG 2010 with C+ grade or higher), BESC 3010, BESC 3020, and University Advanced Standing

Provides practical guidance for conducting an evaluation study from its inception, through the planning stage, to research design, data collection, data analysis and the reporting, dissemination, and application of conclusions.

BESC 4040
Applied Behavioral Science Research 3:3:0 Fall, Spring, Summer
* Prerequisite(s): (ENG 2010 with a C+ grade), BESC 3010, BESC 3020, and University Advanced Standing

Introduces psychological theory, methods, and knowledge to actively analyze and engage problems facing a variety of clients. Discusses a variety of organizations including businesses, government, religion, social science, health care, criminal justice, and others. Uses psychological tools to identify, investigate, and actively seek viable solutions to issues that can be applied by organizations to achieve greater success. Requires students to develop, carry out, and professionally present an original research project. May be delivered hybrid. Lab access fee of $13 applies.
### Biology (BIOL)

#### BESC 4510
**Academic and Career Advising**

3:3:0  
* Prerequisite(s): (ENGL 2010 with a C+ or higher) and University Advanced Standing  

Provides students with an understanding of the field of academic/career advising and what it means to be a scholar and practitioner within the field. Engages in scholarly study of academic advising literature, discussion of advising theory and practice, observation of academic advising sessions, and interviews with advisors. Provides knowledge of advising theory and practice, an understanding of student development theory, and an increase in the knowledge and skills needed to advise students effectively.

#### BESC 481R
**Internship Seminar**

1 to 8.1 to 8.0  
* Prerequisite(s): BESC 3010, BESC 3020, (ENGL 2010 with a C+ grade or higher) and University Advanced Standing  
* Corequisite(s): BESC 485R  

Allows Behavioral Science students with non-clinical orientation to receive behavioral science credits for interning in a governmental, corporate, or private agency apart from their regular employment. Provides practical and research experience over the course of the 15 week semester. Supervised by agency representative. Internships approved by faculty and written contracts must be signed. May be repeated for a maximum of 8 credits toward graduation. May be graded credit/no credit.

#### BESC 485R
**Internship Seminar**

1:1:0  
* Prerequisite(s): (ENGL 2010 with a C+ grade or higher), BESC 3010, BESC 3020, and University Advanced Standing  
* Corequisite(s): BESC 481R  

Provides integration of classroom learning with learning that takes place in an on-site internship. To be taken concurrently with BESC 481R, Senior Internship. Repeatable for a maximum of 8 credits toward graduation.

#### BESC 495R
**Advanced Research Experience**

1 to 3:1 to 3:0  
* Prerequisite(s): (ANTH 101G or FAMS 1010 or PSY 1010 or SOC 1010 or SW 1010) with a C grade or higher; ENGL 2010 with C+ grade or higher; Instructor approval; BESC department major; University Advanced Standing  

Provides a mentored experience to significantly assist on a faculty member's research project or carry out an independent research project of the student's design under faculty mentorship. Requires individual initiative and responsibility. Includes limited formal instruction. Includes literature searches, completion of the IRB application process, materials creation, data collection, data analysis, writing a publishable paper, preparing a poster, preparing an oral presentation, or other options as approved by the instructor. May be repeated for a maximum of nine credits toward graduation. May be graded credit/no credit.

#### BIOL 1010
**General Biology**

3:3:0  
* Prerequisite(s): ACT (or equivalent) composite score of 21+, or completion of ENGL1010 (or higher) with a minimum grade of C-  

Introduces major themes and concepts of biology including cell and molecular biology, genetics, diversity, evolution, and ecology. Provides students with necessary information and skills to critically evaluate what they hear, read, and see in the living world; communicate clearly; and apply methods to interpret data for making informed decisions concerning the role of biology in a world of which they are a part. May be delivered online.

#### BIOL 1015
**General Biology Laboratory**

1:0:2  
* Prerequisite(s) or Corequisite(s): BIOL 1010  

Gives a broad exposure to many aspects of the life sciences. Covers topics of biochemistry, energetics, cell structure and function, genetics, and evolution. BIOL 1615 must be taken concurrently by Biology Department majors. BIOL 1615 is not required for pre-allied health majors.

#### BIOL 1070
**Heredity**

3:3:0  
* Prerequisite(s): BIOL 1010 is strongly recommended  

Introduces genetics for non-majors. Addresses patterns of inheritance from generation to generation (with an emphasis on human heredity), DNA structure and function as well as other aspects of molecular genetics and reproductive technologies.

#### BIOL 1200
**Prehistoric Life**

3:3:0  
* Prerequisite(s): BIOL 1010 or GEO 1020  

Studies prehistoric life. Uses the concepts of biology and physical science. Studies major groups of ancient animals and plants as found in the rock record. Includes aspects and fundamental concepts of biology, ecology, and geology.

#### BIOL 1500
**Biological Anthropology**

3:3:0  
* Prerequisite(s): (ANTH 101G or BIOL 1010) with a C+ or higher; ENGL 2010 with a C+ grade or higher; Instructor approval; BESC department major; University Advanced Standing  

For students with special interests in Anthropology or the Life Sciences. Studies fossils and living primates, primate biology and behavior. Surveys humanoid fossils. Investigates human evolution and variations of basic biology as it pertains to human development. Stresses the importance of the distribution and diversity of humankind.

#### BIOL 1610
**College Biology I**

4:4:0  
* Prerequisite(s): ACT (or equivalent) composite score of 21+, or completion of ENGL1010 (or higher) with a minimum grade of C-  

Introduces major themes and concepts of biology including cell and molecular biology, genetics, diversity, evolution, and ecology. Provides students with necessary information and skills to critically evaluate what they hear, read, and see in the living world; communicate clearly; and apply methods to interpret data for making informed decisions concerning the role of biology in a world of which they are a part. May be delivered online.

#### BIOL 1615
**College Biology I Laboratory**

1:0:3  
* Corequisite(s): BIOL 1610  

Introduces major themes and concepts of biology including cell and molecular biology, genetics, diversity, evolution, and ecology. Provides students with necessary information and skills to critically evaluate what they hear, read, and see in the living world; communicate clearly; and apply methods to interpret data for making informed decisions concerning the role of biology in a world of which they are a part. Requires a term paper, project, or presentation.

#### BIOL 1620
**College Biology II**

3:3:0  
* Prerequisite(s): BIOL 1610 and BIOL 1615 with a C- or higher in each.  
* Corequisite(s): BIOL 1625  

Provides the second semester material in the two semester introductory course designed for biology majors. Covers origin and early evolution of life, plant structure and function, plant diversity, animal structure and function, animal diversity, and animal behavior.
Biol 1625  
College Biology II Laboratory  
1:0:2  
Fall, Spring, Summer  
* Corequisite(s): BIOL 1620  
Laboratory course to accompany BIOL 1620. Topics covered include animal biology and diversity and plant biology and diversity. Course Lab fee of $24 for lab, transportation applies.

Biol 202R  
(Cross-listed with: GEO 202R)  
Science Excursion  
1:0:2  
Fall, Spring, Summer  
For students interested in the natural world. Explores a wide variety of topics in science, including geology, botany, astronomy, zoology, ecology, and archeology. Consists of a minimum of a four-day field trip. Participants should gain an increased understanding of several fields of scientific study. May be repeated as many times as desired for interest, however a maximum of 3 credits may count toward graduation.

Biol 204R  
(Cross-listed with: GEO 204R)  
BB Natural History Excursion  
3:1:6  
On Sufficient Demand  
For students interested in the natural world. Promotes an in-depth look at a wide variety of topics in science, including geology, botany, astronomy, zoology, ecology, and archeology. Consists of 15 hours of lecture plus an appropriate field trip. Participants should gain an interdisciplinary understanding of science and nature. May be repeated for up to six credits toward graduation.

Biol 2070  
Natural History of the Colorado Plateau  
3:1:4  
Not Offered  
* Corequisite(s): GEO 2070  
Addresses the biological component of the Natural History Course taught in conjunction with GEO 2070 at the Capitol Reef Field Station during the summer months. Requires students to sign up for BIOL 2070 and GEO 2070 in order to participate. Teaches students about the ecology of this unique ecosystem, the plants and animals that occupy the landscapes and the interactions of the organisms with man and the environment. Provides an intense, hands-on field course where faculty and students participate together in daily activities and experimental design in a natural setting. Is held part of the time on the UVU main campus and part of the time at the Capitol Reef Field Station. Requires students to live and learn at the field station for approximately 1/3 of the course.

Biol 2500  
Environmental Biology  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): BIOL 1010 or BIOL 1610 is recommended  
Acquaints students with the principles of environmental systems, including biogeochemical cycles, energy transformations, biotic and abiotic interactions, natural resources and their management. Discusses the interactions of ecological principles and humanity’s technology relative to the world today and factors that influence the quality of life.

Biol 290R  
Special Topics In Biology  
1 to 4:0 to 4:0 to 12  
On Sufficient Demand  
* Prerequisite(s): BIOL 1010 or higher or Instructor Approval  
Explores and examines special topics relating to the field of Biology. Emphasizes areas of rapid growth in Biology or current importance to society. May be repeated for a total of six credits toward graduation.

Biol 295R  
Independent Studies in Life Sciences  
1 to 4:0:3 to 12  
Fall, Spring, Summer  
* Prerequisite(s): At least 3 credit hours of college level biology, approval of a faculty mentor, and approval of the department chair  
Provides individual studies in biology under the direction of a faculty mentor. May include literature reviews, original research, and participation in ongoing departmental projects. Introduces students to the methodology of life science research. Requires written and oral communication of scientific information. May be repeated for up to 4 credits toward graduation.

Biol 3070  
(Cross-listed with: GEO 3070)  
Advanced Desert Natural History  
3:1:4  
On Sufficient Demand  
* Prerequisite(s): University Advanced Standing  
Integrates the geological and biological systems of the southwestern deserts. Includes discussion of the ecology and geology of unique desert ecosystems; the rocks and strata providing the foundation of the landscape; the evolutionary and geological processes that mold the landscape and the species within it over time; and, the relationships between the physical and biological aspects of the ecosystem, including humans. Provides an intense, hands-on field course where faculty and students participate together in daily activities and experimental design in a natural setting. Is held part of the time on the UVU main campus and part of the time at the Capitol Reef Field Station. Requires students to live and learn at the field station for approximately 1/3 of the course.

Biol 3100  
Introduction to Data Analysis for Biologists  
3:3:0  
Spring  
* Prerequisite(s): University Advanced Standing  
Introduces computational methods for analyzing and visualizing common biological data types, focusing on developing computational skills and best practices for working with biological data. Provides instruction in command-line computing and appropriate software environments to enable robust and reproducible analyses of varied data sets.

Biol 3300  
Developmental Biology  
3:3:0  
Fall, Spring  
* Prerequisite(s): BIOL 1610 with a minimum grade of C- and University Advanced Standing  
Examines the principles of Developmental Biology with emphasis on the specialization of cells and their organization into body plans. Is recommended for Biology Majors interested in developmental processes. May be delivered online.

Biol 3400  
Cell Biology  
3:3:0  
Fall, Spring  
* Prerequisite(s): BIOL 1610 and CHEM 1220 with a C- or higher in each and University Advanced Standing  
For Biology majors or those desiring more knowledge of this subject. Studies the cell as an organism emphasizing molecular basis of cell structure and functions.

Biol 3405  
Cell Biology Laboratory  
1:0:3  
On Sufficient Demand  
* Prerequisite(s): BIOL 1610 and CHEM 1220 or higher with minimum grade of C- in each and University Advanced Standing  
* Corequisite(s): BIOL 3400  
Uses laboratory exercises to demonstrate topics covered in BIOL 3400. Includes experimental methods for studying cell processes, enzymes, tissue specific proteins, organelles, and experimental design. Course Lab fee of $100 applies.

Biol 3500  
Genetics  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): BIOL 1610 with minimum grade of C- and University Advanced Standing  
For Biology majors. Studies the genetic basis of life and the mechanisms by which information to make life is stored in the DNA. Presents classical, molecular, and population genetics in the background of current techniques and understanding of genetic processes. Provides an understanding of the basic principles of genetics and preparation for more advanced courses in other aspects of biology. Canvas CourseMat $72/ Macmillan applies

Biol 3515  
Advanced Genetics Laboratory  
1:0:4  
Fall, Spring  
* Prerequisite(s): University Advanced Standing  
* Prerequisite(s) or Corequisite(s): BIOL 3500  
Examines advanced aspects of classical and molecular genetic transmission and analysis. Provides hands-on experience with the methods of classical and molecular genetics.

Biol 3550  
Molecular Biology  
3:3:0  
Fall, Spring  
* Prerequisite(s): BIOL 1610, CHEM 1215, and University Advanced Standing  
Examines structure, organization, replication, and expression of genomes. Explores the methods used for study of genome structure and function, including nucleotide and protein extractions, separations, and characterizations. Compares sequence data of genomes, transcriptomes, and proteomes. Examines primary literature in the field.
Course Descriptions

BIOL 3555
Experiments in Molecular Biology
1:0:3 Fall, Spring
* Prerequisite(s): University Advanced Standing
* BIOL 3550
Performs experiments in molecular biology including cDNA synthesis, gene cloning, DNA sequencing, polymerase chain reaction (PCR), computer analysis of nucleic acid and protein sequences, protein expression-screening and protein separation and characterization. Course Lab fee of $150 applies.

BIOL 3600 (Cross-listed with: CHEM 3600)
Biological Chemistry
3:3:0 Fall, Spring, Summer
* Prerequisite(s): University Advanced Standing
* Prerequisite(s) or Corequisite(s): CHEM 2320

BIOL 3605 (Cross-listed with: CHEM 3605)
Biological Chemistry Lab
1:0:4 On Sufficient Demand
* Prerequisite(s): University Advanced Standing
* Corequisite(s): BIOL 3600
Introduces laboratory techniques in biochemistry. Studies methods and theory behind purification of proteins and nucleic acids including chromatography and electrophoresis. Uses methods in assessing enzyme activity and kinetics and protein structure analysis. Includes analysis and manipulation of DNA and RNA. Course Lab fee of $145 applies.

BIOL 3620 (Cross-listed with: CHEM 3620)
Biological Chemistry II
3:3:0 Spring
* Prerequisite(s): (CHEM 3600 or BIOL 3600) and University Advanced Standing
Is a continuation of CHEM 3600. Teaches in-depth the biochemistry of molecular and cell biology processes. Explores the topics of molecular information flow and signaling. Examines current understanding in biochemical methods and ideas beyond those discussed in Biochem I.

BIOL 369R
Introduction to Undergraduate Research
1:1:0 Fall, Spring
* Prerequisite(s): BIOL 1610; (MATH 1050 or STAT 2040 highly recommended) and University Advanced Standing
Introduces fundamentals of research in biology, including how to identify a research problem, form testable hypotheses, select appropriate experimental methods, collect data, determine appropriate sample size, establish appropriate controls, conduct experiments, document experiment details and data, tabulate, analyze and interpret data and how to write a research report. Emphasizes research ethics, institutional research guidelines, personal protection, and proper disposal of hazardous chemicals and biologicals. Introduces research opportunities available within and beyond the university community. May be repeated for a maximum of 2 credits toward graduation.

BIOL 3700
General Ecology
3:3:0 Fall, Spring
* Prerequisite(s): BIOL 1620 (or equivalent with instructor consent) with a C- or higher, and University Advanced Standing
Introduces the relationships between organisms and their environment, including population, community and ecosystem processes. Specific topics include adaptation to abiotic factors and the influence of these factors on distribution and abundance; survivorship, age structure, and growth of populations; life history patterns, species interactions, community structure and diversity, biome structure and distribution, and energy flow and nutrient cycles in ecosystems. Also presents the impact of humans on ecological processes.

BIOL 3705
General Ecology Laboratory
1:0:2 Not Offered
* Prerequisite(s): University Advanced Standing
* Corequisite(s): BIOL 3700
Laboratory component to General Ecology in which students may acquire skills in the collection, analysis, and presentation of ecological data. Activities include field sampling of plant and animal populations, laboratory experiments and observations, and computer simulations. Emphasizes techniques in data storage and statistical analysis, graphical representation of data, and scientific writing. Course Lab fee of $18 for lab, transportation applies.

BIOL 3800
Conservation Biology
3:3:0 Spring
* Prerequisite(s): (BIOL 1010 or BIOL 1620 with a minimum of C-) and University Advanced Standing; BIOL 3700 strongly recommended
Presents scientific principles of conservation biology and associated cultural and ethical issues. Explores the diversity of life on this planet and how that diversity is organized and distributed. Investigates the challenges facing management of our natural resources in order to maintain healthy and productive populations and ecosystems. Course fee of $13 for materials, transportation applies.

BIOL 4260
Ethical Issues in Biology
2:1:2 On Sufficient Demand
* Prerequisite(s): (BIOL 1610, BIOL 1620, and PHIL 2050 with a C- or higher in each) and University Advanced Standing
Offer an in-depth analysis of current ethical issues in biology. Requires extensive reading and an analytical term paper. Presents subjects in lecture, and in lab sessions, concentrates on readings and on analyses of issues and their effects on people. Explores and discusses individual participant paradigms.

BIOL 429R
Professional Development
1:1:0 Fall, Spring
* Prerequisite(s): University Advanced Standing
* Prerequisite(s) or Corequisite(s): BIOL 4500
Focuses on professional skills required for students to move forward in their chosen career. Emphasizes writing an effective cover letter, resume and personal statement and communicating effectively in an interview setting. Addresses social media branding for professional settings. Requires students to complete the biology major field test and other department assessments.

BIOL 4300
Bioinformatics and Genome Analysis
4:3:2 On Sufficient Demand
* Prerequisite(s): BIOL 3500 with a minimum grade C- and University Advanced Standing
Studies analysis of genomic sequences, comparison of genomes of different species to gather information about protein function. Includes hands on learning in bioinformatics and genomics. Uses a combination of computer work and discussions that will allow the student to perform basic gene and protein analysis using web tools.

BIOL 4200 (Cross-listed with: CHEM 4200, GEO 4200, PHYS 4200)
Teaching Methods in Science
3:2:2 Fall, Spring
* Prerequisite(s): Acceptance into secondary education program, senior-level standing, instructor approval, and University Advanced Standing
Examines objectives, instructional methods and curriculum for teaching science in the secondary school. Includes developing, adapting, evaluating, and using strategies and materials for teaching biological and physical sciences, appropriate both to the special needs of the learners and the special characteristics of science discipline.

BIOL 4202
Biological Chemistry Lab

BIOL 4300
Bioinformatics and Genome Analysis

BIOL 4200 (Cross-listed with: CHEM 4200, GEO 4200, PHYS 4200)
Teaching Methods in Science
3:2:2 Fall, Spring
* Prerequisite(s): Acceptance into secondary education program, senior-level standing, instructor approval, and University Advanced Standing
Examines objectives, instructional methods and curriculum for teaching science in the secondary school. Includes developing, adapting, evaluating, and using strategies and materials for teaching biological and physical sciences, appropriate both to the special needs of the learners and the special characteristics of science discipline.

BIOL 4202
Biological Chemistry Lab

BIOL 4300
Bioinformatics and Genome Analysis

BIOL 4200 (Cross-listed with: CHEM 4200, GEO 4200, PHYS 4200)
Teaching Methods in Science
3:2:2 Fall, Spring
* Prerequisite(s): Acceptance into secondary education program, senior-level standing, instructor approval, and University Advanced Standing
Examines objectives, instructional methods and curriculum for teaching science in the secondary school. Includes developing, adapting, evaluating, and using strategies and materials for teaching biological and physical sciences, appropriate both to the special needs of the learners and the special characteristics of science discipline.

BIOL 4202
Biological Chemistry Lab

BIOL 4300
Bioinformatics and Genome Analysis

BIOL 4200 (Cross-listed with: CHEM 4200, GEO 4200, PHYS 4200)
Teaching Methods in Science
3:2:2 Fall, Spring
* Prerequisite(s): Acceptance into secondary education program, senior-level standing, instructor approval, and University Advanced Standing
Examines objectives, instructional methods and curriculum for teaching science in the secondary school. Includes developing, adapting, evaluating, and using strategies and materials for teaching biological and physical sciences, appropriate both to the special needs of the learners and the special characteristics of science discipline.

BIOL 4202
Biological Chemistry Lab

BIOL 4300
Bioinformatics and Genome Analysis

BIOL 4200 (Cross-listed with: CHEM 4200, GEO 4200, PHYS 4200)
Teaching Methods in Science
3:2:2 Fall, Spring
* Prerequisite(s): Acceptance into secondary education program, senior-level standing, instructor approval, and University Advanced Standing
Examines objectives, instructional methods and curriculum for teaching science in the secondary school. Includes developing, adapting, evaluating, and using strategies and materials for teaching biological and physical sciences, appropriate both to the special needs of the learners and the special characteristics of science discipline.

BIOL 4202
Biological Chemistry Lab

BIOL 4300
Bioinformatics and Genome Analysis

BIOL 4200 (Cross-listed with: CHEM 4200, GEO 4200, PHYS 4200)
Teaching Methods in Science
3:2:2 Fall, Spring
* Prerequisite(s): Acceptance into secondary education program, senior-level standing, instructor approval, and University Advanced Standing
Examines objectives, instructional methods and curriculum for teaching science in the secondary school. Includes developing, adapting, evaluating, and using strategies and materials for teaching biological and physical sciences, appropriate both to the special needs of the learners and the special characteristics of science discipline.

BIOL 4202
Biological Chemistry Lab

BIOL 4300
Bioinformatics and Genome Analysis

BIOL 4200 (Cross-listed with: CHEM 4200, GEO 4200, PHYS 4200)
Teaching Methods in Science
3:2:2 Fall, Spring
* Prerequisite(s): Acceptance into secondary education program, senior-level standing, instructor approval, and University Advanced Standing
Examines objectives, instructional methods and curriculum for teaching science in the secondary school. Includes developing, adapting, evaluating, and using strategies and materials for teaching biological and physical sciences, appropriate both to the special needs of the learners and the special characteristics of science discipline.
BIOL 4450 (Cross-listed with: MICR 4450) Immunology 3:3:0 On Sufficient Demand
* Prerequisite(s): (MICR 2060 or MICR 3450 or ZOOL 2420) and University Advanced Standing
* Corequisite(s): BIOL 4455

Explores the macromolecules, cells and organs involved in innate and adaptive immunity. Examines the development of lymphocyte repertoire, positive and negative selection of lymphocytes and the production of effector lymphocytes. Studies properties of antigens, vaccines, antigen presenting cells and the mechanisms of antigen presentation. Reviews major immunological methods for medical diagnostics and other applications. Examines causes and consequences of autoimmune and lymphoproliferative diseases and immunodeficiencies. Probes how immune response could be manipulated for cancer therapy and transplantation medicine.

BIOL 4455 Immunology Laboratory 1:0:2 On Sufficient Demand
* Prerequisite(s): University Advanced Standing
* Corequisite(s): BIOL 4450

Addresses federal, local and institutional regulations on using vertebrate animals for biomedical research. Teaches and regularly practices aseptic techniques required in handling bioshazardous materials including vertebrate tissues. Studies how to collect tissues and blood from vertebrate animals and process the samples for harvesting various types of cells and macromolecules. Presents common immunological techniques such as western blot analysis and ELISA. Covers how to immunize animals using appropriate adjuvant and harvest plasma from immunized animals to isolate immunoglobulin. Examines tissue typing methodologies including PCR techniques. Course Lab fee of $150 applies.

BIOL 4500 Principles of Evolution WE 3:3:0 Fall, Spring
* Prerequisite(s): BIOL 1620 and BIOL 3500 with a C- or higher in each, senior status, and University Advanced Standing
* Prerequisite(s) or Corequisite(s): BIOL 3700

Focuses on the concepts of evolution as a fundamental principle of biology. Emphasizes the mechanisms and explanations of the tremendous diversity of life. Studies classical, molecular and current explanations of evolution in the background of current techniques and understanding of the genetic processes. Examines the principles of evolution and the various aspects of natural selection and speciation.

BIOL 4550 Molecular Evolution and Bioinformatics WE 3:3:0 Spring
* Prerequisite(s): BIOL 3500 with minimum grade of C- and minimum of 6 additional credits upper division biology (BIOL, BOT, MICR, ZOOL, BTEC) courses, and University Advanced Standing

Focuses on the concepts of evolution as a fundamental principle of biology with emphasis on change at the molecular level. Teaches how natural selection shapes the evolution of genes, gene systems, macromolecules, and organisms. Explores the roles of mutation, natural selection, population size and subdivision, and genetic recombination. Introduces different approaches for testing hypotheses about how molecules evolve by using phylogenetic analysis.

BIOL 481R Biology Internship 1 to 5:1 to 5:0 Fall, Spring, Summer
* Prerequisite(s): BIOL 1620 with a C- or higher and Instructor Approval

Allows biology majors to earn credit while obtaining practical and research experience as an intern in a government, nonprofit, private agency, or with an approved employer. Must be supervised by an agency representative and faculty advisor. Department chairperson approval required and written contracts must be completed and signed. May be repeated with a maximum of 5 credits counting toward graduation. May be graded credit/no credit.

BIOL 489R Student Research 1 to 4:0:3 to 12 Fall, Spring, Summer
* Prerequisite(s): BIOL 1620, CHEM 1210, Junior or Senior Standing, instructor permission, and University Advanced Standing

Provides guided research studies in biology under the direction of a Biology Department faculty mentor. Includes any combination of literature reviews, original research, and/or participation in ongoing departmental projects. Involves students in the methodology of original biology research. Requires preparation and presentation of oral and/or written reports. May culminate in results that will form the basis of the senior thesis in the major, if thesis option is chosen. May be repeated for 4 credits toward graduation.

BIOL 490R Special Topics in Biology 1 to 4:0:0 On Sufficient Demand
* Prerequisite(s): BIOL 1620 and University Advanced Standing

Explores and examines special topics relating to the field of biology. Emphasizes areas of rapid growth in biology or current importance to society. May be repeated for a total of 9 credits toward graduation.

BIOL 492R Professional Development 1:1:0 Fall, Spring
* Prerequisite(s): University Advanced Standing
* Prerequisite(s) or Corequisite(s): BIOL 4500

Focuses on professional skills required for students to move forward in their chosen career. Emphasizes writing an effective cover letter, resume and personal statement and communicating effectively in an interview setting. Addresses social media branding for professional settings. Requires students to complete the biology major field test and other department assessments.

BIOL 494R Student Seminar WE 2:2:0 Fall, Spring
* Prerequisite(s): BIOL 1620 with a C- or higher, junior or senior standing, and University Advanced Standing

Requires students to research scientific literature, give oral presentations, write a research paper, and lead discussions on assigned biology topics in specific areas of current research in biology. May be repeated for up to 4 credits toward graduation.

BIOL 497R Biology Colloquium .5:0:0 Fall, Spring
* Prerequisite(s): University Advanced Standing

Requires students to attend lectures presented every other week by department faculty and/or invited speakers. Features lectures that are usually a summary of the speaker’s recent research results, presented at a level appropriate for junior and senior biological science majors. May be repeated for a maximum of 2 credits toward graduation.

BIOL 499R Senior Thesis 1 to 2:0:3 to 6 Fall, Spring, Summer
* Prerequisite(s): ENGL 2010, junior standing, instructor permission, and University Advanced Standing

Teaches students to write a thesis based on library research or work performed during laboratory/field research under BIOL 489R. Provides experience in critically analyzing published literature and, if laboratory/field research was performed, comparing research results with the scientific literature. Requires a technically accurate report on one’s findings. Includes the opportunity to present the research results to students, faculty and the community at a Department of Biology seminar. May be repeated once for a total of 2 credits toward graduation.

BIOL 5000 Regulatory Affairs for Life Sciences 4:4:0
* Prerequisite(s): Acceptance into the Certificate of Proficiency in Regulatory Affairs for Life Sciences or Instructor Approval

Introduces regulatory affairs as practiced by medical device and biopharma companies in the US. Focuses on United States Federal Drug Administration and International Conference on Harmonisation of Technical Requirements for Registration of Pharmaceuticals for Human Use guidelines and best practices.

BIOL 5010 Quality Management Systems for the Life Sciences 2:2:0
* Prerequisite(s): BIOL 5000

Introduces FDA and International Conference on Harmonisation (ICH) requirements for the QSR (Quality System Regulation); Focuses on ISO 13485 and related guidelines. Specifically covers the regulations and standards which are the basis of the regulated life science industry.

BIOL 5020 Design Control and Risk Management for the Life Sciences 3:3:0
* Prerequisite(s): BIOL 5000

Introduces design control and risk management requirements for medical device and BioPharma companies.
This page contains information about courses at Utah Valley University, focusing on Building Inspection Technology (BIT) and Business/Marketing Education (BMED). The courses are described with their prerequisites, credits, and offerings, such as the semester in which they are offered (Fall, Spring, or On Sufficient Demand). The courses cover topics like building codes, plan review, and regulatory affairs, as well as business education and marketing. The courses are designed to provide practical experience through field work, on-site visits, and projects that incorporate various concepts and regulations. The page also notes that courses may be repeated for a maximum number of credits toward graduation or for a specific time period. The course descriptions are structured to provide a clear understanding of the course objectives, requirements, and the expected learning outcomes. The page is part of the Course Catalog for the 2020-2021 academic year.
**Course Descriptions**

**BMED 4300**
Methods of Teaching Computer Science
3:0  On Sufficient Demand
* Prerequisite(s): (INFO 1120 or CS 1030) and (INFO 1200 or CS 1500) or Instructor Approval; and University Advanced Standing

Methodology course designed for secondary education students and current educators to gain the pedagogical knowledge and learn best practices necessary for teaching secondary computer science (CS) concepts. Combines pedagogical principles with computer science knowledge to create an effective learning environment. Includes reading, discussing, reflection, evaluation, micro-teaching, and field observations. Addresses the standards set by the International Society for Technology in Education (SITE) for students and for teachers, and utilizes in the design, implementation, and assessment of learning materials. Lab access fee of $45 applies.

**Botany (BOT)**

**BOT 2050**  BB 3:0  Fall
Field Botany
3:2:3
* Prerequisite(s): BIOL 1010 or BOT 2400 recommended

For biology majors and non-majors. Covers the classification, identification, and ecology of woody plants with an emphasis on native trees and shrubs. Includes field trips and laboratory work. Student plant collection required. Course Lab fee of $30 for transportation applies.

**BOT 2100**  BB 3:0  Summer
Flora of Utah
3:2:3
* Prerequisite(s): None, BIOL 1010 is recommended

A vascular plant taxonomy course for intended botany and biology majors or anyone interested in learning about plants native to Utah. Covers the principles of plant classification, nomenclature, and identification with an emphasis on Utah flowering plants. Includes field trips and weekly laboratory. Student plant collection required. Course Lab fee of $30 for transportation applies.

**BOT 2400**  BB 3:0  Spring
Plant Kingdom
4:3:2
* Prerequisite(s): BIOL 1010 or BIOL 1610 with a minimum grade of C-

Surveys of the Divisions (Phyla) traditionally studied by botanists, emphasizing structure, reproduction, systematics, and evolution. Completers should be familiar with the morphological features of the major prokaryotic, fungal, algal, and plant groups. Includes a weekly laboratory. Course Lab fee of $50 for supplies applies.

**BOT 295R**
Independent Studies in Botany
1 to 4:0:3 to 12  Fall, Spring, Summer
* Prerequisite(s): At least 3 credit hours of college level biology, approval of a faculty mentor, and approval of the department chair

Provides individual studies in botany under the direction of a faculty mentor. May include literature reviews, original research, and participation in ongoing departmental projects. Introduces students to the methodology of botany research. Requires written and oral communication of scientific information. May be repeated for up to 4 credits toward graduation.

**BOT 3340**
Plant Biology
4:3:2  Fall
* Prerequisite(s): BIOL 1620 and (CHEM 1120 or CHEM 1220 or higher) with a minimum grade of C- in each, and University Advanced Standing

Designed for Biology Education majors and others wishing a one semester upper division combined plant anatomy/plant physiology course. Covers structure-function interrelationships from the cellular to whole plant level, including aspects of plant anatomy, physiology, reproduction, growth and development with emphasis on the angiosperms (flowering plants). Includes weekly laboratory. Students may not receive credit for both BOT 3340 and BOT 4100 and/or BOT 4600. Course lab fee of $30 for supplies applies.

**BOT 3800**
Ethnobotany
4:3:2
* Prerequisite(s): BIOL 1620 with a C- or higher and University Advanced Standing

Analyzes and evaluates interactions between people and plants. Discusses how plants are used in medicine, industry, food, and culture. Covers basic concepts, including literature and field research techniques, phytochemical analysis, and ethical issues such as bioprospecting and conservation. Includes class discussions, student-led activities, oral presentations, and a final project. Course lab fee of $15 applies.

**BOT 4050**
Plant Ecology
3:0:0  Fall
* Prerequisite(s): BIOL 1620 with a C- or higher and University Advanced Standing
* Corequisite(s): BOT 4055

Studies the interrelationships between plants and their environment, including population, community, and ecosystem processes. Specific topics include adaptation to abiotic factors, plant life history patterns, community structure, diversity, and dynamics; biome structure and distribution, and energy flow and nutrient cycles in ecosystems. Presents the impact of humans on plant communities and ecological processes.

**BOT 4055**
Plant Ecology Laboratory
1:0:2  Fall
* Prerequisite(s): University Advanced Standing
* Corequisite(s): BOT 4050

Laboratory component of Plant Ecology in which students acquire skills in the collection, analysis, and presentation of ecological data. Includes field sampling of plant populations, laboratory and greenhouse experiments, and scientific writing. Field trips, including one weekend trip, are required. Course Lab fee of $87 for lab, transportation applies.

**BOT 4100**
Plant Anatomy
4:3:2  Not Offered
* Prerequisite(s): BIOL 1620 and BIOL 1625 with a minimum grade of C- in each, and University Advanced Standing

Covers the structure and development of cells, tissues and tissue systems in stems, roots, leaves, and reproductive structures in vascular plants, with emphasis on the angiosperms. Discusses primary and secondary plant body, including wood anatomy. Includes weekly laboratory. Students cannot receive credit toward graduation for both BOT 3340 and BOT 4100. Course lab fee of $25 for supplies applies.

**BOT 4200**
Plant Systematics
3:2:2  Spring
* Prerequisite(s): (BOT 2050 or BOT 2100), (BIOL 1010 or BIOL 1620), and University Advanced Standing

Covers the principles of plant classification and the techniques employed in gathering and analyzing taxonomic data. Focuses on the essentials of phylegetic analysis in plants and on the evolutionary relationships between the major groups of vascular plants. Includes a weekly laboratory.

**BOT 4300**
Native Trees and Shrubs of Utah
3:2:2  Fall
* Prerequisite(s): BIOL 1620 with a C- or higher and University Advanced Standing; BOT 2400 suggested

Explores the diversity of woody plants of Utah, the plant communities they inhabit, and the ecological roles they play. Requires field trips; may include overnight trips as well as scheduled labs. Course Lab fee of $70 for transportation applies.

**BOT 4430**
Plant Pathology
3:2:3
* Prerequisite(s): BIOL 1610 with a minimum grade of C- and University Advanced Standing

Teaches the fundamental concepts of plant pathology. Describes plant disease symptoms and organisms that cause those diseases and methods of control and diagnosis of diseases. Includes required laboratory. Course fee of $20 applies.

**BOT 4500**
Introduction to Grasses
3:2:2  Fall, Summer
* Prerequisite(s): BIOL 1620 with minimum grade of C-, and University Advanced Standing

Discusses grasses and their relatives, grass anatomy, taxonomy, and ecology. Emphasizes identification techniques. Includes heavy lab component and required field trips. Requires student plant collection.
Course Descriptions

BOT 4600  
Plant Physiology  
3:3:0  
Spring  
* Prerequisite(s): BIOL 1620 and CHEM 1220 both with a minimum grade of C-, and University Advanced Standing  
* Corequisite(s): BOT 4605  
Covers the physiological processes occurring in plants. Includes experimental techniques used in the investigation of processes such as photosynthesis, water and solute transport, tissue culture, growth regulation and responses and plant hormones. Involves problem solving and critical thinking skills. Students can not receive credit for both BOT 4600 and BOT 3340.

BOT 4605  
Plant Physiology Laboratory  
1:0:3  
Spring  
* Prerequisite(s): BIOL 1610, BIOL 1615, and University Advanced Standing  
* Corequisite(s): BOT 4600  
Focuses on laboratory aspects of topics in BOT 4600. Covers experimental methods for studying plant physiological processes such as respiration, photosynthesis, mineral nutrition, transpiration and tissue-water relations. Course Lab fee of $35 applies.

BOT 4700  
Plant Tissue Culture  
4:2:4  
Spring  
* Prerequisite(s): BIOL 1620 with a minimum grade of C- and University Advanced Standing  
Teaches principles of plant micropropagation techniques. Prepares the student to design and carry out their own micropropagation systems for the cultivation of a particular plant species. Course lab fee of $60 applies.

BOT 4800  
Plant-Herbivore Interactions  
3:3:0  
Not Offered  
* Prerequisite(s): BIOL 1620 with a C- or higher, and University Advanced Standing  
Studies the diversity of interactions between plants and herbivores, and how these interactions can affect population, community, and ecosystem-level dynamics. Topics include plant defenses, tritrophic interactions, plant succession, and co-evolution. Implications of plant-herbivore interactions to natural resource management are considered.

BOT 481R  
Botany Internship  
1 to 5:1 to 5:0  
On Sufficient Demand  
* Prerequisite(s): BIOL 1620 with a C- or higher, Instructor Approval, and University Advanced Standing  
Allows biology majors to earn credit while obtaining practical and research experience as an intern in a government, nonprofit, private agency, or with an approved employer. Must be supervised by agency representative and faculty advisor. Department chairperson approval required and written contracts must be completed and signed. May be repeated for a maximum of 5 credits toward graduation. May be graded credit/no credit.

BOT 489R  
Student Research  
1 to 4:0:3 to 12  
On Sufficient Demand  
* Prerequisite(s): BIOL 1620, CHEM 1210, Junior or Senior Standing, Instructor Approval, and University Advanced Standing  
Provides guided research studies in botany under the direction of a Biology Department faculty mentor. Includes any combination of literature reviews, original research, and/or participation in ongoing departmental projects. Involves students in the methodology of original botanical research. Requires preparation and presentation of oral and/or written reports. May culminate in results that will form the basis of the senior thesis in the major, if thesis option is chosen. May be repeated for 4 credits toward graduation.

BOT 490R  
Special Topics in Botany  
1 to 4:0 to 4:0 to 12  
On Sufficient Demand  
* Prerequisite(s): BIOL 1620 with a C- or higher, and University Advanced Standing  
Explores and examines special topics relating to botany. May emphasize areas of rapid growth in botanical science or areas not covered in other courses. May be repeated for a total of 8 credits toward graduation.

BOT 499R  
Senior Thesis  
1 to 2:1 to 2:0  
On Sufficient Demand  
* Prerequisite(s): ENGL 2010, Junior standing, Instructor Approval, and University Advanced Standing  
Is for students who are nearing completion of a baccalaureate degree in Botany with the thesis option. Assists students who are writing a thesis based only on library research, or those who have performed laboratory/field research under BIOL 489R or BOT 489R. Provides experience in critically analyzing published literature and, if laboratory/field research was performed, comparing research results with the scientific literature. Is supervised by an appointed faculty member of the Department of Biology. Requires a technically accurate report on one's findings. Includes the opportunity to present the research results to students, faculty and the community at a Department of Biology seminar. May be repeated once for a total of 2 credits toward graduation.

Biotechnology (BTEC)

BTEC 1010  
Fundamentals of Biotechnology I Career Survey  
3:2:2  
Fall, Spring, Summer  
Explores careers in biotechnology with emphasis on central dogma of biology, DNA techniques, applications in biotech, and bioethics. Examines forensics and human cloning. Includes lab work. Course Lab fee of $26 applies.

BTEC 2040  
Advanced Nucleic Acid Laboratory  
3:0:6  
Fall, Spring  
* Prerequisite(s): BTEC 1010 with minimum grade of C-  
Teaches advanced nucleic acid modification and analysis methods. Includes site-directed mutagenesis, DNA sequencing, and RNA analysis methods, high-resolution DNA melting for genotyping and real-time PCR to quantitate DNA in samples. Incorporates methods to mutate 2 genes using CRISPR gene editing technology followed by RT-PCR to analyze gene expression (RNA isolation, creating cDNA, followed by real-time PCR).

BTEC 2050  
Protein Purification and Analysis  
3:2:3  
Fall, Spring  
* Prerequisite(s): BTEC 1010 with minimum grade of a C  
Teaches current techniques with protein production, purification, and analysis. Includes instruction and practice with polyacrylamide gel electrophoresis (PAGE), chromatography, western blot, and FPLC analysis. Course fee of $107 for lab applies.

BTEC 2070  
Cell Culture Techniques  
2:0:6  
Fall, Spring  
* Prerequisite(s): BIOL 1615 with a minimum grade of a C  
Teaches basics of eukaryote cell culture. Includes handling, storage, and maintenance of mammalian stocks. Emphasizes media preparation and sterile techniques. Includes in vitro labeling and transfection. Course fee of $195 for lab applies.

BTEC 3030  
Advanced Nucleic Acid Laboratory  
3:0:6  
Fall, Spring  
* Prerequisite(s): BTEC 1010 with minimum grade of C-  
Teaches advanced nucleic acid modification and analysis methods. Includes site-directed mutagenesis, DNA sequencing, and RNA analysis methods, high-resolution DNA melting for genotyping and real-time PCR to quantitate DNA in samples. Incorporates methods to mutate 2 genes using CRISPR gene editing technology followed by RT-PCR to analyze gene expression (RNA isolation, creating cDNA, followed by real-time PCR).

BTEC 3300  
Bio Molecular Modeling and Simulations  
4:4:0  
Fall, Spring  
* Prerequisite(s): CHEM 3600 or BIOL 3600, and University Advanced Standing  
Introduces students to the field of molecular modeling and simulations and to the wide range of problems that can be tackled using computational methods. Focuses on biomolecular simulations and computer-aided drug discovery. Emphasizes the connection between structure, dynamics, and function. Teaches application of algorithmic thinking to solving complex problems. Develops practical skills needed to perform simulations and analyze the results. Develops understanding of the inherent approximations and limitations of the methods for adequate assessment of modeling results. Covers topics such as molecular visualization and rendering, molecular dynamics simulations, and computer-aided drug discovery through virtual screening and small molecule docking.

BTEC 481R  
Biotechnology Internship  
1 to 10:1 to 10:0  
Fall, Spring, Summer  
* Prerequisite(s): BIOL 1610 with a minimum grade of C-, junior standing in Biotechnology B.S. program, and instructor approval  
Allows biotechnology majors to earn credit while obtaining practical and research experience as an intern in a government, nonprofit, private agency, or with an approved employer. Must be supervised by agency representative and faculty advisor. Department chairperson approval required and written contracts must be completed and signed. May be repeated for a maximum of 10 credits. May be graded credit/no credit.
**Course Descriptions**

**BTEC 489R**

**Student Research**  
1 to 4:0:3 to 12  
Fall, Spring, Summer  
* Prerequisite(s): BOL 1610, CHEM 1210, BTEC 2010, Junior or Senior Standing, instructor permission, and University Advanced Standing  

Provides guided research studies in biotechnology under the direction of a Biology Department mentor. Includes any combination of literature reviews, original research, and/or participation in ongoing departmental projects. Involves students in the methodology of original biology research. Requires preparation and presentation of oral and/or written reports. May culminate in results that will form the basis of the senior thesis in the major, if thesis option is chosen. May be repeated for 8 credits toward graduation.

**BTEC 490R**

**Special Topics in Biotechnology**  
1 to 4:0:4 to 8  
Fall, Spring  
* Prerequisite(s): BOL 1610 with minimum grade of C-, and University Advanced Standing

Explores and examines special topics relating to the field of biotechnology. Emphasizes areas of rapid growth in biotechnology or current importance to society. May be repeated for a maximum of 18 credits toward graduation.

**BTEC 499R**

**Senior Thesis**  
1 to 2:0:3 to 6  
Fall, Spring  
* Prerequisite(s): ENGL 2010, junior standing, instructor permission, and University Advanced Standing

Is for students who are nearing completion of a baccalaurate degree in Biotechnology with the thesis option. Assists students who are writing a thesis based only on library research, or those who have performed laboratory/field research under BTEC 499R. Provides experience in critically analyzing published literature and, if laboratory/field research was performed, comparing research results with the scientific literature. Is supervised by an appointed faculty member of the Department of Biology. Requires a technically accurate report on one's findings. Includes the opportunity to present the research results to students, faculty and the community at a Department of Biology seminar and/or other appropriate venues (e.g., conferences). May be repeated for a maximum of 2 credits toward graduation.

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**Culinary Arts (CA)**

**CA 1120**  
**Cooking Skills Development**  
4.5:2:7.5  
Fall, Spring  
* Prerequisite(s): Matriculation and acceptance into the Culinary Arts Institute  
* Corequisite(s): CA 1170, CA 1310

Teaches basic food service skills in a commercial kitchen environment. Stresses the use of standardized recipes and procedures. Provides daily end product critiquing. Includes rotation between stock and sauce station, soup station, center of plate items along with appropriate starch and vegetable items, and breakfast station. Emphasizes sanitary food handling practices and professional work habits. Course fee of $750 for materials, equipment applies.

**CA 1170**  
**Pastry and Baking Skills**  
4.5:2:7.5  
Fall, Spring  
* Prerequisite(s): Matriculation and acceptance into the Culinary Arts Institute  
* Corequisite(s): CA 1120 and CA 1310

Teaches basic baking and pastry skills in a commercial kitchen environment. Stresses the use of standardized recipes and procedures. Provides daily end product critiquing. Includes simple yeast-raised products, quick breads, pies, and custards, cakes and tortes, cookies and frozen desserts. Emphasizes sanitary food handling practices and professional work habits. Course fee of $750 for materials, equipment applies.

**CA 1140**  
**Professional Dining Room Services**  
1:5:1.5  
Fall, Spring, Summer  
* Prerequisite(s): Matriculation and Acceptance into the Culinary Arts Institute

Covers the key aspects and responsibilities of table servers in different styles of operations. Covers taking reservations, greeting guests, basic table settings, formal and specialized settings, food and beverage service, selling menu specials, dealing with closing checks, dealing with customer complaints, emergency procedures, and the use of a Point of Sale system.

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**CA 1150**  
**Nutrition and Food Service**  
3:3:0  
Fall, Spring  
* Prerequisite(s): Matriculation and Acceptance into the Culinary Arts Institute

Provides an understanding of how and why the relationship between food and health has moved into sharp focus. This course will trace the change in dietary patterns that have been noted by the food service industry. This course has been designed to help meet the need of developing adequate healthful food programs. You will learn about the changes in eating attitudes and be able to define the various responsibilities of the food service industry. You will learn how to identify whether a market exists for a healthful food program and how to plan and manage such a program. The course will also explore nutrients and their food sources; physiological and metabolic aspects of nutrient functions; individual requirements; food choices and selection; prevention and treatment of common nutritional-related disease; along with contemporary and controversial issues.

**CA 1160**  
**Culinary Math**  
1:1:0  
Fall, Spring, Summer  
* Prerequisite(s): Matriculation and Acceptance into the Culinary Arts Institute

Allows culinary professionals to utilize all the tools necessary to manage daily food service operations for maximum efficiency and profitability. Reviews basic math functions then expands into recipe conversion, yields, recipe costing, and menu costing.

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**CA 1230**  
**Professional Kitchen I Cooking**  
4.5:2:7.5  
Fall, Spring  
* Prerequisite(s): CA 1120 and CA 1170  
* Corequisite(s): CA 1240

Emphasizes proper preparation of cold food items. Includes preparation of tossed, compound and composed salads, cold sandwiches, dressings, salad bar items, display platters, assorted forcemeat, smoked and cured items, along with marinated and assorted cold first course items. Course fee of $750 for materials, equipment applies.

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**CA 1260**  
**Culinary Spanish**  
1:1:0  
Fall, Spring  
* Prerequisite(s): Matriculation and Acceptance into the Culinary Arts Institute

Designed to assist food service employers, managers, and workers to effectively communicate to an increasingly Spanish-speaking work force. Introduces short phrasing to assist in basic communication.

**CA 1310**  
**Purchasing and Storeroom Management**  
3:3:0  
Fall, Spring  
* Corequisite(s): CA 1120 and CA 1170

Teaches principles and practices concerning purchasing of foods, supplies, and materials for a modern full-service food service operation. Emphasizes buying, writing specifications, determining needs, and controlling quality.

**CA 1320**  
**Culinary Management**  
3:3:0  
Fall, Spring  
* Prerequisite(s): Matriculation and Acceptance into the Culinary Arts Institute

Focuses on employee management and supervision concepts used in the food service field. Includes instruction on writing a professional resume.
Course Descriptions

CA 1480 Sanitation and Table Service 3:3:0 On Sufficient Demand
Teaches effective food and beverage service management in outlets ranging from cafeterias and coffee shops to room service, banquet areas, and high-check-average dining rooms. Presents basic service principles while emphasizing the special needs of guests. Explains effective sanitation management to achieve high standards that will keep customers coming back. Includes lecture, film, and tapes. Develops an entry-level working knowledge of serving food and beverage.

CA 1490 Food Service Sanitation 1:1:0 Fall, Spring, Summer
* Prerequisite(s): Matriculation and Acceptance into the Culinary Arts Institute
Explains effective sanitation measures that will keep customers and employees safe. Using the ServSafe Program from the National Restaurant Association this course meets the state wide requirements for food service employee's sanitation and safety training.

CA 2120 Professional Kitchen II Restaurant 5.5:2:10.5 Fall, Spring
* Prerequisite(s): CA 1230
Focuses on practical applications of previous courses by running Restaurant Forte. Enhances knowledge of cooking methods, mise en place, flavor building, soups, salads, entrees and desserts. Course fee of $750 for materials, equipment applies.

CA 2130 Advanced Pastry Baking 4.5:2:7.5 Fall, Spring
* Prerequisite(s): CA 1170
* Corequisite(s): CA 2120
Emphasizes proper preparation of plated desserts, cakes and torts, petit fours, and laminated dough. Studies the use and role of value added dessert items, and banquet and catering dessert requirements. Course fee of $750 for materials, equipment applies.

CA 2430 Menu Facilities Design and Beverage Management 3:3:0 On Sufficient Demand
* Prerequisite(s): CA 1310
Introduces menu design. Explores the relationship between menus and restaurant design for both production and service areas. Explains fundamental principles and techniques for planning menus for different operation styles. Provides practical experience and approaches in beverage management and service. Emphasizes legal and moral responsibilities of serving alcoholic beverages. Teaches understanding, service, and storage of beverages in full service restaurants.

CA 2450 Menu Design 2:2:0 Fall, Spring
* Prerequisite(s): CA 1310
Introduces menu design. Explores the relationship between menus and restaurant design for both production and service areas. Explains fundamental principles and techniques for planning menus for different operation styles.

CA 2750 Baking 3:2:4 On Sufficient Demand
* Prerequisite(s): Instructor Approval
Teaches intermediate baking skills. Includes lectures, demonstrations, and daily hands-on activities. Emphasizes quality products, methods/ techniques and formula development.

CA 2760 Pastry 5:3:6 On Sufficient Demand
* Prerequisite(s): Instructor approval
Combines patisserie skills learned in other culinary arts classes to develop advanced skills in the production of fine baked products. Stresses the use of standardized recipes and procedures. Includes cakes, tortes, pastries, chocolate, and desserts. Provides daily end-product critiquing. Course fee of $250 for materials applies.

CA 282R Culinary Arts Internship 1 to 8:1 to 8:0 Fall, Spring, Summer
* Prerequisite(s): Culinary Arts Institute Director Approval
Provides a transition from school to work where learned theory is applied to actual practice through a meaningful on-the-job experience commensurate with classroom instruction. May be repeated for up to eight hours toward graduation in the Culinary Arts degree. May be graded credit/no credit.

CA 296R Sanitation and Table Service 1:1:0 Fall, Spring, Summer
* Prerequisite(s): Instructor Approval
Introduces menu design. Explores the relationship between menus and restaurant design for both production and service areas. Explains fundamental principles and techniques for planning menus for different operation styles. Provides practical experience and approaches in beverage management and service. Emphasizes legal and moral responsibilities of serving alcoholic beverages. Teaches understanding, service, and storage of beverages in full service restaurants.

CA 298R ACF 1:5:2 Fall, Spring, Summer
For Culinary Arts students who are interested in participating with a national professional association (American Culinary Federation). Prepares students to participate in local, state, and national competitions. May require payment of membership dues. A maximum of four credits may be applied toward graduation.

CA 299R VICA 1:5:2 Fall, Spring
For Culinary Arts students who are interested in participating with a national vocational student organization (Vocational Industrial Clubs of America) that develops social awareness, civic responsibility, vocational and leadership skills through participation in educational, vocational, civic, recreational, and social activities. Prepares students to participate in local, state, and national competitions. May require payment of membership dues. A maximum of four credits may be applied toward graduation.

CA 481R Cooperative Work Experience 2 to 9:2 to 9:0 Fall, Spring, Summer
* Prerequisite(s): Approval of School of Business Career and Corporate Manager and University Advanced Standing
For upper division students working towards a Bachelor of Science Degree in Hospitality Management with an emphasis in Food and Beverage. Provides opportunities to apply classroom theory on the job. Students work in a restaurant kitchen while enrolled at the college. Credit is determined by the number of hours a student works during the semester. Completers meet individually set goals. May apply 6 credits toward a Bachelor of Science Degree in Hospitality Management. May be graded credit/no credit.

Cabinetry and Archit Woodwork (CAW)

CAW 100R Survey of Working with Wood 2:0:5 Fall, Spring
An introductory course for those interested in working with wood. Students will experience the satisfaction of making a piece of furniture with individualized help from the instructor. Includes "hands on" practice with woodworking equipment and instruction in methods to design, build, and finish a wood project. May be repeated up to four times for credit. Course fee of $15 for materials, equipment applies.

CAW 1100 Artistic Wood Design 2:1:4 On Sufficient Demand
Explores form, functions, and utility of wood products through students' design and creation of projects in the wood lab. Provides opportunities to design and create a unique piece of woodwork.

CAW 1130 Residential Cabinetry 4:1:9 Spring
Studies cabinetmaking methods including joinery, construction, gluing, and clamping. Includes building a set of residential cabinets. Introduces hand and portable electric and air tools. Covers tool care and minor repairs. Stresses functions, selection, maintenance, and safety. Course fee of $15 for materials, equipment applies.

CAW 1140 Millworking and Safety Shop I 5:0:15 Fall
A lab for CAW students. Teaches fundamentals of woodworking machines and standard millwork operations. Studies correct construction techniques. Safety is taught the first 15 hours and stressed throughout the course. Course fee of $25 for materials, equipment applies.

CAW 114A Millworking and Safety Shop I 2.5:0:7.5 Fall
Laboratory for Cabinetry students. Covers half of CAW 1140. Teaches fundamentals of woodworking machines and standard millwork operations. Studies correct construction techniques. Teaches safety the first 15 hours and stressed throughout the course. Course fee of $15 for materials, equipment applies.
CAW 114B
Millworking and Safety Shop I
2.5:0:7.5 Spring
Laboratory for Cabinetry students. Covers half of CAW 1140. Teaches fundamentals of woodworking machines and standard millwork operations. Studies correct construction techniques. Teaches safety the first 15 hours and stressed throughout the course. Course fee of $15 for materials, equipment applies.

CAW 1150
Design Drafting and Billing
3:3:0 Fall
For CAW majors and other interested community members. Teaches detailed drawing concepts, writing bills of materials, and material cost estimates. Uses all elements of good design.

CAW 1170
Finish Technology
2:2:1 Fall
For CAW majors and other interested community members. Studies types of stains, fillers and finishes, and techniques to properly prepare wood. Teaches hand and spray painting. Includes lab experience. Course fee of $15 for materials applies.

CAW 1210
Cabinetmaking Materials and Hardware
1:1:0 Fall
Emphasizes characteristics of wood, plastic laminates, plywood, and particle boards. Discusses proper use and residential hardware. Covers specifications, types, selection, and installation.

CAW 1240
Millworking Shop II
5:0:15 Spring
A second semester shop course for CAW students and interested community members. Teaches the design and construction of more difficult millworking projects. Studies advanced joints, finishing techniques, and fastening devices. Stresses safety. Course fee of $25 for materials, equipment applies.

CAW 124B
Millworking Shop II
2:0:6 On Sufficient Demand
A second semester shop course for CAW students and interested community members. Covers half of CAW 1240. Teaches the design and construction of more difficult Millworking projects. Studies advanced joints, finishing techniques, and fastening devices. Stresses safety. Course fee of $15 for materials, equipment applies.

CAW 1250
Drafting and Computer Applications for Cabinetmakers
4:4:0 Spring
Emphasizes design, purpose, function, appearance, materials, and construction for quality cabinetmaking. Covers efficient timesaving methods. Teaches material cost estimating. Teaches basic CNC software. Uses computer software Cabinet Vision & Master CAM. Course fee of $15 for materials, software applies. Lab access fee of $15 for computers applies.

CAW 140R
Millwork Technology
4:0:12 Spring
Teaches the techniques and skills necessary to construct quality furniture using current technology and processes. Stresses safety, machine and tool usage, joinery, and operations. Each semester the joinery and operations will differ and increase in difficulty depending on the required project. May be repeated for a maximum of 16 credits toward graduation.

CAW 2250
Computer Aided Manufacturing for Woodworking
4:3:3
Teaches how to use computer numerical controlled "CNC" machines to aid in the manufacturing of wood products. Includes machine setup, tooling, software usage, and parts production. Uses CAM software.

CAW 2300
Counter Top Technology
3:3:0 Spring
Explores methods used to produce different types of counter-tops. Studies high pressure laminates, solid wood, solid surface, tile, and stone. Includes field trips to counter-top shops. Course fee of $25 for materials, equipment applies.

CAW 2310
Cabinetry Math
2:2:0 Fall
Covers math used in cabinetmaking. Includes fractions, decimals, percents, interest, volume, and metrics. Studies special trade formulas. Students receive instruction through structured situations to cope with the special problems required in the woodworking industry.

CAW 2340
Millworking Shop III
5:0:15 Fall
Custom cabinetmaking shop. Practice in making and setting up custom shaper knives, doing custom flat and curved veneer and lamination work. Includes lathe work on the duplicator attachments. Completers should be able to enter the field as a cabinet and architectural woodwork trainee. Course fee of $25 for materials, equipment applies.

CAW 234A
Millworking Shop III
2:5:0:7.5 Fall
Custom cabinetmaking shop. Covers half of CAW 2340. Practice in making and setting up custom flat and curved veneer and lamination work. Includes lathe work on the duplicator attachments. Completers should be able to enter the field as a cabinet and architectural woodwork trainee. Course fee of $15 for materials, equipment applies.

CAW 234B
Millworking Shop III
2.5:0:7.5 Spring
Custom cabinetmaking shop. Covers half of CAW 2340. Practice in making and setting up custom shaper knives, doing custom flat and curved veneer and lamination work. Includes lathe work on the duplicator attachments. Completers should be able to enter the field as a cabinet and architectural woodwork trainee. Course fee of $15 for materials, equipment applies.

CAW 2430
Commercial Cabinetry Technology
4:1:9 Fall
Studies zoning, shop flow, and production set. Includes field trip to commercial cabinet shop. Teaches set up of machines used in the industry. Course fee of $15 for materials, equipment applies.

CAW 2440
Millworking Shop IV
5:0:15 Spring
A culminating architectural woodworking shop. Students build projects demonstrating advanced skills learned in previous shop courses. Course fee of $25 for materials, equipment applies.

CAW 244B
Millworking Shop IV
2:0:6 On Sufficient Demand
Culminates previous architectural woodworking courses. Covers half of CAW 2440. Requires advanced skills, learned previously, to complete projects. Course fee of $15 for materials, equipment applies.

CAW 2450
Machine Maintenance and Upkeep
2:2:0 Spring
Studies the maintenance and upkeep of machines and tools used in the woodworking industry. Focuses on sharpening, routine maintenance, machine set-up, adjustments, and diagnosing problems.

CAW 281R
Cooperative Work Experience
1 to 8:1 to 8:0 Fall, Spring
* Corequisite(s): CAW 285R the first time only
For CAW majors. Provides paid, on-the-job work experience in the student's major. Work experience, the related class, and enrollment are coordinated by the Cooperative Coordinator. Includes student, employer, and coordinator evaluations, on-site work visits, written assignments, and oral presentations. Provides experience in writing and completing individualized work objectives that improve present work performance. May be repeated twice for credit. May be graded credit/no credit.
Course Descriptions

CAW 285R Cooperative Correlated Class
1:1:0  Fall, Spring
* Corequisite(s): CAW 281R the first time only
For CAW majors. Identifies on-the-job problems and provides remediation of those problems through in-class discussion and study. Includes the study of identifying and maximizing service opportunities. Students register for this class with approval of the Cooperative Coordinator. Includes lectures, guest speakers, video tapes, role playing, case analysis, oral presentations, and written assignments. Completers should be better able to perform in their field of work or study. May be repeated twice for credit.

CAW 299R Skills USA
1:1:0  Spring
Supports and facilitates the goals and objectives of Skills USA pre-professional student organization that develops social awareness, civic, recreational, and social activities. Students may participate in local, state, and national contests. May be repeated for a maximum of 2 credits toward graduation.

Chemistry (CHEM)

CHEM 1010 PP
Introduction to Chemistry
3:3:0  Fall, Spring, Summer
* Prerequisite(s): MAT 1000 or MAT 1010 or MAT 1030 or MAT 1035 or MATH 1050 or MATH 1055 passed with a C- or better, or a placement score equivalent to MATH 1050 or QL 1900
* Corequisite(s): CHEM 1015 (optional)
Assumes no previous knowledge of chemistry. Presents the foundations of chemistry to students who need preparation for further study in chemistry as well as to students who only want to take an introductory course. Covers chemical measurements, atomic structure, formulas, chemical reactions and equations, chemical nomenclature, stoichiometry, molecules and chemical bonding, gas laws, liquids, solids, solutions, acids and bases.

CHEM 1015 PP
Introduction to Chemistry Lab
1:0:2  Spring
* Corequisite(s): CHEM 1010
A lab designed to accompany CHEM 1010. Provides practical experience to support chemistry foundational learning. Emphasizes chemical measurements, atomic structure, formulas, chemical reactions and equations, chemical nomenclature, stoichiometry, molecules and chemical bonding, gas laws, liquids, solids, solutions, acids and bases. Course lab fee of $31 applies.

CHEM 1110 PP
Elementary Chemistry for the Health Sciences
4:4:0  Fall, Spring, Summer
* Prerequisite(s): MAT 1000 or higher with a C- or better, or STAT 1040 with a C- or higher, or placement score into MATH 1050 or higher
Introduces the fundamentals of chemistry to students in the health sciences. Covers chemical measurements and calculations, atomic structure, chemical bonding, chemical reactions, states of matter, solutions, chemical equilibrium, acid-base systems, and introduces organic chemistry.

CHEM 1115 PP
Elementary Chemistry Laboratory
1:0:2  Fall, Spring, Summer
* Prerequisite(s) or Corequisite(s): CHEM 1010 or CHEM 1110
Introduces inorganic laboratory experiments including density, precipitation, determination of empirical formulas, gas laws and acid-base reactions. Course lab fee of $27 applies.

CHEM 1120 PP
Elementary Organic Bio-Chemistry
4:4:0  Spring
* Prerequisite(s): CHEM 1110
Introduces organic and biochemistry for non-chemistry majors entering nursing and other allied health fields such as medical technology, physical therapy, nutrition, and environmental technology. Studies the nomenclature of organic compounds, organic functional groups and their reactivities, stereochemistry, major biomolecules and their metabolism, enzymes, chemical communications, and chemistry of heredity. May also be used to prepare for organic chemistry (CHEM 2310 and 2320).

CHEM 1125 PP
Elementary Organic Bio-Chemistry Laboratory
1:0:3  Spring
* Prerequisite(s): CHEM 1110 and CHEM 1115
* Corequisite(s): CHEM 1120
An introductory organic bio-chemistry laboratory class for non-chemistry majors who need a laboratory to accompany Elementary Organic Bio-Chemistry (CHEM 1120). Explores identifications and reactions of organic functional groups and conducts experiments with biomolecules. Course Lab fee of $80 applies.

CHEM 1210 PP
Principles of Chemistry I
4:4:0  Fall, Spring, Summer
* Prerequisite(s): MATH 1050 or MATH 1055 or any higher MATH course with a C- or better, or appropriate placement scores for MATH 1060 or higher or QL 1900.
Also, it is highly recommended to have prior chemistry experience in high school or in CHEM 1010
* Corequisite(s): CHEM 1215
First semester of a full-year course primarily for students in the physical and biological sciences and engineering. Covers fundamentals of chemistry including atoms, molecules, reactions, stoichiometry, chemical bonding, thermochemistry, and gas laws.

CHEM 1215 PP
Principles of Chemistry I Laboratory
1:0:3  Fall, Spring, Summer
* Corequisite(s): CHEM 1210
Primarily for students in the physical and biological sciences and engineering. Introduces laboratory safety and chemical waste disposal practices. Teaches techniques of using standard laboratory equipment. Shows how to record laboratory data and prepare laboratory reports. Experiments follow topics in CHEM 1210. Course Lab fee of $26 applies.

CHEM 1220 PP
Principles of Chemistry II
4:4:0  Fall, Spring, Summer
* Prerequisite(s): CHEM 1210 with a grade of C- or higher
* Corequisite(s): CHEM 1225
Continuation of Chemistry 1210. Primarily for students in the physical and biological sciences and engineering. Covers intermolecular interactions, properties of solutions, kinetics, equilibria, thermodynamics, and electrochemistry.

CHEM 1225 PP
Principles of Chemistry II Laboratory
1:0:3  Fall, Spring, Summer
* Prerequisite(s): CHEM 1215 with a C- or better
* Corequisite(s): CHEM 1220
Is designed for the physical and biological sciences and engineering. Teaches intermolecular interactions, properties of solutions, kinetics, equilibria, thermodynamics, and electrochemistry. Follows CHEM 1215 and emphasizes topics from CHEM 1220. Course Lab fee of $42 applies.

CHEM 1250
Chemistry Cornerstone- Research and Careers
1:1:0  Fall
Explores scientific literature, culture and careers. Teaches college success strategies for STEM fields to support students interested in a STEM major.

CHEM 1260
Chemistry Cornerstone- Ethics
1:1:0  Spring
Explores scientific ethics. Teaches college success strategies for STEM fields to support students interested in a STEM major.

CHEM 2310
Organic Chemistry I
4:4:0  Fall, Spring, Summer
* Prerequisite(s): CHEM 1220 with a grade of C- or higher
* Corequisite(s): CHEM 2315
The first in a series of two organic chemistry classes for students majoring in science and for those interested in careers in medicine, dentistry, veterinary science, and pharmacy, who must complete two semesters of organic chemistry. Teaches bonding and structures of organic molecules. Explores the relationship between structure and reactivity of organic functional groups. Introduces the concepts of nomenclature, stereochemistry, and reaction mechanism.
CHEM 2315
Organic Chemistry I Laboratory
1:0:4  Fall, Spring, Summer
* Prerequisite(s): CHEM 2120, CHEM 2125
* Corequisite(s): CHEM 2310

The first of a series of two laboratory courses to accompany CHEM 2310 and 2320. For students majoring in science and those interested in careers in medicine, dentistry, veterinary science, and pharmacy. Introduces safety in organic chemistry lab and chemical waste disposal. Teaches basic separatory, purification, and analytical techniques in organic chemistry such as crystallization, melting points, distillation and chromatography. Introduces organic synthesis using simple organic reactions. Introduces natural product isolation. Course Lab fee of $88 applies.

CHEM 2320
Organic Chemistry II
4:4:0  Fall, Spring, Summer
* Prerequisite(s): CHEM 2310 & CHEM 2315 with a C- or higher
* Corequisite(s): CHEM 2325

Introduces spectroscopic techniques used in identification of organic compounds. Teaches carbon-carbon bond formation strategies. Introduces the concept of aromaticity, Teaches free radicals and their effects on environment and life. Surveys biologically important organic molecules such as carbohydrates, proteins, lipids, and nucleic acids.

CHEM 2325
Organic Chemistry II Laboratory
1:0:4  Fall, Spring, Summer
* Prerequisite(s): CHEM 2315
* Corequisite(s): CHEM 2320

The second of a series of two laboratory courses to accompany CHEM 2310 and 2320. For students majoring in science and those interested in careers in medicine, dentistry, veterinary science, and pharmacy. Provides hands-on experience in organic synthesis using a series of single and multistep transformations. Teaches identification of products of reactions using spectroscopic techniques. Explores biologically important organic molecules. Course Lab fee of $88 applies.

CHEM 3005
Analytical Chemistry Laboratory
2:0:6  Fall, Spring
* Prerequisite(s): CHEM 1220, CHEM 1225, and University Advanced Standing
* Corequisite(s): CHEM 3000

For Chemistry majors and others interested in the basic principles of chemical measurement. Laboratory companion to CHEM 3000. Involves conducting experiments in quantitative and qualitative analysis, including volumetric and gravimetric analysis. Also, students will conduct experiments in introductory instrumental methods, including experiments in spectrophotometry, electrochemistry, and chromatography. Course Lab fee of $146 applies.

CHEM 3020
Environmental Chemistry
3:3:0  Fall Odd Year
* Prerequisite(s): CHEM 1225 and University Advanced Standing

Studies the chemistry of soil, ground water, hazardous waste, and the atmosphere. Explores current environmental concerns and issues.

CHEM 3025
Environmental Chemistry Laboratory
1:0:3  On Sufficient Demand
* Prerequisite(s): CHEM 1225 and University Advanced Standing

Laboratory course which supports CHEM 3020, Environmental Chemistry. Introduces laboratory, sampling, and data analyses techniques used in environmental laboratories. Covers air sampling, and soil and water analysis using a variety of instruments and techniques.

CHEM 3060
Physical Chemistry I
4:4:0  Fall
* Prerequisite(s): CHEM 1250, CHEM 1260, PHYS 2220, and University Advanced Standing
* Corequisite(s): CHEM 3065

Reviews major trends across the periodic table. Surveys basic structure, bonding, and oxidation states of the elements. Introduces inorganic stereochemistry including coordination compounds.

CHEM 3065
Physical Chemistry I Lab
1:0:4  Fall
* Prerequisite(s): University Advanced Standing
* Corequisite(s): CHEM 3060

Demonstrates physical chemistry experiments exploring principles and concepts introduced in CHEM 3060. Teaches design and execution of physical chemistry experiments and interpretation of the observations, as well as application of physical chemistry to solving physical chemistry problems. Course Lab fee of $75 applies.

CHEM 3070
Physical Chemistry II
4:4:0  Spring
* Prerequisite(s): CHEM 3060, MATH 2210 and University Advanced Standing
* Corequisite(s): CHEM 3075

Provides an advanced discussion of quantum mechanics, including solutions to the Schrodinger wave equation. Connects quantum mechanics with observables, including spectroscopy.

CHEM 3075
Physical Chemistry II Lab
1:0:4  Spring
* Prerequisite(s): CHEM 3060, CHEM 3065, and University Advanced Standing
* Corequisite(s): CHEM 3070

Demonstrates physical chemistry experiments exploring principles and concepts. Provides opportunity to design and execute physical chemistry experiments and interpretation of the observations. Applies physical chemistry to solving physical chemistry problems.

CHEM 3080
Physical Chemistry III
3:3:0  On Sufficient Demand
* Prerequisite(s): CHEM 3070 and University Advanced Standing

Teaches the fundamentals of statistical mechanics and chemical kinetics, as well as the fundamentals of the specialized topics of the physical chemistry of chemical symmetry, computational chemistry, NMR spectroscopy, and electrochemistry.

CHEM 3100
Advanced Inorganic Chemistry
4:4:0  Fall, Spring
* Prerequisite(s): University Advanced Standing
* Prerequisite(s) or Corequisite(s): CHEM 3000

Reviews major trends across the periodic table. Surveys basic structure, bonding, and oxidation states of the elements. Introduces inorganic stereochemistry including coordination compounds.

CHEM 3115
Advanced Inorganic Chemistry Lab
1:0:4  Fall, Spring
* Prerequisite(s): CHEM 3005 and University Advanced Standing
* Corequisite(s): CHEM 3100

Explores principles and concepts introduced in CHEM 3100. Teaches design and execution of inorganic chemistry experiments and interpretation of the observations. Uses application of inorganic chemistry to solving inorganic chemistry problems. Course Lab fee of $130 applies.
CHEM 3300 (Cross-listed with: BTEC 3300) Biomolecular Modeling and Simulations 4:4:0 Spring * Prerequisite(s): CHEM 3600 or BIOL 3600, and University Advanced Standing

Introduces students to the field of molecular modeling and simulations and to the wide range of problems that can be tackled using computational methods. Focuses on biomolecular simulations and computer-aided drug discovery. Emphasizes the connection between structure, dynamics, and function. Teaches application of algorithmic thinking to solving complex problems. Develops practical skills needed to perform simulations and analyze the results. Develops understanding of the inherent approximations and limitations of the methods for adequate assessment of modeling results. Covers topics such as molecular visualization and rendering, molecular dynamics simulations, and computer-aided drug discovery through virtual screening and small molecule docking.

CHEM 3600 (Cross-listed with: BIOL 3600) Biological Chemistry 3:3:0 Fall, Spring, Summer

* Prerequisite(s): University Advanced Standing
* Corequisite(s): CHEM 2320


CHEM 3605 (Cross-listed with: BIOL 3605) Biological Chemistry Lab 1:0:4 On Sufficient Demand

* Prerequisite(s): University Advanced Standing
* Corequisite(s): BIOL 3600

Introduces laboratory techniques in biochemistry. Studies methods and theory behind purification of proteins and nucleic acids including chromatography and electrophoresis. Uses methods in assessing enzyme activity and kinetics and protein structure analysis. Includes analysis and manipulation of DNA and RNA. Course Lab fee of $145 applies.

CHEM 3620 (Cross-listed with: BIOL 3620) Biological Chemistry II 3:3:0 Spring

* Prerequisite(s): (CHEM 3600 or BIOL 3600) and University Advanced Standing

Is a continuation of CHEM 3600. Teaches in-depth the biochemistry of molecular and cell biology processes. Explores the topics of molecular information flow and signaling. Examines current understanding in biochemical methods and ideas beyond those discussed in Biochem I.

CHEM 3800 (Cross-listed with: ENVT 3800, PHYS 3800) Energy Use on Earth 3:3:0 Fall

* Prerequisite(s): (PHYS 1010 or PHSC 1000 or CHEM 1010 or GEO 1010 or GEO 2040 or METO 1010) and (MATH 1050 or MATH 1055) and University Advanced Standing

Covers the science of energy production and consumption. Quantitatively analyzes various methods of energy production, distribution, and end use in all sectors of our society, including transportation, residential living, and industry. Examines the impacts of our energy consumption on the environment and prospects for alternative energy sources. Intended for science majors interested in energy use in society or in an energy related career, and for students in other majors who feel that a technical understanding of energy use will help them to understand and mitigate its impact in our society.

CHEM 4000 Instrumental Analysis WE 2:2:0 Spring

* Prerequisite(s): CHEM 3000, and University Advanced Standing
* Corequisite(s): CHEM 4005

Covers modern instrumental methods and basic principles of instrumentation. Includes spectrophotometric and chromatographic analysis.

CHEM 4005 Instrumental Analysis Laboratory 2:0:6 Spring

* Prerequisite(s): CHEM 3000, CHEM 2325, and University Advanced Standing
* Corequisite(s): CHEM 4000

Experiments in selected areas of instrumental methods of analysis. Covers both quantitative and qualitative methods of analysis. Includes introductory laboratory exercises and laboratories using advanced sample preparation and instrumental analysis techniques. Involves the independent creation and implementation of an advanced laboratory exercise. Course Lab fee of $333 applies.

CHEM 4030 Radiochemistry 3:3:0 Fall Even Year

* Prerequisite(s): CHEM 1220, MATH 1210, and University Advanced Standing

Introduces nuclear and radiochemistry, stressing the fundamentals of nuclear structure, systematics of nuclear decay, the detection and measurement of radiation, radiation protection, and the role of nuclear chemistry in medical, environmental and scientific applications. Discusses nuclear fuel cycles and nuclear waste problems.

CHEM 4200 (Cross-listed with: BIOL 4200, GEO 4200, PHYS 4200) Teaching Methods in Science 3:2:2 Fall, Spring

* Prerequisite(s): Acceptance into secondary education program, senior-level standing, instructor approval, and University Advanced Standing

Examines objectives, instructional methods and curriculum for teaching science in the secondary school. Includes developing, adapting, evaluating, and using strategies and materials for teaching biological and physical sciences, appropriate both to the special needs of the learners and the special characteristics of science discipline.

CHEM 4600 Structure Determination 3:3:0 Fall

* Prerequisite(s): CHEM 2320, and University Advanced Standing
* Corequisite(s): CHEM 4605
* Prerequisite(s) or Corequisite(s): CHEM 3060

Explores integrated topics in organic, inorganic, physical, solid-state, and biochemistry using advanced theory. Enables hands-on use and manipulation of state-of-the-art instrumentation. Examines primary chemistry literature, and involves substantial problem solving using spectroscopic and spectrometric data.

CHEM 4605 Structure Determination Laboratory 1:0:4 Fall

* Prerequisite(s): CHEM 2320 and University Advanced Standing
* Corequisite(s): CHEM 4600

Exposes students to integrated topics in organic, inorganic, physical, and biochemistry using advanced theory. Enables hands-on use and manipulation of state-of-the art instrumentation. Examines primary and secondary literature, and involves substantial problem solving using spectroscopic and spectrometric data. Taken as a corequisite with CHEM 4600. Course lab fee of $204 applies.

CHEM 4800 Pharmacology 3:3:0 Fall

* Prerequisite(s): CHEM 3600 or BIOL 3600 and University Advanced Standing

Explores the science behind pharmacological therapies. Examines general considerations such as pharmacokinetics, drug metabolism, and toxicology. Surveys focused topics including drugs and drug targets for a wide variety of diseases.

CHEM 482R Chemistry Internship 1 to 4:1 to 4:0 Fall, Spring, Summer

* Prerequisite(s): CHEM 2320, a minimum GPA of 3.0, Departmental approval of the internship proposal, and University Advanced Standing

Provides supervised, practical, and research experience for students preparing for careers in chemistry. May be repeated for a maximum of 6 credit hours as per school standards. May be graded credit/no credit.
CHEM 489R
Undergraduate Research in Chemistry
1 to 4:0:3 to 9  Fall, Spring, Summer
* Prerequisite(s): Departmental approval and University Advanced Standing

Conducts research on a project determined by the student jointly with a chemistry faculty and approved by the Chemistry Department Chair. Emphasizes experimental technique, data collection and analysis, and preparation of research for presentation to an audience of peers. May be repeated for a maximum of 6 credits toward graduation.

CHEM 491R
Advanced Topics in Inorganic Chemistry
3:3:0  On Sufficient Demand
* Prerequisite(s): CHEM 1220, instructor's permission, and University Advanced Standing; CHEM 3100 or CHEM 3600 recommended

Examines advanced and current topics of inorganic chemistry including bioinorganic chemistry, symmetry and molecular orbital theory, and the descriptive chemistry of main-group compounds. Varies from semester to semester. Offered on demand. May be repeated for a maximum of 9 credits.

CHEM 4920
Chemistry Capstone- Literature/Seminar
1:1:0  On Sufficient Demand
* Prerequisite(s): CHEM 2320 with a C- or higher and University Advanced Standing; ENG 2100 highly recommended

Engages in current chemistry topics. Enables familiarity with chemistry literature resources, teaches chemistry research and design, and facilitates preparation for further education and employment in chemistry-related fields. Focuses on current topics in chemistry and on chemistry literature.

CHEM 4930
Chemistry Capstone- Ethics/Seminar
1:1:0  On Sufficient Demand
* Prerequisite(s): CHEM 2320 with a C- or higher and University Advanced Standing

Teaches chemistry research and design for further education and employment in chemistry-related fields. Focuses on scientific ethics, current topics in chemistry, chemistry literature and formal report writing based on American Chemical Society guidelines.

CHEM 495R
Advanced Topics in Organic Chemistry
3:3:0  On Sufficient Demand
* Prerequisite(s): CHEM 2310, CHEM 2320, Instructor approval, and University Advanced Standing

For students majoring in Chemistry. Varies from semester to semester. May be repeated for a maximum of 9 credits. Topics include organic synthesis, reaction mechanisms, and identification of organic compounds.

CHEM 496R
Special Topics in Chemistry
1 to 4:1 to 4:0 to 9  On Sufficient Demand
* Prerequisite(s): CHEM 2320, Junior or Senior standing, instructor approval, and University Advanced Standing

Explores special topics in chemistry. Topics vary depending on student demand and current topics of significance in chemistry. May be repeated for a maximum of 8 credits toward graduation.

CHEM 499R
Independent Study and Research
1 to 4:0:3 to 12  Fall, Spring, Summer
* Prerequisite(s): Instructor approval and University Advanced Standing

Uses independent study on selected topics and conducting experiments in the same topic. Provides guidance by a faculty member. May be taken for a maximum of 4 credits.

CHEM 525R
Advanced Topics for Chemistry Teachers
1 to 5:1 to 5:0 to 10  Summer
* Prerequisite(s): Departmental Approval

For licensed teachers or teachers seeking to recertify their chemistry endorsement from the Utah State Office of Education. Teaches principles of chemistry and pedagogy of teaching chemistry for teachers in public or private schools. Emphasizes correlation with the Utah Core Curriculum, the National Science Education Standards, and the Benchmarks of Project 2061. Topics will vary.

CHIN 1010
Beginning Chinese I
4:4:1  Fall, Spring, Summer

Studies Mandarin. Emphasizes oral proficiency in pronunciation and basic conversation as well as traditional grammar concepts. Focuses on receptive language learning, then verbally-expressive language learning. Lab access fee of $10 applies.

CHIN 1020
Beginning Chinese II
4:4:1  Fall, Spring, Summer

* Prerequisite(s): Students need equivalent knowledge of CHIN 1010

Continues the same mode of learning as CHIN 1010 with renewed emphasis on conversational skills. Introduces characters and elementary calligraphy, reading and writing. Lab access fee of $10 applies.

CHIN 115R
Chinese Conversation I
1:1:0  Fall, Spring

* Prerequisite(s): Students should have equivalent knowledge of CHIN 1020

Offers lower division / novice Chinese speakers opportunities to enhance their speaking proficiency in the target language by focusing on oral verbal production. Teaches how to improve authentic pronunciation, reduce errors in authenticity of language structure, generate thought in the target language spontaneously as a substitute for translation, sharpen listening comprehension, and develop conversational strategies such as circumlocution and managing a conversation with useful expressions for starting a conversation, gaining time to think, helping the other speaker, seeking agreement, etc. Contrasts with all other first year courses which must strive to produce mastery of the whole range of language acquisition components, including writing, grammar, etc. Facilitates lowering the affective filter when conversing in the target language by increasing the frequency of speech opportunities and defusing concern for such matters as spelling, etc. Increases mastery of lexical items through increased frequency of oral usage. May be repeated for a maximum of 3 credits toward graduation.

CHIN 2000
Chinese Character Studies
2:2:0  Fall, Spring

* Prerequisite(s): Basic Chinese speaking ability

Prepares students who have oral fluency in Chinese to read and write Chinese characters, including skills in sentence and paragraph writing according to Chinese language norms in order to advance to 3000 level courses.

CHIN 2010
Intermediate Chinese I
4:4:1  Fall, Spring

* Prerequisite(s): Students need equivalent knowledge of CHIN 1020

Emphasizes increased communicative ability as well as grammatical accuracy; adds more complex, literary grammatical structures; focuses on reading of basic 600 characters and writing of basic 300 characters. Uses digitale weave (mixture of English and Chinese) and character-romanization mix to ease learning of characters. Lab access fee of $10 applies.

CHIN 202G
Intermediate Chinese II
4:4:0  Fall, Spring

* Prerequisite(s): Students need equivalent knowledge of CHIN 2010

Emphasizes increased communicative ability as well as grammatical accuracy; adds more complex, literary grammatical structures, as well as discussion of contemporary cultural and political themes. Includes reading of basic 1000 characters and writing of basic 450-600 characters. Uses digitale weave (mixture of English and Chinese) and character-romanization mix to ease learning of characters. Lab access fee of $10 applies.

CHIN 215R
Chinese Conversation II
1:1:0  Fall, Spring

* Prerequisite(s): Basic Chinese speaking ability

Offer lower division / novice Chinese speakers opportunities to enhance their speaking proficiency in the target language by focusing on oral verbal production. Teaches how to improve authentic pronunciation, reduce errors in authenticity of language structure, generate thought in the target language spontaneously as a substitute for translation, sharpen listening comprehension, and develop conversational strategies such as circumlocution and managing a conversation with useful expressions for starting a conversation, gaining time to think, helping the other speaker, seeking agreement, etc. Contrasts with all other first year courses which must strive to produce mastery of the whole range of language acquisition components, including writing, grammar, etc. Facilitates lowering the affective filter when conversing in the target language by increasing the frequency of speech opportunities and defusing concern for such matters as spelling, etc. Increases mastery of lexical items through increased frequency of oral usage. May be repeated for a maximum of 3 credits toward graduation.
CHIN 3030 Chinese Composition and Conversation 3:3:0 Fall Odd Year
* Prerequisite(s): CHIN 202G or equivalent experience or instructor approval and University Advanced Standing
Advances mastery of Chinese grammar while emphasizing production skills of speaking and writing. Expands reading and listening skills to a lesser degree. Reviews and extends lexical depth. Allows students without experience living in a Chinese immersion setting to advance in their communication skills to where they may participate more comfortably in future upper division courses with other students who do have immersion experience. Offers a variety of topics presented in a variety of media as content basis for real communicative practice in Chinese. Conducts all course work primarily in Chinese. Chinese character learning prepares students advanced reading in Chinese.

CHIN 3050 Advanced Chinese 3:3:1 Fall, Spring, Summer
* Prerequisite(s): It is recommended that students have passed CHIN 202G, have had one year residency in a Chinese-speaking region, or instructor approval.
* Prerequisite(s) or Corequisite(s): CHIN 2000
Designed for non-native Mandarin speakers who, as a result of foreign residency or similar exposure to the language, have attained a good mastery of basic Mandarin Chinese. Sharpens students' speaking, reading, and writing skills through advanced Chinese readings about culture, civilization, and society, with an emphasis on vocabulary, grammar, and syntax. Enhances students' cultural knowledge and awareness through a variety of carefully designed practices and activities. Taught predominantly in Chinese.

CHIN 3118 Chinese Popular Culture 3:3:0 Fall
* Prerequisite(s): High school students have to pass the AP Chinese Language test with a score of 3 or above.
This course is part of the State of Utah Chinese Bridge Program, and it will be taught only in high schools for high school students. Not to be taught on college campus for university students. Explores the role that current film, media, and entertainment play in the Chinese-speaking world and exposes students to the historical and cultural perspectives presented through these media. This course is instructed in Chinese.

CHIN 3200 Business Chinese I 3:3:0 Fall
* Prerequisite(s): CHIN 3050 and University Advanced Standing
Prepares students to take the Business Chinese Test (BCT), a state-level standardized test designed to assess the Chinese proficiency of non-native speakers engaged in business activities. Explores how students can effectively and respectfully pursue business activities with Chinese companies within the framework of Chinese culture, sponsored by Office of Chinese Language Council International. Taught predominantly in Chinese.

CHIN 351G Chinese Culture and Civilization 3:3:0 Fall
* Prerequisite(s): CHIN 3050 or equivalent and University Advanced Standing
Explores chronologically the evolution and development of Chinese culture and civilization, and a multitude of aspects that construct Chinese national identity and civilization. Examines modern and contemporary issues, cultural, ethnic, historic, social and economic development of China, as well as historical prosperity and decline, and independence from and interdependence with other nations. Conducted entirely in Mandarin Chinese, including presentations and class instructions.

CHIN 3116 Exploring China-Past/Present and You 3:3:0 Fall
* Prerequisite(s): High school students have to pass the AP Chinese Language or AP Chinese Literature & Culture test with a 3 or higher
This course is part of the State of Utah Chinese Bridge Program and it will be taught only in high schools and for high school students. Not to be taught on college campus for university students. Explores Chinese history and traditional cultural values, and connects their influences on the modern Chinese-speaking world. Conveys knowledge and language skills to discuss both ancient and modern Chinese culture and society.

CHIN 3117 Chinese Legacies: tradition and modernity 3:3:0 Fall
* Prerequisite(s): High school students must pass the AP Language or AP Chinese Language & Culture test with a grade of “3” or higher
This course is part of the State of Utah Chinese Bridge Program and it will be taught only in high schools and for high school students. Not to be taught on college campus for university students. Explores the legacies of Chinese culture and tradition and its impacts on and relations to the contemporary societal issues. Emphasizes literary analysis and criticism. Develops knowledge of literary history, skills in interpreting literary texts, and deepens understanding of the Chinese language.

CHIN 4100 Translation and Interpretation 3:3:0 Spring
* Prerequisite(s): CHIN 4050 and University Advanced Standing
Introduces translation as a discipline. Discusses basic theory, principles and tools of translation. Employs the tools of translation: dictionaries, glossaries, grammars and computerized resources. Extensive practice of translation and interpretation from English to Chinese and from Chinese to English.

CHIN 4200 Business Chinese II 3:3:0 Spring
* Prerequisite(s): CHIN 3200 and University Advanced Standing
Builds on the content of CHIN 3200. Teaches students business Chinese with more complicated grammatical and rhetorical structures. Studies business Chinese terms and expressions, subtle business Chinese culture and customs practiced in Chinese business society, and the more advanced Chinese business language and culture in Chinese societal settings. Prepares students to effectively and respectfully pursue business activities with Chinese companies within the framework of Chinese culture through a better understanding of the language, culture and society. Strengthens and prepares students to take the Business Chinese Test (BCT), a state-level standardized test designed to assess the Chinese proficiency of non-native speakers engaged in business activities. Taught predominately in Chinese.

CHIN 4500 Advanced Writing in Chinese 3:2:3 Spring Even Year
* Prerequisite(s): CHIN 3050 or CHIN 4050 and University Advanced Standing
Designed to improve students' accuracy, clarity and use of appropriate styles, forms and vocabularies when writing in Chinese. Informs students of the significant roles played by styles, content and intentionally of discourse in their writing, and focuses on improving their skills in addressing the requirements of those various roles in different contexts.

CHIN 490R Special Topics in Chinese Language and Literacy 3:3:0 Fall Even Year
* Prerequisite(s): CHIN 3050, University Advanced Standing
Presents selected topics in Chinese language and literacy (grammar, literacy, and culture). Covers topics such as "Practical Modern Chinese Grammar" or "Modern Chinese Literacy and Sentence Structure". Studies the main points in Modern Chinese language, literacy and their relations to Chinese society, history and culture. Projects and evaluation will vary according to the topic. May be repeated for a maximum of 9 credits toward graduation.
Chinese Studies (CHST)

CHST 200G
Introduction to Chinese Studies
3:0
Spring Odd Year
* Prerequisite(s): ENGL 1010 or ENGH 1005
Taught in English. Introduces Chinese Language and Culture to interested students and gives them an overview about the minor study program. Includes an introduction into the characteristics of Chinese script by memorizing a few everyday expressions in Chinese. Introduces Chinese history, economy, society, politics, culture and popular culture, and ethics including philosophy, religions, beliefs, film, literature, contemporary discourses.

CHST 362G
Traditional Chinese History
3:0
Summer Odd Year
* Prerequisite(s): ENGL 2010 and University Advanced Standing
Introduces the student to the broad outlines of the cultural history of traditional China from some of the earliest historical records (about 1200 BCE) up through the late imperial period (about 1900 CE). Taught in English.

CHST 363G
Modern Chinese History
3:0
Summer Even Year
* Prerequisite(s): ENGL 2010 and University Advanced Standing
Introduces the student to the broad outlines of Chinese Civilization from the last Imperial Dynasty until the present day. Taught in English.

CHST 373G
Classical Chinese Literature
3:0
Summer Odd Year
* Prerequisite(s): ENGL 2010 and University Advanced Standing
Studies classical Chinese literature within the historical, cultural, thematic, and aesthetic context. Taught in English.

CHST 375G
Modern Chinese Literature
3:0
Spring Even Year
* Prerequisite(s): ENGL 2010 and University Advanced Standing
Studies modern Chinese literature within the historical, cultural, thematic, and aesthetic context. Taught in English.

CHST 416G
Chinese Culture and Film
3:0
Fall Odd Year
* Prerequisite(s): ENGL 2010 and University Advanced Standing
Examines a selection of films from internationally acclaimed Chinese film directors.

CINÉ 2150 (Cross-listed with: ENGL 2150)
Critical Introduction to Cinema Studies
3:0
Spring
* Prerequisite(s): ENGL 2010
Studies film as an aesthetic and cultural medium. Teaches the fundamentals of film, including narrative form, mise-en-scène, cinematography, editing, sound, and non-narrative forms. Teaches film analysis, including ideological approaches, and considers film as a cultural institution. May be delivered hybrid.

CINÉ 217G (Cross-listed with: COMM 217G, ENGL 217G)
Race Class and Gender in U S Cinema
3:0
Fall
* Prerequisite(s): ENGL 1010 or ENGL 1005
Examines major theoretical approaches to the screen arts. Explores how cinema and television reflect and are created by historical and contemporary cultural contexts. Includes the study of various approaches such as fan studies, spectatorship, stars, authorship, genre, long-form narrative and production. Includes lecture, film and media screenings, and critical discussions of assigned readings.

CINÉ 2311 (Cross-listed with: THEA 2311)
Film History I PF
3:0
Spring
Examines major theoretical approaches to the screen arts. Explores how cinema and television reflect and are created by historical and contemporary cultural contexts. Includes the study of various approaches such as fan studies, spectatorship, stars, authorship, genre, long-form narrative and production. Includes lecture, film and media screenings, and critical discussions of assigned readings.

CINÉ 234R (Cross-listed with: THEA 234R)
Special Topics in Cinema Studies
3:2:2
On Sufficient Demand
* Prerequisite(s) or Corequisite(s): THEA1023 or CINE2150
Focuses upon a particular genre, director, or film movement. May be repeated once for a total of 6 credits toward graduation.

CINÉ 312R (Cross-listed with: LANG 312R)
National Cinema History
3:0
Fall, Spring
* Prerequisite(s): ENGL 2010 and University Advanced Standing
Covers a single national cinema tradition from the early days of film to the present. Explores representative films from a nation’s cinematic chronology, considering major themes, movements, controversies, and artists. Considers social and political contexts as related to the national film output. May be repeated for a maximum of 9 credits toward graduation.

CINÉ 3150 (Cross-listed with: COMM 3150, ENGL 3150)
Cinema and Television Theory
3:0
Spring
* Prerequisite(s): (CINE 2150 or ENGL 2150) and University Advanced Standing
Explores how cinema and television reflect and are created by historical and contemporary cultural contexts. Includes the study of various approaches such as fan studies, spectatorship, stars, authorship, genre, long-form narrative and production. Includes lecture, film and media screenings, and critical discussions of assigned readings.
Course Descriptions

CINE 416R (Cross-listed with: ENGL 416R, THEA 416R)
Special Topics in Film Studies
3:0 3:0
On Sufficient Demand
* Prerequisite(s): (ENGL 2150 or CINE 2150 or THEA 1023) and University Advanced Standing
Covers cinema directors, genre, theory, and social change on a rotating basis. Explores course focus, defines terminology involved, then studies evolution and/or specific texts or contexts, and considers theoretical discourse. May be repeated for a maximum of 6 credits toward graduation. Some films screened may carry an "R" rating. Course fee of $40 for support applies.

CINE 418R
Sundance Documentary Film
3:0 3:0
Spring
* Prerequisite(s): University Advanced Standing
* Prerequisite(s) or Corequisite(s): ENGL 2150 or CINE 2150
Covers history of documentary film, studies current modes and models of documentary film, includes attending Sundance film festival documentaries. May be repeated for a maximum of 6 credits toward graduation. Some films screened may carry an "R" rating, or may not be rated but would carry an "R" rating. Course fee of $50 for support applies.

Civil Engineering (CIVE)

CIVE 3010
Introduction to Transportation Engineering
3:0 3:0
Fall
* Prerequisite(s): EGD 1040, University Advanced Standing and (Formal Acceptance into the Civil Engineering Program or Departmental Approval)
* Prerequisite(s) or Corequisite(s): ENGR 2450
Covers analysis and design of transportation systems and their components. Introduces technological, economic, and social aspects of transportation. Covers economic considerations, role of public policy, system planning, design, management, traffic flow models, intersection control, network analysis, and environmental impact. Lab access fee of $45 applies.

CIVE 3130
Structural Analysis
3:0 3:0
Fall
* Prerequisite(s): ENGR 2140, University Advanced Standing, and (Formal Acceptance into the Civil Engineering Program or Departmental Approval)
Focuses on analysis of determinate and indeterminate structural systems. Covers flexibility and moment distribution methods. Introduces design load distribution and load guidelines. Lab access fee of $45 applies. Canvas Course Mats $105/Pearson applies.

CIVE 3140
Structural Steel Design
3:0 3:0
Spring
* Prerequisite(s): CIVE 3130, University Advanced Standing, and (Formal Acceptance into the Civil Engineering Program or Departmental Approval)
Focuses on design of structural steel components of a building. Covers tension members, compression members, beams, and connections using Load and Resistance Factor Design (LRFD). Includes a design component. Lab access fee of $45 applies.

CIVE 3150
Reinforced Concrete Design
3:0 3:0
Spring
* Prerequisite(s): CIVE 3130, University Advanced Standing, and (Formal Acceptance into the Civil Engineering Program or Departmental Approval)
Focuses on design of reinforced concrete components of a structure. Covers beams, columns, slabs, and foundations according to the American Concrete Institute (ACI) 318 building code requirements. Includes a design component. Lab access fee of $45 applies.

CIVE 3210
Geotechnical Engineering
3:0 3:0
Spring
* Prerequisite(s): ENGR 2140, University Advanced Standing, and (Formal Acceptance into the Civil Engineering Program or Departmental Approval)
Focuses on the study of soil properties, classifications, and behavior. Applies principles of mechanics to soil as an engineering material. Introduces consolidation and compaction theories, effective stresses, shear strength, and earth pressure and slope stability. Includes a design component. Lab access fee of $45 applies.

CIVE 3320
Hydraulics and Hydrology
3:0 3:0
Spring
* Prerequisite(s): ENGR 2450, ME 3310, University Advanced Standing, and (Formal Acceptance into the Civil Engineering Program or Departmental Approval)
Focuses on concepts of hydraulics such as pipe and open channel flows. Covers weather patterns, precipitation measurement, distribution, and runoff. Introduces storm hydrograph and peak flow analysis, flood design, reservoir and channel routing. Includes a design component. Lab access fee of $45 applies.

CIVE 3335
Civil Engineering Experimentation I
2:0:6 2:0:6
Spring
* Prerequisite(s): ME 3310, University Advanced Standing, and (Formal Acceptance into the Civil Engineering Program or Departmental Approval)
* Prerequisite(s) or Corequisite(s): CIVE 3320
Covers temperature, pressure, and flow measurement, along with calibration of thermal/flow sensors in a lab setting. Focuses on experiments to investigate various phenomena in fluid flow, hydraulics, and hydrology. Investigates the performance of pumps. Includes a writing component. Lab access fee of $45 applies.

CIVE 3610
Environmental Engineering
3:0 3:0
Fall
* Prerequisite(s): CHEM 1210, MATH 2250, University Advanced Standing, and (Formal Acceptance into the Civil Engineering Program or Departmental Approval)
Introduces the fundamentals of environmental engineering. Focuses on chemical, biological, and physical principles dealing with water, waste water, and solid waste management. Covers analyses of air, surface, and ground water quality. Includes a design component. Lab access fee of $45 applies.

CIVE 4010
Traffic Engineering
3:0 3:0
Fall
* Prerequisite(s): CIVE 3010 and University Advanced Standing
Introduces elements of traffic engineering including: road use, traffic flow theories, traffic control devices, traffic data collection. Covers freeways and rural highways and principles of intersecting signalization, service level and capacity. Includes a design component. Lab access fee of $45 applies.

CIVE 4020
Highway Planning and Design
3:0 3:0
Spring
* Prerequisite(s): CIVE 3010 and University Advanced Standing
Covers classification of highways. Focuses on the process involved in design of highways and their elements. Introduces design of highway cross sections, intersections, and interchanges. Covers design of vertical and horizontal alignment and establishment of sight distances. Includes a design component. Lab access fee of $45 applies.

CIVE 4135
Civil Engineering Experimentation II
2:0:6 2:0:6
Fall
* Prerequisite(s): CIVE 3210 and University Advanced Standing
Focuses on testing of civil engineering materials such as soil, asphalt, concrete, and metals related to geotechnical, pavement, and structural aspects of civil engineering. This is a laboratory course with a writing component. Course Lab fee of $25 applies. Lab access fee of $45 applies.

CIVE 4210
Foundation Design
3:0 3:0
Fall
* Prerequisite(s): CIVE 3210 and University Advanced Standing
Covers foundation classifications. Applies fundamentals of soil mechanics to analysis and design of soil structure systems. Covers shallow and deep foundations, piers and caissons, and retaining structures. Includes a design component. Lab access fee of $45 applies.

CIVE 4310
Storm Water Management
3:0 3:0
Spring
* Prerequisite(s): ME 3310 and University Advanced Standing
Applies fluid mechanics and hydrology principles to the analysis and design of storm water management facilities. Covers environmental issues related to storm water management. Includes a design component. Lab access fee of $45 applies.

CIVE 4320
Open Channel Flow
3:0 3:0
Fall
* Prerequisite(s): CIVE 3320 and University Advanced Standing
Covers analysis of open channel flow systems. Introduces natural and designed channels, steady and unsteady flows, uniform and non-uniform flows and flow transitions. Includes lectures and design projects. Lab access fee of $45 applies.
CIVE 4510
Civil Engineering Seminar
1:0:1 Fall
* Prerequisite(s): University Advanced Standing
* Prerequisite(s): CIVE 4810
Introduces various civil engineering careers and related industries. Emphasizes the importance of life-long learning and active participation in professional societies and communities through lectures given by practicing engineers using their own experiences. Introduces various engineering codes of ethics. Intended as a culminating seminar for graduating seniors to prepare for their engineering careers. Lab access fee of $45 applies.

CIVE 4610
Water and Wastewater
3:3:0 Spring
* Prerequisite(s): CIVE 3320 and University Advanced Standing
introduces municipal water and wastewater treatment and distribution practices. Applies physical, chemical, and biological principles to design and operation of water and wastewater distribution systems. Lab access fee of $45 applies.

CIVE 4810
Civil Engineering Capstone I
3:3:0 Fall
* Prerequisite(s): University Advanced Standing, Formal Acceptance into Civil Engineering Program, and Department Approval
Serves as a comprehensive two-semester civil engineering design experience with practical constraints. Focuses on applying civil engineering principles and the design process along with economic analysis and project management methods to a real-world project, and present the findings to other engineers and the public. Capstone I and II must be taken in consecutive semesters. Lab access fee of $45 applies.

CIVE 481R
Internship
1 to 3:1 to 3:0 Fall, Spring, Summer
* Prerequisite(s): Matriculation to civil engineering program, Instructor Approval, and University Advanced Standing
Provides opportunities to apply classroom theory while students work as employees in a job that relates to their careers. Students communicate regularly with a coordinator. Credit is determined by the number of hours a student works during the semester and completion of individually set goals. May apply for up to 3 credits; may be graded as credit/no credit.

CIVE 4820
Civil Engineering Capstone II
3:3:0 Spring
* Prerequisite(s): CIVE 4810 and University Advanced Standing
Serves as a second semester of the two-semester design experience from conception to modeling or prototype. Focuses on applying civil engineering principles and the design process along with economic analysis and project management methods to a real-world project, and present the findings to other engineers and the public. Capstone I and II must be taken in consecutive semesters. Lab access fee of $45 applies.

CIVE 490R
Advanced Current Topics in Civil Engineering
1 to 3:1 to 3:0 Fall, Spring
* Prerequisite(s): University Advanced Standing and (Formal Acceptance into the Civil Engineering Program or Department Approval)
Provides exposure to emerging topics and technologies of current interest in civil engineering. Varies each semester depending upon the state of technology. May be repeated for a maximum of 6 credits toward graduation without prior written department approval. Lab access fee of $45 applies.

Criminal Justice (CJ)

CJ 1010
Introduction to Criminal Justice
SS Fall, Spring, Summer
* Prerequisite(s): CJ 1010
Presents the processes, institution, and administration of criminal justice in the United States. Examines the crime problem, criminal law, law enforcement, criminal prosecution, criminal defense, bail, the jury system, and sentencing among adult and juvenile offenders. Explores the correctional system; namely, probation, prisons, inmates’ rights, and parole.

CJ 1300
Introduction to Corrections Process
3:3:0 Fall, Spring, Summer
* Prerequisite(s): Departmental approval required
Introduces the corrections system. Includes origin and evolution, philosophies of corrections, perspectives on sentencing, and alternatives to incarceration. Includes community corrections; probation and parole; offender rights and legal issues; adult, juvenile, and special needs offenders; corrections specialists, staff, and administration as a profession; and special challenges for the future.

CJ 1330
Criminal Law
3:3:0 Fall, Spring, Summer
* Prerequisite(s): CJ 1010
Provides an overview of criminal law. Covers history and terminology of the criminal justice system, the elements of specific offenses, and the role of the criminal justice profession in the fact-gathering process.

CJ 1340
Criminal Investigations
3:3:0 Fall, Spring, Summer
* Prerequisite(s): CJ 1010, CJ 1390 is also strongly recommended as a pre- or co-requisite for Criminal Justice majors
Introduces the fundamentals of criminal investigations. Examines the techniques commonly utilized by investigative personnel for crimes against property and persons to include case management and documentation, interacting with victims, witnesses and suspects, and crime scene analysis. May be delivered online.

CJ 1350
Introduction to Forensic Science
3:3:0 Fall, Spring, Summer
* Prerequisite(s): University Advanced Standing and (Formal Acceptance into the Criminal Justice Program or Department Approval)
Studies Forensic Science and multiple forensic disciplines as they correlate with criminal investigations. Teaches the identification and importance of multiple types of physical evidence typically found at a crime scene and how that evidence is used to provide a link between the victim, suspect, and crime scene. Explains the proper techniques needed to document a crime scene and physical evidence. Provides the process of taking the evidence from the scene and the scientific analysis of the evidence, which is completed at the crime laboratory.

CJ 1390
Introduction to Policing
3:3:0 Fall, Spring, Summer
* Prerequisite(s): Departmental approval required
Introduces the police organization and administration and duties within federal, state, and local law enforcement agencies. Includes history and philosophy of law enforcement, evaluation of administrative practices, recruitment and hiring of new personnel, patrol and criminal investigative assignments, issues confronting American law enforcement agencies, emerging concepts, professionalism, and community crime prevention.

CJ 1800
POST Module I
7:7:0 Fall, Spring, Summer
* Prerequisite(s): Departmental approval required, Passing score on National Peace Officer Selection Test.
Completes all training required by Utah Peace Officer Standards and Training (POST) to become certified as a Special Function Officer. Certification may become active when hired by an agency with Peace Officer authority.

CJ 1810
POST Module II
11:11:0 Fall, Spring, Summer
* Prerequisite(s): CJ 1800, Departmental Approval Required
Completes all training required by Utah Peace Officer Standards and Training (POST) to become certified as a Law Enforcement Officer. That certification may become active when hired by an agency with Peace Officer authority.

CJ 2110
Security Management and Loss Prevention
3:3:0 On Sufficient Demand
* Prerequisite(s): CJ 1010
Examines external and internal security measures, confidential personnel investigations, and interview procedures. Studies principle and major concepts in prevention, protection, loss control, and crime prevention in the commercial sector.
Course Descriptions

CJ 2200 Writing for Criminal Justice Professionals 3:3:0 Fall, Spring, Summer
* Prerequisite(s): CJ 1010 and (ENGL 1010 or ENGH 1005)
Teaches written communication across the criminal justice spectrum. Emphasizes basic formats and language used to present accurate, understandable and factual information. Requires written reports, affidavits, warrants, probable cause statements and other legal documents. Applies proper communication principles to legal writing situations. Allows students to author a variety of formal legal documents.

CJ 2330 Juvenile Justice 3:3:0 Fall, Spring, Summer
* Prerequisite(s): CJ 1010
Provides an overview of the juvenile justice system from its origin through present-day trends and development. Examines the origin and development of the juvenile court as well as its changing social and political philosophy. Discusses the role and relationship of municipal law enforcement toward the juvenile offender. Examines closed juvenile institutions, juvenile probation, parole, and alternative placement such as group homes.

CJ 2350 Laws of Evidence 3:3:0 Fall, Spring, Summer
* Prerequisite(s): CJ 1330

CJ 281R Internship 1 to 8:1 to 8:0 On Sufficient Demand
* Prerequisite(s): Department Approval
Provides actual, on-the-job work experience on a paid basis in a criminal justice profession or other approved related situation. Emphasizes successful work experience, with emphasis on identifying and solving problems. Completers should be qualified to work at entry-level jobs in the criminal justice profession. May be repeated for a maximum of 8 credits toward graduation. May be graded credit/no credit.

CJ 2920 Short Course Workshop 1 to 3:1 to 3:3 to 9 On Sufficient Demand
The specific title with the credit authorized for the particular offering will appear in the semester schedule and on the student transcript.

CJ 3020 Police Administration 3:3:0 Spring, Summer
* Prerequisite(s): ENGL 2010, CJ 1010 and University Advanced Standing
Discusses the issues facing contemporary law enforcement administrators. Focuses on the complexities associated with law enforcement organization leadership and strategic planning, training, and stress management; evaluation, promotion, and discipline; legal issues and police department liability; budgeting; politics; and media relations.

CJ 3040 Community Policing 3:3:0 Fall
* Prerequisite(s): ENGL 2010 (recommended), CJ 1010, and University Advanced Standing
Presents the fundamentals of the community-oriented policing philosophy. Includes the comparison of traditional and community policing philosophies; law enforcement and community relationships. Analyzes the importance of political and public support and involvement; attitudinal changes involving the roles of police management, supervisors, and line personnel; creation of partnership with community organizations and police problem-solving methodologies.

CJ 3060 Corrections in the Community 3:3:0 Fall
* Prerequisite(s): CJ 1300 and University Advanced Standing
Studies the Criminal Justice Community Corrections component. Presents historical origin, development, and current practices in probation, parole, the halfway house, work and educational release, as well as furlough programs. Requires the design of an ideal corrections facility and a pre-sentence investigation report and recommendation.

CJ 3100 Criminal Profiling 3:3:0 Fall
* Prerequisite(s): CJ 1010 and University Advanced Standing
Introduces process of reviewing and assessing the behavioral facts of a violent criminal act from a law enforcement and/or investigative perspective.

CJ 3140 Corrections Law 3:3:0 Spring
* Prerequisite(s): CJ 1300 and University Advanced Standing
Teaches the law as it pertains to the corrections field. Examines civil liability and pertinent constitutional amendments as they relate to corrections covering the areas of probation, incarceration, and parole.

CJ 3270 Criminology 3:3:0 Fall, Spring
* Prerequisite(s): CJ 1010 and University Advanced Standing
Introduces the field of criminology, providing an overview of the issues involved in defining, measuring, and explaining crime. Examines the nature, extent, and general characteristics of criminal behavior and the potential causes of criminal offenses and offenders. Reviews early and contemporary theories which attempt to explain criminal behavior from a sociological, psychological, and biological perspective; the effectiveness of theories in explaining crime; theory integration and application of theory to selected issues as they relate to the modern world.

CJ 3300 Victimology 3:3:0 Fall, Spring, Summer
* Prerequisite(s): CJ 3270 and University Advanced Standing
Presents historic treatment and emerging roles of the crime victim in the criminal justice process. Investigates problems and dilemmas faced by crime victims and victimization risk factors. Studies systemic and societal creation of victims, relationships between victims and offenders, crime victim compensation, and reparations.

CJ 3310 White Collar Crime 3:3:0 On Sufficient Demand
* Prerequisite(s): CJ 3270 and University Advanced Standing
Discusses the implications of white-collar crime for criminal justice professionals and researchers. Examines various forms of white-collar crime using case studies and estimates the extent as well as the costs of these crimes. Focuses on victim and offender profiles and legal issues, including questions of corporate liability. Examines theoretical explanations for white-collar crime committed by individual offenders and corporations.

CJ 3320 Crime and Gender 3:3:0 On Sufficient Demand
* Prerequisite(s): CJ 1010 and University Advanced Standing
Involves an in-depth approach to the study of women in the criminal justice system from both a theoretical and practical perspective. Covers three main areas: 1) women as offenders; 2) women as victims; and 3) women as criminal justice practitioners.

CJ 3330 Financial Crimes Investigations 3:3:0 Fall, Spring
* Prerequisite(s): CJ 1340 or ACC 2010 and University Advanced Standing
Examines the complex world of financial crimes, money laundering, and the national and international standards for financial institutional compliance.
CJ 3340
Terrorism and the Criminal Justice System
3:3:0 On Sufficient Demand
* Prerequisite(s): University Advanced Standing and CJ 1010 or ACC 2010.
Examines the phenomena of radicalization and terrorism as they relate to the criminal justice system in America. Evaluates the various radical movements that have led to acts of terrorism, including jihadist extremists, animal rights and environmental extremists, as well as the white supremacist and domestic far-right extremist movement in America. Examines the role of law enforcement in counterterrorism efforts in the United States and law enforcement responses to terrorism. Assesses the challenges of prosecuting, sentencing, and incarcerating terrorists, both domestic and international. Evaluates the movement of Countering Violent Extremism as a means to impede the pathway to terrorism.

CJ 3360
Prisons Contemporary Issues and Dilemmas
3:3:0 Spring
* Prerequisite(s): CJ 1010, ENGL 2010, and University Advanced Standing
Studies the history of the American prison system, targeting current issues and trends. Explores options for resolving current issues and attempts to understand and diagnose future trends and issues.

CJ 3400
Drugs and Crime
3:3:0 Fall, Spring
* Prerequisite(s): CJ 1010, ENGL 2010, and University Advanced Standing
Presents historical, economic, social, and political roles of legal and illegal drugs. Explains the drug contribution to crime and the impact that drugs have on the criminal justice system. Compares drug production and distribution systems. Illustrates efforts to combat the drug epidemic including decriminalization, prevention, and treatment.

CJ 3600 (Cross-listed with: ESMG 3600)
Psychology of Emergency Services
3:3:0 On Sufficient Demand
* Prerequisite(s): ENGL 2010 and University Advanced Standing
* Prerequisite(s) or Corequisite(s): ESMG 310G
Examines the general psychological aspects of police, fire, and emergency medical services responders including dimensions of personality, family, organizational, cultural and diversity issues. Examines models of emergency and crisis decision making. Analyzes stress, anxiety, and trauma theories and clinical issues and examines current interventions being used for related disorders and building resilience.

CJ 4060
Special Problems in Criminal Justice
3:3:0 Fall, Spring
* Prerequisite(s): CJ 1010 and University Advanced Standing
Examines selected current issues and problems in criminal justice. Researches external factors related to the professions of police, courts, and corrections. Demonstrates functions of the criminal justice system through realistic situations and events.

CJ 4160
Constitutional Criminal Rights
3:3:0 Fall, Spring, Summer
* Prerequisite(s): CJ 1330, ENGL 2010, and University Advanced Standing
Studies decisions in leading U.S. Supreme Court criminal cases. Presents an overview of criminal procedure relating to constitutional amendment laws with a criminal justice emphasis. Discusses leading cases concerning constitutional rights and responsibilities.

CJ 4200
Ethical Issues in Criminal Justice
3:3:0 Fall, Spring, Summer
* Prerequisite(s): CJ 1010 and University Advanced Standing
Examines selected current issues and problems in the criminal justice system. Studies differences between moral decay and the ideal justice system. Uses an issue-based approach to solve individual, group and departmental ethical dilemmas.

CJ 4250
Criminal Justice Career Strategies
2:2:0 Fall, Spring
* Prerequisite(s): University Advanced Standing
Emphasizes the development of effective techniques for successfully locating, applying for and securing employment as well as advancing in a Criminal Justice related career path. Includes industry and job research, demonstration, role play, and application exercises. Should be taken during second semester junior year. Provides preparation for coop/internship experience.

CJ 445G (Cross-listed with: ESMG 445G)
Human Factors in Emergency Management
3:3:0 On Sufficient Demand
* Prerequisite(s): University Advanced Standing
* Prerequisite(s) or Corequisite(s): ENGL 2010
Introduces students to an emergency response approach to understanding hazards and disasters grounded in social vulnerability analysis. Examines historical, geographical, social, and cultural factors and conditions that put people differentially at risk before, during, and after disasters. Utilizes a multi-disciplinary approach. Focuses on global, national, regional, and local patterns of development. Explores how vulnerable social groups are affected by and cope with hazardous conditions and events, and strategies for community-based mitigation engaging those most at risk.

CJ 447R
Constitutional Criminal Rights
3:3:0 Fall, Spring, Summer
* Prerequisite(s): University Advanced Standing
* Prerequisite(s): CJ 1330, ENGL 2010, and University Advanced Standing
Studies decisions in leading U.S. Supreme Court criminal cases. Presents an overview of criminal procedure relating to constitutional amendment laws with a criminal justice emphasis. Discusses leading cases concerning constitutional rights and responsibilities.

CJ 475R
Current Topics in Criminal Justice
3:3:0 On Sufficient Demand
* Prerequisite(s): CJ 1010, University Advanced Standing, and Instructor Approval
Presents selected topics in Criminal Justice, Law Enforcement, and/or National Security and will vary each semester. Requires a special project related to the area of study. May be repeated with different topic areas for a maximum of 9 credits toward graduation.

CJ 481R
Internship
1 to 8:1 to 8:0 Fall, Spring, Summer
* Prerequisite(s): University Advanced Standing
Provides actual, on-the-job work experience on a paying or non-paying (volunteer) basis in a criminal justice profession or other approved related situation. Emphasizes successful work experience, with emphasis on identifying and solving problems. Completers should be qualified to work in the Criminal Justice profession. May be repeated for a maximum of 8 credits toward graduation. May be graded credit/no credit.

CJ 487R
Criminal Justice Field Experience
1 to 6:1 to 6:0 On Sufficient Demand
* Prerequisite(s): Junior or Senior status and University Advanced Standing
Provides students access to law enforcement agencies, prisons, detention centers, courts and institutions dealing with criminals and delinquents. Includes 2-3 weeks of intense classroom instruction, interviews, and lectures by practitioners in the field and several on-site visits of varying duration. Course may be repeated five times for a total of 6 hours of credit.

CJ 4880
Qualitative Research Methods in Criminal Justice
3:3:0 Fall, Spring, Summer
* Prerequisite(s): University Advanced Standing
Explores the methods of research used by criminal justice educators and practitioners. Introduces the application of basic research practices to law enforcement and corrections problems. Includes the use of American Psychological Association (APA) style.

CJ 491R
Directed Reading and Special Projects
1 to 3:0 to 3:0 to 9
Summer
* Prerequisite(s): Junior or Senior status and University Advanced Standing
Offers independent study as directed in reading, individual projects, etc., at the discretion and approval of the department chair. May be repeated for a maximum of 9 credits.

CJ 4990
Criminal Justice Capstone Seminar
3:3:0 Fall, Spring, Summer
* Prerequisite(s): CJ 4880 and University Advanced Standing
Applies qualitative, quantitative, and/or mixed research methods to selected issues and dilemmas in criminal justice. Requires the student to develop and present an undergraduate research project both orally and in writing.
Course Descriptions

CJ 6200
Advanced Topics in Criminal Justice
3:3:0
* Prerequisite(s): Acceptance into Master's of Public Services program.

Evaluates contemporary issues in criminal justice, including current and historical concepts of criminal justice, interrelationships among different components of the system, and the role and function of the justice system in society. Develops philosophies of punishment, contemporary policing issues, courtroom decision making, and modern trends in corrections.

CJ 6210
Information-based Decision Making for Criminal Justice Administrators
3:3:0
* Prerequisite(s): Acceptance into Master's of Public Services program.

Describes contemporary criminal justice models and how data and information are critical to their success (Intelligence-led Policing, CompStat, Problem Oriented Policing, Community Policing, etc.). Builds crime analysis, crime maps, hot spots, intelligence models, and other data analysis from an administrative perspective in order to compile the tools, resources, and practices used around the world to assist in data-based decision making.

CJ 6220
Contemporary Issues In Criminal Justice
3:3:0
* Prerequisite(s): Acceptance into the Masters of Public Services Program

Evaluates developments and changes in the practice of criminal justice brought about by current issues such as terrorism, rapid technological change, police misconduct, active shooter response, police, and the media. Formulates effective policies and procedures using strategic planning to manage organizational change with the use of current management strategies and philosophies.

CJ 6230
Criminal Justice Policy
3:3:0
* Prerequisite(s): Acceptance into Master's of Public Services program.

Evaluates a conceptual approach to the creation, implementation, and evaluation of criminal justice policies. Constructs a framework for planning and formulating policy context now and in the future. Summarizes court decisions instrumental in criminal justice policies for police, courts, corrections, and juvenile justice.

Classical Studies (CLST)

CLST 290R
Themes in Classical Civilizations
3:3:0
* Prerequisite(s): ENGL 1010 or ENGH 1005

Explores topics in Classical thought, literature, art, history and philosophy at an introductory level. Emphasizes understanding literature, history and archeological topics through translated primary and secondary sources. Focuses on the basic interpretive skills necessary to relate historical, cultural, and sociological data to classical societies. May be repeated for 6 credits toward graduation.

CLST 490R
Special Topics in Classical Civilizations
3:3:0
* Prerequisite(s): ENGL 2010 and University Advanced Standing

Analyzes literary, historical, archeological, religious and cultural texts and art from Classical societies. Emphasizes understanding of the social,cultural and political forces which operate on a culture's writers, artists and major contributors. May be repeated with different topics for 6 credits toward graduation.

Construction Management (CMGT)

CMGT 1010
Introduction to Construction Management
3:2:2
Fall, Spring, Summer
Provides basic knowledge of the materials and methods used in heavy civil construction. Examines the 5 Ms of construction management-Money, Machines, Materials, Manpower and Marketing. Introduces construction documents including 2D and 3D building information models (BIM). Utilizes guest lecturers, and field trips in addition to traditional classroom activities.

CMGT 1020
Construction Materials and Methods I
3:2:2
Fall, Spring
* Prerequisite(s): MAT 0950 or higher or appropriate test scores

Provides a basic knowledge of the materials and methods used in heavy civil, commercial, and residential construction. Includes lectures, site visits and laboratory work. Curriculum covers CSI Divisions 01-05. Lab access fee of $45 applies.

CMGT 1150
Construction Safety
2:1:2
Fall, Spring, Summer
* Prerequisite(s): Acceptance into the Masters of Public Services Program

Introduces OSHA safety practices and its role in the construction industry. Reviews related safety theories, procedures and practices used in the construction industry. Software fee of $5 applies. Lab access fee of $45 applies.

CMGT 1190
Concrete and Framing Lab
3:0:9
Fall

Offers applied learning experience in concrete and framing methods on a construction project. Course Lab Supply fee of $10 for materials applies.

CMGT 1220
Finishing Lab
3:0:9
Spring

Offers lab experience in finishing methods and techniques on a construction project. Course Lab Supply fee of $10 for materials applies.

CMGT 2010
Construction Materials and Methods II
3:2:2
Fall, Spring
* Prerequisite(s): MAT 0950 (or higher)

Provides basic knowledge of the materials and methods used in heavy civil, commercial, and residential construction projects. Includes lectures, site visits and laboratory work. Curriculum covers CSI Divisions 06-39. Software fee of $5 applies. Lab access fee of $45 applies.

CMGT 2025
Heavy Civil Plans and Specifications
3:3:0
* Prerequisite(s): CMGT 1010, CMGT 1020

Designed for students interested in heavy/civil construction and design. Studies plans, standards and specifications for infrastructure construction. Emphasizes roadway systems, highway and bridge construction utilized in the heavy civil construction industry. Utilizes current project plans. May include site visits and guest lecturers as appropriate.

CMGT 2035
Construction Computer Applications
3:3:0
Fall, Spring
* Prerequisite(s) or Corequisite(s): CMGT 1010, and (CMGT 1020 or CMGT 1020), or department approval.

Emphasizes construction industry-specific, project management software use. Covers spreadsheets, scheduling, document manipulation, storage, dissemination and collaboration. Lab access fee of $45 applies.

CMGT 2060
Construction Job Site Management
3:3:0
Fall, Spring
* Prerequisite(s) or Corequisite(s): CMGT 2010 or CMGT 1020

Covers the role and duties of job site managers of heavy civil and commercial construction projects. Includes documentation, time and cost control, job site layout and control, labor relations, conflict resolution, OSHA safety practices. Emphasizes the design and implementation of project safety plans. Focuses on project quality, productivity, cost control and safety management. Lab access fee of $45 applies.

CMGT 2080
Principles of Construction Scheduling
3:2:2
Fall, Spring
* Prerequisite(s): CMGT 1010, CMGT 1020, and (CMGT 2035 or IM 2010)

Provides fundamental skills required to plan and schedule civil and commercial construction projects. Familiarizes students with computer scheduling software packages used to monitor and control construction projects. Defines the sequencing, phasing, and critical path management of construction activities. Software fee of $5 applies. Lab access fee of $45 applies.
CMGT 281R
Internship
1 to 6:1 to 6:0  Fall, Spring, Summer
* Prerequisite(s): Department approval

Provides on-the-job construction work experience, includes student, employer, and coordinator evaluations, on-site work visits, written assignments, and presentations. Provides experience in writing and completing individualized work objectives that improve present work performance. May be repeated for a maximum of 6 credits toward graduation. May be graded Credit/No Credit.

CMGT 289R
Construction Industry Seminar .5:.5:.0  Fall, Spring

Provides the opportunity to hear professionals teach about unique aspects of the industry. Must be repeated twice for one credit for graduation, but may be repeated for a maximum of two credits.

CMGT 299R
Skills USA 1:1:0  Fall, Spring

* Prerequisite(s): Requires adviser or department approval.

Supports and facilitates the goals and objectives of Skills USA pre-professional student organization that develops social awareness, civic, recreational, and social activities. Students may participate in local, state, and national contests. May be repeated for a maximum of 2 credits toward graduation.

CMGT 3010
Construction Materials Testing 3:2:3  Fall, Spring

* Prerequisite(s): CMGT 1020 and (MAT 1010 or higher or EGDT 1600) and University Advanced Standing

Investigates the general physical properties of construction materials and their common quality control/assurance tests conducted in the construction industry. Analyzes results of these tests and how they affect construction design. Emphasizes the performance of field and lab testing procedures used in heavy civil construction. Course Lab Supplies fee of $17 for materials applies.

CMGT 3020
Building Envelopes and Mechanical Systems 3:2:2  Fall, Spring

* Prerequisite(s): CMGT 1010, IM 1010 or computer proficiency exam, and University Advanced Standing

Covers mechanical, electrical and plumbing (MEP) principles. Provides problem solving experience in the analysis and design of building envelopes and MEP systems used in construction applications. Software fee of $5 applies. Course fee of $10 for materials, transportation applies. Lab access fee of $45 applies.

CMGT 3030
Principles of Construction Estimating 3:2:3  Fall, Spring

* Prerequisite(s): CMGT 2035, MAT 1010 or higher or EGDT 1600, and University Advanced Standing, or CMGT Instructor/Program approval for non-CMGT majors

Introduces the preparation of detailed cost estimates based on contract models and documents. Includes the use of software for performing reliable quantity take-offs. Covers labor, material, and equipment pricing. Includes lectures and laboratory work. Software fee of $5 applies. Lab access fee of $45 applies.

CMGT 3050
Construction Equipment/Planning and Logistics 3:2:2  Spring

* Prerequisite(s): CMGT 2080, CMGT 3030, ACC 3000 (recommended) or (ACC 2010 and ACC 2020), and University Advanced Standing, or CMGT Instructor/Program approval for non-CMGT majors

Introduces productivity, logistics and associated costs of heavy equipment required on a typical construction project. Emphasizes equipment used in heavy civil construction. Software fee of $5 applies. Lab access fee of $45 applies.

CMGT 3060
Applied Statics and Strength of Materials 3:2:3  Fall, Spring

* Prerequisite(s): (MATH 1060 or EGDT 1610) and University Advanced Standing

Introduces basic principles of statics, coplanar force systems, coplanar-nonconcurrent force systems, stresses and strains, properties of materials, shear and bending diagrams, and beam design. Explores materials used in construction projects.

CMGT 3080
Construction Financial Management 3:3:0  Fall, Spring

* Prerequisite(s): ACC 3000 (Recommended) or (ACC 2010 and ACC 2020), and University Advanced Standing

* Prerequisite(s): Corequisite(s): CMGT 3030

Builds on basic principles of accounting and finance as utilized in the construction industry. Emphasizes labor burden, financial needs and decision tools, construction accounting systems, cash flow, profit and tax projections on construction projects. Software fee of $5 applies. Lab access fee of $45 applies.

CMGT 3090
Principles of Hydrology in Construction Management 3:2:3  Fall

* Prerequisite(s): (MATH 1060 or EGDT 1610) and University Advanced Standing

Prepares students to manage the behavior of water on construction projects. Includes intensity, duration and frequency curves and runoff, erosion control, storm drain systems, dewatering systems, environmental impacts, and stability of soils.

CMGT 3140
Construction Real Estate 3:2:3  Fall, Spring

* Prerequisite(s): CMGT 3030 and Advanced University Standing

Explores the legal implications of ownership of real property as it relates to new construction and existing improvements. Includes the nature of real property, estates in land, transfer, encumbrances, restrictions, and contracts. Discusses ownership, settlement, taxation, finance, valuation and appraisal.

CMGT 3160
Building Information Modeling 3:3:0  Fall, Spring

* Prerequisite(s): EGDT 1020 or CMGT Instructor/Program approval for non-CMGT majors and University Advanced Standing

Introduces 3D architectural models for cost estimating, clash detection, collaboration between multiple disciplines and documenting and quantifying project data. Covers model design theory, parametric modeling methods, generation of residential and commercial construction plans and details sufficient for cost estimating, building components and systems, and manipulation of model information. Software fee of $5 applies. Lab access fee of $45 applies.

CMGT 4010
Construction Contracts 3:3:0  Fall, Spring

* Prerequisite(s): ENGL 2010, CMGT 1010, Junior Standing, and University Advanced Standing, or CMGT Instructor/Program approval for non-CMGT majors

Utilizes appropriate construction documents such as contracts, waivers, change orders, employee documents and specifications. Addresses the dispute process in the United States and the contractual relationship associated with construction project delivery methods.

CMGT 4020
Construction Project Management 3:3:0  Spring

* Prerequisite(s): CMGT 2080 or CMGT Instructor/Program approval for non-CMGT majors and University Advanced Standing

Introduces best management practices in the construction industry pertaining to resource optimization. Utilizes construction planning and problem solving tools on real world construction issues. Identifies and quantifies waste in the industry and determines appropriate methods to eliminate such. Discusses lean philosophy and its impact on construction projects and the industry. Lab access fee of $45 applies.

CMGT 405G
Global Sustainability and the Built Environment 3:2:2  Fall, Spring

* Prerequisite(s): Minimum junior status or CMGT Instructor/Program approval for non-CMGT majors; University Advanced Standing

Explores sustainability issues from a global perspective. Discusses global sustainability and focuses specifically on the LEED green building rating system. May include guest lectures, site visits, and group assignments. Software fee of $5 applies. Lab access fee of $45 applies.
Course Descriptions

CMGT 4500
Senior Capstone Project
3:1:4 Fall
* Prerequisite(s): Junior Standing, Program Advisor Approval, and University Advanced Standing

Designed for senior Construction Management and related majors. Involves execution of a construction project case simulation covering all aspects of construction management for either heavy civil, commercial or residential projects. Engages students with local representatives from the construction industry. Requires a written project report and oral presentations. Software fee of $5 applies. Lab access fee of $45 applies.

CMGT 459R
Current Topics in Construction
3:1:4 Fall
* Prerequisite(s): Program Advisor Approval and University Advanced Standing

Provides exposure to emerging technologies and topics of current interest in Construction. Varies each semester depending upon the state of technology. May be repeated for a maximum of 6 credits toward graduation.

CMGT 481R
Internship
1 to 4:1 to 0 Fall, Spring, Summer
* Prerequisite(s): Department approval and University Advanced Standing

Provides application of classroom theory while working as an employee in the construction industry. Requires communication of personal goals, tracking performance and work hours with the employer. Credit is determined by the number of hours a student works during the semester and completion of individually set goals. May be repeated for a maximum of 4 credits toward graduation. May be graded credit/no credit.

CMGT 489R
Undergraduate Research in Construction
1 to 3:0:5 to 15 On Sufficient Demand
* Prerequisite(s): Department approval and University Advanced Standing

Provides the opportunity to conduct research under the mentorship of a faculty member. Practices the theoretical knowledge gained in prior major courses. Creates a significant intellectual or creative product that is characteristic of the construction discipline and worthy of communication to a broader audience. May be repeated for a maximum of 3 credits toward graduation.

CMGT 497R
Independent Study
1 to 3:0:3 to 9 On Sufficient Demand
* Prerequisite(s): Approval of Construction Technologies Department Chair and University Advanced Standing

Offers independent study as directed in reading or individual projects at the discretion and approval of the department chair. May be repeated for a maximum of 6 credits toward graduation.

Constitutional Studies (CNST)

CNST 2600
Comparative Constitutionalism
3:3:0 Fall Even Year
* Prerequisite(s): POLS 1000 or POLS 1100

Compares and contrasts the political, social and economic aspects of the origins, drafting, and development of constitutions across the globe.

CNST 3870
Constitutional History to Plessy 1896
3:3:0 Fall Even Year
* Prerequisite(s): University Advanced Standing

Explores, in a critical and historical framework, US Constitutional history to Plessy (1896). Examines the origins and general principles of Constitutional thought, including the Colonial, Confederate, Early Republic, and Civil War periods of early US history. Examines the various Constitutional issues relating to judicial review, national supremacy, slavery, secession, the Civil War, and laissez-faire governmental policies.

CNST 3880
Constitutional History Since Plessy 1896
3:3:0 Spring Odd Year
* Prerequisite(s): University Advanced Standing

Explores, in a critical and historical framework, US Constitutional history since Plessy (1896). Examines the development of the US Constitution from the late nineteenth century to the present day, with special attention being given to the progressive era, the New Deal, liberal constitutionalism, and the US Supreme Court’s interpretations of civil rights and civil liberties.

CNST 4720
Foundations of American Constitutionalism
3:3:0 Spring Even Year
* Prerequisite(s): (POLS 1000 or POLS 1100 or instructor approval) and University Advanced Standing

Examines the political and constitutional foundations of the American Constitution, from the English Charter of Liberties in 1100 AD to the United States Bill Rights of 1791. Examines the comparative analysis of early Anglo-American constitutional thought, with special attention being given to the writings of prominent 17th century and 18th century constitutional theorists (e.g., Coke, Bacon, Burke, Penn, Dickinson, Mason, Adams, Madison, Marshall).

CNST 4730
Framing of the US Constitution
3:3:0 Fall Odd Year
* Prerequisite(s): CNST 4720 and University Advanced Standing


CNST 4790
US Constitution
3:3:0 On Sufficient Demand
* Prerequisite(s): (POLS 1100 or POLS 1000) and University Advanced Standing

Examines the United States Constitution as the political blueprint of American national government. Explores the basic constitutional powers and structures of the federal government and the prominent political and constitutional conflicts among its executive, legislative, and judicial branches. Addresses such key elements of constitutional design as limited and empowered government, enumerated and implied powers, separation of powers, checks and balances, federalism, and the Bill of Rights. Examines a critical analysis of modern constitutional politics.

CNST 4795
Civil Rights and Civil Liberties
3:3:0 On Sufficient Demand
* Prerequisite(s): CNST 4790 and University Advanced Standing

Explores, with a critical lens, the political and constitutional aspects of the origins, drafting, and development of The Bill of Rights, the Modern Civil Rights Movements, and the Ninth, Tenth, Thirteenth, Fourteenth, Fifteenth, and Nineteenth Amendments to the Constitution.

CNST 490R
Issues and Topics in Constitutional Studies
3:3:0 On Sufficient Demand
* Prerequisite(s): (POLS 1000 or POLS 1100) and University Advanced Standing

Surveys a specific topic in constitutional studies. Topic varies each semester. With the approval of the department chair or coordinator, students may repeat the course for a maximum of 9 credits toward graduation.

CNST 491R
Independent Study
1 to 4:1 to 0 On Sufficient Demand
* Prerequisite(s): (POLS 1000 or POLS 1100), Instructor Approval, and University Advanced Standing

Provides independent study for students unable to secure a desired course subject matter within regular curriculum offerings. Requires student and instructor design and complete readings and other projects at the upper division level, with the approval of the department chair or coordinator. May be repeated for a maximum of 8 credits toward graduation.

Communication (COMM)

COMM 1020
Public Speaking
3:3:0 Fall, Spring, Summer

Provides an introduction to basic concepts, theories, principles of oral communication as applied to a variety of speaking situations. Develops competence in oral communication through performance, the development of critical thinking skills, arrangement of ideas, and use of evidence and reasoning to support claims. Explains how culture influences what is considered effective public speaking. May be delivered online. Canvas Course Mats $69/McGraw applies
COMM 1050 Introduction to Speech Communication SS 3:3:0 Fall, Spring, Summer
Surveys the questions, methods, and current status of knowledge in the discipline of speech communication. Explores communication theory and practice across a variety of contexts and forms, including verbal, non-verbal, interpersonal, group, organization, and mass communication. Canvas Course Mats $66/McGraw applies.

COMM 1130 Writing for the Mass Media 3:3:0 Fall, Spring, Summer
Teaches Associated Press-style writing for the mass media. Focuses on organizing and presenting information to a mass audience. Emphasizes news writing.

COMM 1500 Introduction to Mass Communication 3:3:0 Fall, Spring, Summer
Provides a survey of the structure, operation, diversity, and effects of mass media. Discusses the different forms of media and the impact of media. Explores opportunities in communication work. Also covers consumer impacts.

COMM 1610 Reporting for the Mass Media 3:3:0 Fall, Spring
Prerequisite(s): COMM 1130
Provides an opportunity to learn about a career in journalism. Focuses on gathering and organizing information in the field. Includes interviewing, covering a beat, investigative reporting, reviews, and opinions. Simulates a journalist's working experience. Offers experience covering current events in the field. Lab access fee of $20 applies.

COMM 202R Communication Field Experience 1 to 3:0 to 9 Fall, Spring
Prerequisite(s): Instructor Approval
Explores a wide variety of topics in public relations, mass media, journalism and speech communication. May be repeated for a maximum of 12 credits toward graduation.

COMM 207G Introduction to Gender and Communication 3:3:0 On Sufficient Demand
Introduces students to the study of gender differences and similarities in communication. Provides practical understanding and skills useful for more effective communication within and across gender boundaries. Addresses gender and communication issues across multiple cultural contexts, including issues beyond mainstream groups and United States culture.

COMM 2100 The News Editing Process 3:3:0 On Sufficient Demand
Prerequisite(s): COMM 1130
Introduces news judgment, content, and forms. Prepares and edits copy for publication, including rewriting faulty stories, copy editing, proof-reading, headlines, newspaper design, and picture editing. Lab access fee of $20 applies.

COMM 2110 (Cross-listed with: MGMT 2110) SS Interpersonal Communication 3:3:0 Fall, Spring, Summer
Examines the role of communication in interpersonal relationships. Includes the history of interpersonal communication research and theory and applications such as negotiation, conflict management, listening, and assertiveness. Canvas Course Mats $78/McGraw applies.

COMM 2115 Introduction to Health Communication 3:3:0 On Sufficient Demand
Provides an introduction to and a foundation for the important area of health communication. Covers persuasion theories as applied to health communication research. Examines the history of medicine and healthcare. Describes patient to caregiver interaction.

COMM 2120 Small Group Communication and Decision Making 3:3:0 Fall, Spring, Summer
Provides an overview of the communication processes involved in small group interactions. Covers theories of leadership, decision-making, and problem-solving through group activities. Canvas Course Mats $66/McGraw applies.

COMM 217G (Cross-listed with: CINE 217G, ENGL 217G) HH Race Class and Gender in U S Cinema GI 3:3:0 Fall
Prerequisite(s): ENGL 1010 or ENGL 1005
R" rating.

COMM 217G (Cross-listed with: CINE 217G, ENGL 217G) HH Race Class and Gender in U S Cinema GI 3:3:0 Fall
Prerequisite(s): ENGL 1010 or ENGL 1005
R" rating.

COMM 2250 Principles of Advertising 3:3:0 On Sufficient Demand
Prerequisite(s): COMM 1500
Introduces the basics of advertising research, strategy, creative execution, and media strategy.

COMM 2270 Argumentation 3:3:0 Fall, Spring
Examines the study of argument. Emphasizes reasoning, evidence, analysis, evaluation, audience analysis, and practice.

COMM 2300 Public Relations 3:3:0 Fall, Spring, Summer
Prerequisite(s) or Corequisite(s): COMM 1050 or COMM 1130
Introduces the basics of writing for the media, designing corporate literature, and working with the public in behalf of a business or individual. Canvas Course Mats $44/Sage applies.

COMM 2400 Organizational Communication 3:3:0 Fall, Spring, Summer
Teaches how communication processes affect organizations. Applies theory to organizational analysis. Utilizes dialogue and network analysis to improve organizational values and performance. May be delivered online.

COMM 2510 Visual Strategies for Communication Majors 3:3:0 Fall, Spring, Summer
Teaches strategies to visually align public relation campaigns with an organization's brand using contemporary digital software. Provides understanding of visual strategies and effective design practices. Creates a literacy of visual communication tools and strategies for articulating a vision to audiences using well-established web design techniques. Lab access fee of $20 applies.

COMM 2560 (Cross-listed with: DGM 2460) Radio Production 3:3:0 Fall
Teaches the history of radio, and the structure of typical radio stations, from management to programming, sales, production, and promotion. Covers methods of producing radio promos, radio shows, commercials and news segments, as well as features and interviews. Uses Digital Audio Workstations to produce several radio segments of the student's choosing. Includes lectures, demonstrations, and guest lectures from radio stations in the community. Software fee of $20 applies. Lab access fee of $45 for computers applies.

COMM 2790 Magazine Writing 3:3:0 Fall
Prerequisite(s): COMM 1610
For students interested in pursuing careers in journalism. Focuses on non-fiction writing for magazine consumption. Teaches how to research and write long, investigative feature articles. Includes analysis of the early magazine industry, contemporary issues in the magazine industry, and in-depth reporting on special topics, such as science, politics, culture and society, education, environment, and international affairs. Lab access fee of $20 applies.

COMM 281R Internship 1 to 8:1 to 8:0 Fall, Spring, Summer
Prerequisite(s): Department Approval
Provides an opportunity for students to get college credit by working in communication-related fields. Applies academic concepts to actual work experiences. Requires instructor approval and final report. May be graded credit/No credit. May be repeated for a total of 8 credit hours toward graduation.
### Course Descriptions

**COMM 290A**  
**Independent Study**  
1:1:0  
* Prerequisite(s): COMM 1610, Approval of instructor and department chair.

For qualified students who wish to undertake a well-defined project or directed study related to an area of special interest. Requires individual initiative and responsibility. Includes limited formal instruction and faculty supervision. Projects may include writing a publishable paper, creating a portfolio of published news articles, producing an annotated bibliography, oral or multimedia presentation, or other options as approved by the instructor.

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**COMM 290B**  
**Independent Study**  
2:2:0  
* Prerequisite(s): COMM 1610, Approval of instructor and department chair.

For qualified students who wish to undertake a well-defined project or directed study related to an area of special interest. Requires individual initiative and responsibility. Includes limited formal instruction and faculty supervision. Projects may include writing a publishable paper, creating a portfolio of published news articles, producing an annotated bibliography, oral or multimedia presentation, or other options as approved by the instructor.

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**COMM 290C**  
**Independent Study**  
3:3:0  
* Prerequisite(s): Approval of instructor and department chair.

For qualified students who wish to undertake a well-defined project or directed study related to an area of special interest. Requires individual initiative and responsibility. Includes limited formal instruction and faculty supervision. Projects may include writing a publishable paper, creating a portfolio of published news articles, producing an annotated bibliography, oral or multimedia presentation, or other options as approved by the instructor.

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**COMM 290D**  
**Independent Study**  
4:4:0  
* Prerequisite(s): COMM 1610, Approval of instructor and department chair.

For qualified students who wish to undertake a well-defined project or directed study related to an area of special interest. Requires individual initiative and responsibility. Includes limited formal instruction and faculty supervision. Projects may include writing a publishable paper, creating a portfolio of published news articles, producing an annotated bibliography, oral or multimedia presentation, or other options as approved by the instructor.

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**COMM 3000**  
**Cross-listed with:** PHIL 3010, PHIL 3010  
**Media Ethics**  
3:3:0  
* Prerequisite(s): ENGL 2010 and University Advanced Standing

Covers ethical issues in media communication. Includes discussions of ethnicity, gender, nationalism, and conflict. Demands development of moral agency. Examines tensions between individual freedoms and social responsibilities. Addresses ethical questions in the context of current struggles within and over corporate and public media.

**COMM 3020**  
**Communication Research Methods**  
3:3:0  
* Prerequisite(s): STAT 1040 or STAT 1045 (or equivalent) and University Advanced Standing

Covers basic communication research methods in both quantitative and qualitative research. Focuses on the research process and discusses the methodological tools for understanding and conducting basic communication research. Includes examples based on research and promotes awareness of the importance of quantitative and qualitative research perspectives as well as data collection and analytical procedures. Canvas Course Mats $66/McGraw applies.

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**COMM 3030**  
**Media Literacy**  
3:3:0  
* Prerequisite(s): University Advanced Standing

Explores the concept of media literacy and how individuals can become more knowledgeable citizens when analyzing and evaluating messages disseminated from a wide variety of media outlets.

**COMM 3050**  
**Theories of Communication and Culture**  
3:3:0  
* Prerequisite(s): ENGL 1010 or ENGH 1005) and COMM 1500 with a 'C-' or better and University Advanced Standing

Covers main theoretical approaches to communication and culture. Includes transmission, ritual, symbolic interactionist, structuralist, post-structuralist, postmodern, and critical theories. Canvas Course Mats $66/McGraw applies.

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**COMM 3100**  
**Propaganda and Persuasion**  
3:3:0  
* Prerequisite(s): COMM 1500 with a C- or higher required and University Advanced Standing; COMM 3020 and COMM 3050 recommended

Examines various propaganda techniques inherent in advertising, public relations, and the mainstream news media in the United States. Prepares students to apply critical thinking skills to determine if or when propaganda techniques are used in order to understand the role of propaganda in their own mediated environment.

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**COMM 3110**  
**Non Fiction Cinema History**  
3:2:3  
* Prerequisite(s): ENGL 2150 and University Advanced Standing

Surveys the history of non-fiction/documentary film from 1896 to the present. Includes study of early pioneers from Flaherty's NANOOK OF THE NORTH to the current trend of reality television and popular documentaries. Some films screened may carry an "R" rating.

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**COMM 3115**  
**Communicating in Environments**  
3:3:0  
* Prerequisite(s): University Advanced Standing

Explores how people use communication to navigate both social and natural environments. Investigates social and small group communication; specifically, how small groups are created, what role(s) they play in life. Considers how our culture communicates about the natural world; how do we define nature, who communicates for nature, and how does nature behave as a stakeholder in environmental conflicts. Occurs at the Capitol Reef Field Station, which allows for an experiential application of the theories of small-group and environmental communication. Focuses on the experience and application of the literature of the discipline to create an integrated-learning opportunity.

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**COMM 3120**  
**Fundamentals of New and Social Media**  
3:3:0  
* Prerequisite(s): University Advanced Standing

Examines contemporary issues related to social media, including the impact of such media on journalism and society, social media effects, and new media campaigns. Investigates the relationship between government policy and social media in relation to issues such as the digital divide, net neutrality, and the use of social media to sustain protests and revolutions. Software fee of $20 applies.

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**COMM 3130**  
**The Culture of Nature and Technology**  
3:3:0  
* Prerequisite(s): ENGL 2150 and University Advanced Standing

Experiences the cultural construction of nature and technology from historical, interpretive, and critical perspectives. Deconstructs the nature/culture dichotomy. Examines the neutrality of technology thesis. Explores the political and social implications of representations of, and relations to, nature and technology.

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**COMM 3140**  
**Social Media Content Creation**  
3:3:0  
* Prerequisite(s): University Advanced Standing

Develops multimedia content creation skills for a myriad of social media platforms. Focuses both on the theoretical and practical foundation for persuasive/informative social media campaigns from a public relations, journalism, and communication-studies perspective. Covers multimedia content creation for platforms such as Facebook, Twitter, Instagram, and Pinterest, among others. Software fee of $20 applies.
COMM 314G (Cross-listed with: ENGL 314G, THEA 314G)
Global Cinema History
3:2:3  On Sufficient Demand
* Prerequisite(s): (ENGL 2150 or THEA 1023) and University Advanced Standing
Studies the evolution of global film styles, movements, stars, and genres with a focus on international cinema chronologies outside the United States. Some films screened may be considered controversial and carry an "R" rating.

COMM 3150 (Cross-listed with: CINE 3150, ENGL 3150)
Cinema and Television Theory
3:3:0  Spring
* Prerequisite(s): (CINE 2150 or ENGL 2150) and University Advanced Standing
Examines major theoretical approaches to the screen arts. Explores how cinema and television reflect and are created by historical and contemporary cultural contexts. Includes the study of various approaches such as fan studies, spectatorship, stars, authorship, genre, long-form narrative and production. Includes lecture, film and media screenings, and critical discussions of assigned readings.

COMM 3160
Social Media Analytics
3:3:0  On Sufficient Demand
* Prerequisite(s): COMM 3140 and University Advanced Standing
Provides methods in which social media activity data is obtained and subsequently measured. Examines common metrics that are used to evaluate the effectiveness of social media campaigns. Explores how social media, as a medium, can be properly evaluated in terms of valuation and return on investment. Critiques and analyzes current and past social media campaigns in order to better understand how metrics can help to modify social media strategy and tactics. Applies the associated theoretical concepts via hands-on activities using contemporary social media content management tools and analytic software. Software fee of $20 applies.

COMM 317G
GI Ethnographic Methods for Communication Research
3:3:0  Fall, Spring
* Prerequisite(s): University Advanced Standing
Provides an examination of concepts and methodologies used to conduct ethnographic research. Discusses the critical study of cultural processes; the approaches to ethnographic research; and the relationship among ethnographic evidence (fieldwork), interpretation, and representation.

COMM 319G
Intercultural Communication Encounters
3:3:0  Fall, Spring
* Prerequisite(s): University Advanced Standing
Promotes awareness of the role of competent communication in intercultural awareness and sensitivity. Reviews classical and current definitions of culture and describes their general characteristics, with specific focus on the issue of cultural diversity. Describes the components and process of intercultural communication including perception and motivation. Provides an overview of differences and similarities in verbal and nonverbal intercultural communication. Identifies guidelines for achieving intercultural communication competence.

COMM 320G
Photojournalism
3:3:0  Fall, Spring
* Prerequisite(s): University Advanced Standing
Covers the fundamental skills and principles of gathering news with a camera. Demonstrates how students can improve the way they see information for distribution via the mass media. Allows students to articulate how they feel about images and describe why such images work well or poorly for publication. Lab access fee of $20 applies.

COMM 322G (Cross-listed with: MGMT 332G)
Cross Cultural Communications for International Business
3:3:0  Fall, Spring
* Prerequisite(s): (ENGL 2010 or COMM 1050) and University Advanced Standing
Discusses today's business environment which requires work in a multi-ethnic setting. Overviews critical elements that arise from the various cultural backgrounds which can impact both domestic and international organizations. Proceeds from a management point of view with lessons easily derived for the mid-level manager as well as for line personnel. Concentrates on managerial communications, negotiations, cultural changes, and management functions.

COMM 3410 (Cross-listed with: FAMS 3410)
Fundamentals of Mediation and Negotiation
3:3:0  Fall, Spring
* Prerequisite(s): (COMM 1050 or PSY 1010 or SOC 1010 or SW 1010 or FAMS 101G) and University Advanced Standing
Teaches students to understand and participate knowledgeably on a basic level in the processes of mediation and negotiation. Emphasizes conceptual knowledge of both processes and improves practical skills and effectiveness as a mediator and negotiator. Uses an interactive-workshop format that blends theory with simulated class role-play.

COMM 3420 (Cross-listed with: BESC 3420)
Communication and Conflict
3:3:0  Fall, Spring, Summer
* Prerequisite(s): (FAMS 3410 or COMM 3410 or COMM 2110 or LEGL 3150) and University Advanced Standing
Studies contemporary theories of conflict and communication. Analyzes the roles of culture, gender, personal, and organizational ethics in conflicts and disputes. Covers the nature of conflict and teaches methods of negotiation, mediation, and conflict resolution with an emphasis on collaborative problem-solving. Canvas Course Mats $66/McGraw applies.

COMM 350R
Special Topics in Communication
3:3:0  On Sufficient Demand
* Prerequisite(s): University Advanced Standing
Prereq: University Advanced Standing
Prereq: University Advanced Standing
Promotes awareness of the role of competent communication in intercultural awareness and sensitivity. Reviews classical and current definitions of culture and describes their general characteristics, with specific focus on the issue of cultural diversity. Describes the components and process of intercultural communication including perception and motivation. Provides an overview of differences and similarities in verbal and nonverbal intercultural communication. Identifies guidelines for achieving intercultural communication competence.

COMM 3510
Visual Communication Theory
3:3:0  Fall, Spring
* Prerequisite(s): University Advanced Standing
Examines the physio-psychological bases of perception, cognition, semantics, aesthetics and history that lead to realization of visual messages within the context of communication. Discusses the ethical dimensions of visual image making and critiques contemporary visual images across all mass media.

COMM 3520
Public Relations Case Studies
3:3:0  Fall, Spring, Summer
* Prerequisite(s): COMM 1500, COMM 2300, COMM 3020, and University Advanced Standing
Examines public relations strategic planning process through the analysis of case studies. Addresses strategic communication planning issues in media relations, crisis communications, ethics, creative planning, research, and evaluation, using real-world situations and clients. Promotes learning individually and in teams. Software fee of $20 applies.

COMM 3530
Public Relations Writing
3:3:0  Fall, Spring
* Prerequisite(s): COMM 1130 or COMM 1050, COMM 2300, and University Advanced Standing
Develops skills in persuasive writing for institutional or individual clients. Provides a hands-on experience in applying public relations writing tools for corporate, non-profit, government, and public relations organizations. Covers writing for the media, designing and writing corporate literature, and working with the public on behalf of a business or individual as it relates to public relations. Lab access fee of $20 applies.

COMM 3540
Sports Public Relations
3:3:0  Fall, Spring
* Prerequisite(s): COMM 2300, and University Advanced Standing
Examines the history of sports communication for public relations, spotlights sports communication key influencers, and highlights the skills necessary to effectively communicate in a changing sports marketplace. Exposes students to how public relations, social networking, corporate involvement, and mass media continue to shape a dynamic field that remains a top choice for creative communication professionals across the globe. Incorporates students' sports writing skills as they learn the execution of sports digital media plans, media conferences, and media availability.
Course Descriptions

COMM 3560
Public Relations Event and Media Coordination
3:3:0 Fall
*Prerequisite(s): COMM 2300, and COMM 3530; University Advanced Standing.

Examines the process of event coordination as it relates to public relations and media management. Reviews the history of festivals and events. Provides an understanding of the concepts of project coordination, strategic planning, and strategic vision within event coordination. Explores media management within event coordination for events that include award shows, film festivals, government press conferences, sporting events, fundraisers, promotional events, and more. Explores public-relations careers within event coordination, and helps students create, develop, manage, execute, and evaluate an event from a public-relations approach.

COMM 3570
Crisis Communication
3:3:0 Fall
*Prerequisite(s): COMM 2300, University Advanced Standing

Provides a broad theoretical and practical understanding of crisis communication and risk assessment. Examines recent crisis cases to understand what constitutes and causes organizational crises, how to avoid crises, and what to do when a crisis hits. Evaluates communicative channels and messages, including new media, and develops strategies to prepare and manage a crisis situation.

COMM 362G
International Communication
3:3:0 On Sufficient Demand
*Prerequisite(s): COMM 3020, COMM 3050, and University Advanced Standing

Introduces theories of international communication. Covers different systems of the press in different countries. Analyzes specific case studies in international media.

COMM 3660
Investigative Reporting
3:3:0 On Sufficient Demand
*Prerequisite(s): COMM 1610 with a C- or higher and University Advanced Standing

Explores news and information in a democratic framework. Develops interview techniques, public record use, fact checking and electronic data access in relation to complex social issues.

COMM 3680
Advertising Media Planning
3:3:0 On Sufficient Demand
*Prerequisite(s): COMM 2300 and University Advanced Standing

Teaches the process of media planning. Covers procedures, issues, and methods of evaluation. Takes a problem-solving approach, oriented to targeting particular audiences in appropriate ways.

COMM 3690
Creative Strategy in Communication Campaigns
3:3:0 On Sufficient Demand
*Prerequisite(s): COMM 2300 or COMM 2250 and University Advanced Standing; all courses must be C- or better.

Prepares students for careers in public relations, journalism, and communication by exploring the role of research, copywriting, design, and media structures in developing persuasive messages. Emphasizes execution of creative strategies that are appealing to the intended audience, consistent with communication objectives, and formatted correctly for the media in which they are implemented.

COMM 3700
Free Expression in a Democratic Society
3:3:0 Fall, Spring
*Prerequisite(s): University Advanced Standing

Examines the role of the free speech and free press clauses of the First Amendment of the U.S. Constitution from legal, ethical, political, and pragmatic perspectives. Covers basic rules governing the media (advertisers, newspapers, public relations specialists, and electronic media) and individuals. Includes analysis of court decisions, executive orders, administrative rules, and legislation intended to limit or regulate speech and examples of people/organizations who have challenged these rules.

COMM 3780
Mormons Media and Culture
3:3:0 Fall, Spring
*Prerequisite(s): University Advanced Standing; COMM 3020 and COMM 3050 each recommended

Examines the intersection of media, popular culture, and Mormonism. Analyzes the social construction of Mormonism through representations in the media, official and unofficial LDS discourse, folklore, material culture, and history. Discusses cultural theories of race, gender, orientalism, and tribalism.

COMM 3790
Case Studies in Journalism
3:3:0 Spring
*Prerequisite(s): COMM 1610 with a C- or higher and University Advanced Standing

Examines historically significant examples of the press in action from historical, ethical, and critical perspectives. Requires a research paper. Lab access fee of $20 applies.

COMM 401G
Communication Education
3:3:0 Fall, Spring
*Prerequisite(s): COMM 1020 and University Advanced Standing; all courses must be C- or better.

Explores communication education. Identify concepts and apply them to the service and interaction. Focuses on teaching. Encourages critical examination of diversity, research, socio-emotional bonding, outreach to the communication community, and instructional issues that relate to teaching communication. Offers experience in the role of teaching assistant. Global/Intercultural understanding as it applies to communication theory is considered and explored from a variety of perspectives. Examines the perspectives, experiences and concerns of individuals and groups representing cultures other than one's own and specifically as those differences apply to public speaking. Understanding is integrated throughout the course content. Understanding and appreciation should enhance your educational experience and facilitate your preparation to participate as active, informed, and respectful citizens.

COMM 4110
Interpersonal Communication Theory & Research
3:3:0 Fall
*Prerequisite(s): COMM 2110, COMM 3020, and COMM 3050 with a C- or higher in each) or Instructor Approval, and University Advanced Standing

Surveys current interpersonal research. Explores the interrelated nature of theory and research. Provides the foundational knowledge required to critically assess current research in the field. Creates an opportunity to systematically explore a personal area of interest within the area of interpersonal communication.

COMM 4115
Advanced Health Communication
3:3:0 On Sufficient Demand
*Prerequisite(s): COMM 2115 or Instructor Approval and University Advanced Standing; all courses must be C- or better.

Examines persuasion, interpersonal and organizational theories which are applied to patient, caregiver, technology, organizations and the mass media in an attempt to understand the health communication processes. Examine how communication influences health. Provides research skills necessary for the capstone course.

COMM 4120
Group Communication
3:3:0 Spring
*Prerequisite(s): COMM 2120, COMM 3020, and COMM 3050 with a C- or higher in each) or Instructor Approval, and University Advanced Standing

Extends understanding of group operation and experience through current theory and research studies. Provides experiential activity of working in class groups. Enables students to study groups in their social environments, investigate real-world group policy, and discover the benefits of viewing groups as having stable yet permeable boundaries.
COMM 4170
Contemporary Issues in Organizational Communication
3:3:0 Spring
Prerequisite(s): (COMM 2400 or Instructor Approval) and University Advanced Standing; all courses must be C- or better.
Provides an introduction, overview, and in-depth look at the role of communication in contemporary organizations. Demonstrates the importance and challenges of communication within organizations. Emphasizes the interdependence of internal and external forms of organizational communication.

COMM 4180
Communication and Social Behavior
3:3:0 Fall, Spring
Prerequisite(s): (COMM 3020 and COMM 3050) and University Advanced Standing; all courses must be C- or better.
Examines the complex relationship between human communication and the social worlds in which we live. Looks at ways behavior in roles, institutions, and culture are socially constructed through language. Examines discourses and their role in constructing social phenomena, with an emphasis on the relationships between discourse and power.

COMM 4200 (Cross-listed with: FAMS 4200)
Advanced Mediation and Negotiation
3:3:0 Fall
Prerequisite(s): (ENGL 2010 with a C+ or higher) and (FAMS 3410 or COMM 3410 or BESC 3420 or COMM 3420) and University Advanced Standing.
Prepares students to perform at an advanced level in the processes of mediation and negotiation. Builds on the fundamentals learned in the basic course, improves knowledge of both processes, and sharpens practical skills and effectiveness as a mediator or negotiator. Uses an interactive-workshop format that blends theory with applied to actual practice through on-the-job experience. A certification with the Utah State Court Administrator’s office may be offered to those who pass the course and complete 10 hours of mediation and negotiation at the conclusion of the semester.

COMM 4250
Communication and Leadership
3:3:0 Fall
Prerequisite(s): University Advanced Standing
Encourages students to critically analyze leadership in terms of interpersonal effectiveness and professionalism from both a theoretical and practical perspective. Examines leadership-related, advanced oral and written communication, interpersonal communication, group and team communication and effectiveness, emotional intelligence, and power and influence.

COMM 431R
Communication Executive Lecture Series
1:1:0 Fall, Spring
Prerequisite(s): University Advanced Standing
Presents lectures by guest speakers emphasizing current public relations and communication topics concerning the student, community, nation, etc. Exposes students to varying topics and industry experts each semester. May be repeated as desired.

COMM 4500
Media and Politics
3:3:0 On Sufficient Demand
Prerequisite(s): (COMM 3020, and COMM 3050 with a C- or higher in each) and University Advanced Standing
Examines theories and research of media and politics. Analyzes the intersection between traditional and emerging media platforms and current issues in political campaigns, attitudes towards politics, and democratic participation.

COMM 4630
Wolverine Student Public Relations Firm
3:3:0 Fall, Spring
Prerequisite(s): COMM 3520 AND COMM 3530; both courses must be C- or better and Advanced University Standing.
Provides industry experience in a public relations firm setting working in corporate and nonprofit sectors. Applies writing, media relations, event planning, branding, copy editing, content creation, and social media management for real-world organizations consistent with accepted public relations practices. Teaches market and consumer research and provides regular contact with clients. Prepares students to create and implement public relations campaigns, including evaluations for client work.

COMM 479R
Journalism Workshop
3:1:6 Fall, Spring
Prerequisite(s): University Advanced Standing
For student newspaper staff. Provides student newspaper staff experience in writing, editing and publishing. Allows students to work on the student newspaper and complete specific learning objectives related to print production such as news and feature writing, columns and editorials. Focuses on layout, production, photography, advertising, and sales in a real-world newspaper environment. May be repeated for a maximum of 6 credits toward graduation. May be graded credit/no credit. Lab access fee of $20 applies.

COMM 481R
Internship
1 to 8:1 to 8:0 Fall, Spring, Summer
Prerequisite(s): Departmental Approval and University Advanced Standing
For advanced qualified students who wish to undertake a well-defined project or directed study related to an area of special interest. Requires individual initiative and responsibility. Includes limited formal instruction and faculty supervision. Projects may include writing a publishable paper, creating a portfolio of published news articles, producing an annotated bibliography, oral or multimedia presentation, or other advanced options as approved by the instructor. May be taken for a maximum of 9 credit hours toward graduation.

COMM 4830
Competitive Case Studies
3:3:0 Fall Odd Year
Prerequisite(s): COMM 3530 with a C- or higher, Instructor Approval, and University Advanced Standing
Teaches competitive case studies with a public relations emphasis. Focuses on development, research, execution, and evaluation of strategic communication planning for a client. Prepares students to compete in regional or national competitions. Software fee of $20 applies.

COMM 4850
Public Relations Campaigns
3:3:0 Fall, Spring, Summer
Prerequisite(s): COMM 3020, COMM 3520, and COMM 3530; Junior or Senior standing; and University Advanced Standing; all courses must be C- or better; and Instructor Approval
Applies PR skills, case studies, and writing analysis to create strategic public relations campaigns for a number of clients. Requires students to generate a portfolio of work for one or more clients. Software fee of $20 applies.

COMM 4930
Communication Capstone
1 to 3:1 to 3:0 On Sufficient Demand
Prerequisite(s): Departmental approval and University Advanced Standing
For advanced qualified students who wish to undertake a well-defined project or directed study related to an area of special interest. Requires individual initiative and responsibility. Includes limited formal instruction and faculty supervision. Projects may include writing a publishable paper, creating a portfolio of published news articles, producing an annotated bibliography, oral or multimedia presentation, or other advanced options as approved by the instructor. May be taken for a maximum of 9 credit hours toward graduation.

Computing (COMP)

COMP 1000
Computer and Information Literacy
3:3:0 On Sufficient Demand
Discusses computer and information literacy, focusing on current technology, emerging technology, and social media. Promotes appropriate and ethical use of technology, critical-thinking skills, and problem-solving strategies. Develops skills in word processing, spreadsheet, presentation, and image-editing applications for personal and college success.

COMP 301R
Digital Lecture Series
1:1:0 Fall, Summer
Prerequisite(s): ENGL 2010 and University Advanced Standing
Guest speakers lecture on current topics in computer science, digital media, and information systems/technology. May be repeated for a maximum of 3 credits toward graduation.
Course Descriptions

Collision Repair Technology (CRT)

CRT 100R
Paint Your Own Car
2:1:4 Fall, Spring, Summer

Designed as a survey class. Discusses and demonstrates safety, sanding, masking, feather edging, priming, and refinishing of student's vehicle. Students will finish their own projects in this class. Body and fender dents, rust out, etc., should be taken care of before class enrollment. The instructor will inspect and approve each project prior to allowing it in the program. Course is open to any community member who may profit from the instruction. May be repeated as desired for interest. Tool room fee of $19 for equipment applies.

CRT 1110
Surface Preparation
2:2:0 Fall

Covers environmental and personal safety when handling collision industry chemicals. Discusses metal preparation, surface treatment, painting and surface rust removal, proper sanding of old finishes, and film build tolerances. Teaches application and uses of undercoats, primers, primer surfacers, sealers and primer sealers. Covers block sanding, guide coats, wax and grease removers, and surface pre-cleaning techniques. Software fee of $10 applies. Lab access fee of $15 for computers applies.

CRT 111L
Surface Preparation Lab
1:0:3 Fall

* Corequisite(s): CRT 1110
 Provides laboratory experience for surface preparation techniques aligning with lectures from CRT 1110. Topics include finish removal, sanding techniques, undercoating materials. Tool room fee of $19 for equipment applies. Course Lab fee of $40 for materials applies.

CRT 1120
Nonstructural Repair
2:2:0 Fall, Summer

Offers in-depth analysis of minor damage and applied metal working techniques. Studies properties of metal, elasticity, corrosion protection, work hardening, rough out, hammer and dolly techniques, heat shrinking, pick and file and grinding methods. Presents application of corrosion protection materials, body fillers, including metal and fiber reinforced fillers, and their shaping. Emphasizes safety precautions. Software fee of $10 applies. Lab access fee of $15 for computers applies.

CRT 112L
Nonstructural Repair Lab
1:0:3 Fall, Summer

* Corequisite(s): CRT 1120
 Provides a laboratory experience for nonstructural repair techniques aligning with lectures from CRT 1120. Topics include fillers use, metallurgy, shrinking and stretching. Tool room fee of $19 for equipment applies. Course Lab fee of $22 for materials applies.

CRT 1130
Overall Refinishing and Problem Solving
2:2:0 Spring

Teaches use and maintenance of shop paint spray equipment. Studies types of undercoatings including sealers, primers, and primer surfacers, their use, limitations, and application. Discusses refinishing products, their solid levels, coverage, and recommended refinishing systems. Teaches prevention and removal of refinishing processing defects. Covers cutting and buffing. Uses ICAR Advanced Technical Curriculum. Successful completers should be prepared for ASE certification. Software fee of $10 applies. Lab access fee of $15 for computers applies.

CRT 113L
Overall Refinishing and Problem Solving Lab
1:0:3 Spring

* Corequisite(s): CRT 1130
 Provides a laboratory experience for overall refinishing and problem solving techniques aligning with lectures from CRT 1130. Topics include safety, substrate usage, application techniques, base coats, clear coats, single stage paints, and tri coat processes, application / refinement / material defects, causes and cures. Tool room fee of $19 for equipment applies. Course Lab fee of $74 for materials applies.

CRT 1140
Panel Replacement and Adjustment
2:2:0 Spring

Studies removal, replacement, and alignment of bolt-on body panels. Presents multiple latch mechanisms and their adjustments. Various trim and body fasteners are discussed. Uses ICAR Advanced Technical Curriculum. Successful completers should be prepared for ASE certification. Software fee of $10 applies. Lab access fee of $15 for computers applies.

CRT 114L
Panel Replacement and Adjustment Lab
1:0:3 Spring

* Corequisite(s): CRT 1140
 Provides a laboratory experience for panel replacement and adjustment techniques aligning with lectures from CRT 1140. Topics include replacement and alignment of bolt-on body panels, fasteners and trim. Tool room fee of $19 for equipment applies.

CRT 1210
Blending Tinting and Detailing
2:2:0 Spring


CRT 121L
Blending Tinting and Detailing Lab
1:0:3 Spring

* Corequisite(s): CRT 1210
 Provides a laboratory experience for blending tinting and detailing techniques. Identifies proper procedures for Single stage, Base coat, and Tri stage blending. Identifies detailing techniques and materials. Tool room fee of $10 for equipment applies. Course Lab fee of $53 for materials applies.

CRT 1230
Welding and Cutting
2:2:0 Fall, Summer

Introduces gas welding and cutting followed by intense study of MIG, TIG, STRSW welding of mild, high strength, ultra high strength steels, and aluminum. Studies the most common joints as they apply to current vehicles construction techniques. Introduces plasma arc cutting techniques. Uses ICAR Advanced Technical Curriculum. Successful completers should be prepared for ASE certification. Software fee of $10 applies. Lab access fee of $15 for computers applies.

CRT 123L
Welding and Cutting Lab
1:0:3 Fall, Summer

* Corequisite(s): CRT 1230
 Provides a laboratory experience for welding and cutting techniques aligning with lectures from CRT 1230. Topics include MIG, TIG, Squeeze Type Resistant Spot Welding (STRSW), welding processes. Tool room fee of $19 for equipment applies. Course Lab fee of $39 for materials applies.

CRT 2310
Collision Damage Reporting
2:2:0 Fall

* Prerequisite(s): CRT 1120, CRT 1130, CRT 1230, recommended

CRT 231L
Collision Damage Reporting Lab
1:0:3 Fall

* Prerequisite(s): CRT 112L, CRT 113L, CRT 123L, all recommended
* Corequisite(s): CRT 2310
 Provides a laboratory experience for collision damage estimating techniques aligning with lectures from CRT 2310. Topics include: damage analysis sequence, repair and replace decisions, using crash estimating guide, procedure page analysis of crash estimating guide, selecting parts and labor amounts in crash estimating guide, and various estimating programs for the computer. Tool room fee of $19 for equipment applies. Course Lab fee of $23 for materials applies.
Course Descriptions

CRT 2320
Structural Damage Analysis
2:2:0 Fall
* Prerequisite(s): CRT 1230
Teaches visual inspection, gauging, measuring, laser technology, and procedures needed to correctly evaluate primary and secondary structural damage. Includes lecture, demonstrations, and lab. Uses I-CAR Advanced Technical Curriculum. Successful completors should be prepared for ASE certification. Software fee of $10 applies. Lab access fee of $15 for computers applies.

CRT 232L
Structural Damage Analysis Lab 1:0:3 Fall
* Prerequisite(s): CRT 123L
Corequisite(s): CRT 2320
Provides a laboratory experience for analyzing structural damage to conventional and unibody frames. Aligns with lectures from CRT 2320. Topics include: damage identification, body and frame measurement systems, interpret dimension information, set up and properly use a variety of manual, and computerized measuring systems. Tool room fee of $19 for equipment applies. Course Lab fee of $20 for materials applies.

CRT 2330
Structural Repair 2:2:0 Fall
* Prerequisite(s): CRT 1230
Teaches methods, strategies, and technology needed to align and straighten unibody and conventional frame components made from high strength steel and plastics. Studies alignment of steering and suspension components. Includes lecture, demonstrations, and lab. Software fee of $10 applies. Lab access fee of $10 applies.

CRT 233L
Structural Repair Lab 1:0:3 Fall
* Prerequisite(s): CRT 123L
Corequisite(s): CRT 2330
Provides a laboratory experience for aligning and straightening unibody and conventional components made from high strength steel and plastics. Tool room fee of $19 for equipment applies.

CRT 2340
Full and Partial Panel Replacement 2:2:0 Spring
* Prerequisite(s): CRT 1140, CRT 1230
Teaches removal, alignment, welding, gluing, and corrosion protection technology needed to replace unibody components including rails, pillars, and weld-on panels. Includes lecture, demonstrations, and lab. Uses I-CAR Advanced Technical Curriculum. Successful completers should be prepared for ASE certification. Software fee of $10 applies. Lab access fee of $15 for computers applies.

CRT 234L
Full and Partial Panel Replacement Lab 1:0:3 Spring
* Prerequisite(s): CRT 114L, CRT 123L
Corequisite(s): CRT 2340
Provides a laboratory experience for full and partial panel replacement, aligning with lectures from CRT 2340. Topics include: removal, alignment, welding, gluing, and corrosion protection technology needed to replace unibody components: including rails, pillars, and weld-on panels. Tool room fee of $19 for equipment applies. Course Lab fee of $15 for materials applies.

CRT 2400
Plastic Paintless Dent Repair 2:2:0 Spring
* Prerequisite(s): CRT 1110, CRT 1120

CRT 240L
Plastic Paintless Dent Repair Lab 1:0:3 Spring
* Prerequisite(s): CRT 111L, CRT 112L
Corequisite(s): CRT 2400

CRT 2420
Plastic Repair 4:1:5:7 Spring
Teaches various repair methods, tools, and materials used to correctly repair plastic materials and SMC panels in modern vehicles. Includes lecture, demonstrations, and lab. Uses I-CAR Advanced Technical Curriculum. Successful completers should be prepared for ASE certification. Software fee of $10 applies. Lab access fee of $15 for computers applies.

CRT 2430
Mechanical and Electrical Repair 4:1:5:7 Spring
Teaches basic mechanical systems theory, removal, and replacement. Studies A/C systems, cooling, braking, emission, restraint, and electrical systems. Includes lecture, demonstrations and lab. Uses I-CAR Advanced Technical Curriculum. Successful completers should be prepared for ASE certification. Software fee of $10 applies. Lab access fee of $15 for computers applies.

CRT 2440
Mechanical Advanced Vehicle Systems 2:2:0 Spring

CRT 244L
Mechanical Advanced Vehicle Systems Lab 1:0:3 Spring
* Corequisite(s): CRT 2440

CRT 2450
Bags Brakes Steering 2:2:0 Spring
Teaches the operation and repair of active and passive restraint systems. Diagnosis of sensors, modules and related components is also discussed. Discusses drum, disc, and anti-lock brake systems and components. Covers parallellogram, and rack and pinion steering systems, repair, replacement and diagnosis of each system is addressed. Uses Advanced Tech I-CAR curriculum.

CRT 245L
Bags Brakes Steering Lab 1:0:3 Spring
* Corequisite(s): CRT 2450
Teaches the operation and repair of active and passive restraint systems. Diagnosis of sensors, modules and related components is also discussed. Discusses drum, disc, and anti-lock brake systems and components. Covers parallellogram, and rack and pinion steering systems, repair, replacement and diagnosis of each system is addressed. I-CAR Advanced Tech curriculum is used. Tool room fee of $19 for equipment applies. Course Lab fee of $27 for materials applies.

CRT 2510
Custom Welding 2:2:0 Fall
For students pursuing a Diploma or an AAS degree in Collision Repair Technology with an emphasis in Custom Street Rod Technology or interested community members with a welding background. Covers TIG welding processes for mild steel, stainless steel, and aluminum. Teaches oxyacetylene welding processes for mild steel, brass, copper, pot metal, and aluminum.

CRT 251L
Custom Welding Lab 1:0:3 Fall
* Corequisite(s): CRT 2510
Provides a laboratory experience for TIG welding processes for mild steel, stainless steel, and aluminum. Instruction in Oxyacetylene welding processes for mild steel, brass, copper, pot metal, and aluminum. Tool room fee of $19 for equipment applies. Course Lab fee of $69 for materials applies.
**Course Descriptions**

**CRT 2520**
*Customizing*
2:2:0  Fall

For students pursuing a Diploma or an AAS degree in Collision Repair Technology with an emphasis in Custom Street Rod Technology or interested community members. Covers welding background. Covers fenching, shaving, body modifications, convertible conversions, building hood scoops, louvers, flare, and other technical customizing processes.

**CRT 252L**
*Customizing Lab*
1:0:3  Fall

* Corequisite(s): CRT 2520

Provides a laboratory experience for fenching, shaving, body modifications, convertible conversions, building hood scoops, louvers, flare, and other technical customizing processes. Tool room fee of $19 for equipment applies. Course Lab fee of $11 for materials applies.

**CRT 2530**
*Panel Fabrication*
2:2:0  Fall

For students pursuing a Diploma or an AAS degree in Collision Repair Technology with an emphasis in Custom Street Rod Technology or interested community members. Covers basic fabricating tools such as sheet metal brake, slip rolls, band saw, and nibblers. Uses specialty tools such as English wheel, power hammer, kraftfomer, plenisher hammer, shrinkers, and stretchers. Teaches panel fabrication and hammer forming.

**CRT 253L**
*Panel Fabrication Lab*
1:0:3  Fall

* Corequisite(s): CRT 2530

Provides a laboratory experience for basic fabricating tools such as sheet metal brake, slip rolls, band saw, and nibblers. Uses specialty tools such as English wheel, power hammer, kraftfomer, plenisher hammer, shrinkers, and stretchers. Teaches panel fabrication and hammer forming. Tool room fee of $19 equipment applies. Course Lab fee of $60 materials applies.

**CRT 2540**
*Structural Body Fabrication*
2:2:0  Not Offered

For students pursuing a diploma or AAS degree in Collision Repair Technology with an emphasis in Custom Street Rod Technology or interested community members. Covers body construction from bumper to bumper and from roof to floor. Enhances knowledge of structural components of a well constructed vehicle.

**CRT 254L**
*Structural Body Fabrication Lab*
1:0:3  Not Offered

* Corequisite(s): CRT 2540

Provides a laboratory experience for body construction from bumper to bumper and from roof to floor. Enhances knowledge of structural components of a well constructed vehicle.

**CRT 2610**
*Top Chopping Sectioning and Channeling*
2:2:0  Spring

* Prerequisite(s): CRT 2510, CRT 251L

For students pursuing a Diploma or an AAS degree in Collision Repair Technology with an emphasis in Custom Street Rod Technology or interested community members with a basic welding and collision repair background. Covers the history of vintage vehicles, methods of top chopping, sectioning and channeling techniques.

**CRT 261L**
*Top Chopping Sectioning and Channeling Lab*
1:0:3  Spring

* Prerequisite(s): CRT 2510, CRT 251L

* Corequisite(s): CRT 2610

Provides a laboratory experience for methods of top chopping, sectioning and channeling techniques. Tool room fee of $19 for equipment applies. Course Lab fee of $16 for materials applies.

**CRT 2620**
*Frames*
2:2:0  Spring

* Prerequisite(s): CRT 2510, CRT 251L

For students pursuing a Diploma or an AAS degree in Collision Repair Technology with an emphasis in Custom Street Rod Technology or interested community members with a welding background. Identifies the different types of frames and how to modify them. Teaches sub-framing, pro-streetering, narrowing of rear ends, drive shafts, and complete frame change over. Covers exhaust systems and other alterations, front to rear.

**CRT 262L**
*Frames Lab*
1:0:3  Spring

* Prerequisite(s): CRT 2510, CRT 251L

* Corequisite(s): CRT 2620

Provides a laboratory experience for identifying the different types of frames and how to modify them. Teaches sub-framing, pro-streetering, narrowing of rear ends, drive shafts, and complete frame change over. Covers exhaust systems and other alterations, front to rear. Tool room fee of $19 equipment applies.

**CRT 2630**
*Detailing and Custom Painting*
2:2:0  Spring

* Prerequisite(s): CRT 1110, CRT 1120, CRT 1130, CRT 1140, CRT 1210

For students pursuing a Diploma or an AAS degree in Collision Repair Technology or Custom Street Rod Technology or interested community members with a automotive painting background. Teaches custom painting and detailing for show cars. Emphasizes flames, scallops, shredding, checker boarding, air brush techniques, murals, fish scales, three stage paints, pearls, candies, and multi-colored changes.

**CRT 263L**
*Detailing and Custom Painting Lab*
1:0:3  Spring

* Prerequisite(s): CRT 111L, CRT 112L, CRT 113L, CRT 121L

* Corequisite(s): CRT 2630

Provides a laboratory experience for custom painting and detailing for show cars. Emphasizes flames, scallops, shredding, checker boarding, air brush techniques, murals, fish scales, three stage paints, pearls, candies, and multi-colored changes. Tool room fee of $19 for equipment applies. Course Lab fee of $73 for materials applies.

**CRT 2640**
*Panel Fabrication of Aluminum*
2:2:0  Fall

* Prerequisite(s): CRT 1110, CRT 1120, CRT 1130, CRT 1140

For students pursuing a diploma or an AAS degree in Collision Repair Technology with an emphasis in Custom Street Rod Technology or interested community members. Covers basic hand tools, such as: hammers, dollys, leather bags, and slappers. Use of specialty equipment, such as: English wheel, Pullmax, nibbler, power hammers, and bead rollers. Teaches making bucks, patterns and forms. Teaches panel fabrication of aluminum.

**CRT 264L**
*Panel Fabrication of Aluminum Lab*
1:0:3  Fall

* Corequisite(s): CRT 2640

Provides laboratory experience for use of: hammers, dollys, leather bags, and slappers. Instructs in the use of specialty equipment, such as: English wheel, Pullmax, nibbler, power hammers, and bead rollers. Teaches making bucks, patterns and forms. Teaches panel fabrication of aluminum. Tool room fee of $19 for equipment applies. Course Lab fee of $80 for materials applies.

**CRT 2650**
*Automotive Interior Design*
2:2:0  Spring

* Prerequisite(s): CRT 1110, CRT 1120, CRT 1130, CRT 1140

Discusses automotive interior designs with emphasis on color coordination, and materials. Identifies a variety of techniques used in alteration, sewing, layout, and attachment processes.

**CRT 265L**
*Automotive Interior Design Lab*
1:0:3  Spring

* Corequisite(s): CRT 2650

Offers a laboratory experience for CRT 2650 lecture. Demonstrates interior design materials, color coordination, and stitching techniques. Teaches fabrication, design attachment, molding, layout and cutting. Tool room fee of $19 for equipment applies. Course Lab fee of $96 for materials applies.
Course Descriptions

**Computer Science (CS)**

**CS 1030**

Foundations of Computer Science  
3:3:0  Fall, Spring, Summer  
Introduces the basics of computing, including computer hardware, and programming concepts and language. Explores how computers work and how a computer may be programmed. Includes a brief history of computer, programming languages, and computer numbering systems. Presents basic programming constructs; students produce a variety of introductory level programs. Surveys various computing professions. May be delivered hybrid and/or online. Lab access fee of $45 applies.

**CS 1400**

Fundamentals of Programming  
3:0  Fall, Spring, Summer  
* Prerequisite(s): MAT 1000 or MAT 1010 with a B or better, or MAT above 1010 or ACT score 23 or higher or ALEKS score 38 or higher. CS 1030 recommended

Introduces techniques and tools to formulate and solve problems where computer algorithms and programs are a core part of an effective, repeatable solution. Demonstrates algorithmic thinking using procedural programs composed of sequences of commands, functions, loops, conditionals, and basic data structures. May be delivered online. Lab access fee of $45 applies. Canvas Course Mats $66/Cengage applies.

**CS 1410**

Object Oriented Programming  
3:0  Fall, Spring, Summer  
* Prerequisite(s): CS 1400 and (MATH 1050 or MATH 1055 with a C+ or better, or MATH above 1050)

Teaches proper program structure using the core concepts of object-oriented programming: classes, objects, encapsulation, inheritance and polymorphism. Presents problems of increasing size and complexity requiring OOP techniques, standard libraries and other appropriate language constructs. Presents methods to identify, define and implement solutions to naturally recursive problems. May be delivered online. Lab access fee of $45 applies.

**CS 2250**

Java Programming  
3:0  Not Offered

* Prerequisite(s): CS 1400

Covers practical Java programming in-depth, including abstract classes and interfaces, proper use of the packages Java.lang, Java.io, and Java.util; GUI design and implementation, and programming. Lab access fee of $45 applies.

**CS 2300**

Discrete Mathematical Structures I  
3:0  Fall, Spring, Summer  
* Prerequisite(s): CS 1410 and (MATH 1050 or higher)

For Computer Science Majors. Covers algebraic structures applied to computer programming. Includes logic, sets, elementary number theory, mathematical induction, recursion, algorithm complexity, combinatorics, and relations. First of a two-semester sequence. Lab access fee of $45 applies.

**CS 2370**

C plus plus Programming  
3:0  Spring

* Prerequisite(s): CS 1410

Introduces C++ programming for students with prior programming experience. Covers language fundamentals, core standard library components, error handling, value semantics, pointers and memory management, object-oriented programming, and templates. Lab access fee of $45 applies.

**CS 2420**

Introduction to Algorithms and Data Structures  
3:0  Fall, Spring, Summer  
* Prerequisite(s): CS 1410

Uses data abstractions to design and implement modular programs of medium size and complexity. Structures solutions to problems using common data structures and algorithms such as advanced arrays, lists, stacks, records, dynamic data structures, searching and sorting, vectors, trees, linked lists, and graphs. Evaluates alternative solutions to problems. Analyzes algorithmic complexity metrics in Big-O notation. Lab access fee of $45 applies. Canvas Course Mats $66/Cengage applies.

**CS 2450**

Software Engineering  
3:0  Fall, Spring, Summer  
* Prerequisite(s): CS 2300, CS 2420

Presents concepts, methodology and best-practices necessary to develop large scale software projects. Includes step-wise software requirements analysis, design, implementation, testing and release. Discusses software generation, reuse, scheduling, verification, and maintenance. Emphasizes current "real world" industry best-practices and tools. Lab access fee of $45 applies.

**CS 2550**

Web Programming I  
3:0

* Prerequisite(s): CS 1410 or DGM 2760 or INFO 1200

Covers design and development of browser-based programs with an emphasis on single-page applications. Teaches generation and modification of HTML via JavaScript, debugging techniques, communicating with web servers, and use of XML and JSON. Lab access fee of $45 for computers applies.

**CS 2600**

Computer Networks I  
3:0  Fall, Spring

* Prerequisite(s): CS 2810 or (INFO 1200 and IT 1600)

A rigorous introduction to computer networking theory and technologies for Computer Science and Information Technology majors. Includes theory of data communications protocols; theory and design of transmission systems; transmission media; and communication software. Emphasizes the lower layers of the Open Systems Interconnection model. Requires lab exercises to be completed outside of lecture. Lab access fee of $45 for computers applies.

**CS 2690**

Computer Networks II  
3:0  Fall, Spring

* Prerequisite(s): CS 2300, CS 2600, CS 2370  
* Prerequisite(s) or Corequisite(s): MATH 1210

Continues CS 2600 Computer Networks I. Focuses on the upper layers of the OSI and Internet models. Covers Internet (TCP/IP) protocols, routing theory, transport protocols, network application interfaces, presentation formatting, information theory and compression, cryptography, and other emerging technologies as time permits. Requires lab exercises and programming assignments to be completed outside of lecture. Software fee of $15 applies. Lab access fee of $45 for computers applies.

**CS 2810**

Computer Organization and Architecture  
3:0  Fall, Spring, Summer

* Prerequisite(s): CS 1400

Uses assembly language to introduce basic concepts of computer organization. Includes number systems, CPU organization, instruction sets, programming in assembly, memory organization, debugging, program design, and documentation. Covers interrupts, vector tables, and disk I/O. Lab access fee of $45 for computers applies.
CS 281R
Internship
1 to 8:1 to 8:0  Fall, Spring, Summer
* Prerequisite(s): Department approval

Provides on-the-job work experience for CNS majors. Utilizes the skills and abilities in the fields of computer science, software engineering, networking, and/or computer engineering. May be repeated for a maximum of three credits toward graduation. May be graded credit/no credit.

CS 291R
Independent Study
1 to 6:0 to 6:0 to 18  Not Offered

This course will allow the student to pursue an independent topic in computer science and study this topic in-depth in a flexible non-classroom environment. A maximum of three hours may be counted towards graduation without prior written CNS Department approval. The topic must be approved by the instructor and the CNS Department Chair. Lab access fee of $45 for computers applies.

CS 296R
CS Seminar
1 to 3:0 to 3:0 to 12  Not Offered

Presents topics of current interest to computer science in a seminar environment. Includes invited lectures by experts in the field, or a review of a particular technology by a faculty member. A maximum of three hours may be counted towards graduation without prior written CS Department approval. Lab access fee of $45 for computers applies.

CS 305G
Global Social and Ethical Issues in Computing
3:3:0  Fall, Spring
* Prerequisite(s): ENGL 2010 and (CS 1030 or CS 1400 or INFO 1120 or DGM 1110) and University Advanced Standing

Examines how computers have affected global society and how they could further affect it in the future. Challenges students to (1) examine several types of ethical reasoning to establish an ethical framework to assist in making normative judgments, (2) examine various ethical issues surrounding computer usage, particularly in differing societal contexts, (3) understand the responsibilities they bear, to know how their actions can affect both society and individual people in their own and other cultural settings, and to appreciate both the good and the harm they can do and (4) consider many of the moral and professional issues that those who work with computers might expect to face. Lab access fee of $45 for computers applies.

CS 3060
Operating Systems Theory
3:3:0  Fall, Spring
* Prerequisite(s): CS 2370, CS 2420, and University Advanced Standing. If a computer science or software engineering major, also CS 2810 and matriculation to computer science or software engineering. If a computer engineering major, also ECE 2700 and ECE 3730

Introduces the Unix operating system. Presents the underlying theory and concepts of an operating system, and covers the following topics in depth: device management, processes, threads, synchronization, scheduling, deadlocks, memory management, virtual memory, and file systems. Provides practical experience in writing programs that use standard Unix system calls to interface directly with the operating system. Lab access fee of $45 for computers applies.

CS 3240
Discrete Mathematical Structures II
3:3:0  Fall, Spring
* Prerequisite(s): CS 2300, CS 2420, CS 2810, computer engineering major or (matriculation to computer science or software engineering), and University Advanced Standing

Presents concepts from discrete mathematics including formal languages, and automata, including Turing machines, regular expressions, grammars, and computability. Lab access fee of $45 for computers applies.

CS 3250
Java Software Development
3:3:0  Fall, Spring
* Prerequisite(s): CS 2420, matriculation to computer science or software engineering if computer science or software engineering major, and University Advanced Standing

Covers the following topics in-depth: const correctness, emphasizing mastery of the standard C++ library. Covers the topics including namespace and the std namespace. Includes programming assignments for console, GUI, and ASP.NET applications. Lab access fee of $45 for computers applies.

CS 3300
Concurrency and Parallelism
3:3:0  Fall, Spring
* Prerequisite(s): CS 2420 or INFO 2200, matriculation to computer science or software engineering if computer science or software engineering major, and University Advanced Standing

Covers the features of the Python programming language. Includes scripting, dynamic typing, data types (sequences, sets, mappings, files, etc.), loops, iterators, generators, functions, coroutines, classes and objects, modules, packages and scope, runtime services, data wrangling, concurrent programming, etc. Lab access fee of $45 for computers applies.

CS 3310
Analysis of Algorithms
3:3:0  Fall, Spring
* Prerequisite(s): MATH 1210, matriculation to computer science or software engineering, and University Advanced Standing

Introduces development and mathematical analysis of fundamental computer algorithms. Teaches divide and conquer and greedy algorithms, dynamic programming, backtracking, branch and bound and NP-completeness. Lab access fee of $45 for computers applies.

CS 3320
Numerical Software Development
3:3:0  Fall, Spring
* Prerequisite(s): MATH 1210, matriculation to computer science or software engineering, and University Advanced Standing

Teaches the tools necessary for modern scientific computation. Covers computer representation of floating-point numbers, error analysis and numerical stability. IEEE floating-point standards, testing of numerical algorithms, calculation of elementary functions, roots of equations, solutions of linear systems, numerical integration and differentiation, interpolation and approximation, Monte Carlo methods. Lab access fee of $45 for computers applies.

CS 3370
C Plus Plus Software Development
3:3:0  Fall, Spring
* Prerequisite(s): CS 2370, CS 2810, matriculation to computer science or software engineering, and University Advanced Standing

Teaches C++ programming in a production environment, emphasizing mastery of the standard C++ library. Covers the topics including namespace and the std namespace. Includes programming assignments for console, GUI, and ASP.NET applications. Lab access fee of $45 for computers applies.
CS 3380  
JavaScript Software Development  
3:3:0  
Fall  
* Prerequisite(s): CS 2420, CS 2550, matriculation into the CS program, and University Advanced Standing  
Covers modern JavaScript features of functional programming, not JavaScript programming limited to the browser. Topics include rest/spread operators, string interpolation, regular expressions, object property shorthand, computed properties, method properties, destructuring assignment using object and array matching, module export/import, classes & inheritance, promises, iterators, generators, map/set, reflection, localization & formatting. Introduces common idioms and design patterns. Emphasizes accepted software engineering practices. Lab access fee of $45 for computers applies.

CS 339R  
Advanced Programming Language Other  
3:3:0  
Not Offered  
* Prerequisite(s): Varies depending on language offered; University Advanced Standing  
Introduces and explores advanced state-of-the-art programming languages and concepts. Investigates topics using language specific analysis, design, Rapid Application Development (RAD), implementation, and testing. Explores language specific syntax, semantics, libraries, the integrated development environment, and debugging techniques. Demonstrates language concepts by developing and writing programs. A maximum of 3 credits will count towards graduation; however, with prior written CNS Department approval more than 3 credits may be counted towards graduation. May be delivered hybrid. Lab access fee of $45 for computers applies.

CS 3410  
Human Factors in Software Development  
3:3:0  
Fall  
* Prerequisite(s): (CS 3250 or CS 3260 or CS 3370 or INFO 2200) and University Advanced Standing  
Studies issues of software analysis, design, and development for and from the perspective of human-computer interaction. Emphasizes design of the human-computer interface, effective presentation of data via graphics, color, text, sound, etc., to the user. Uses development tools for effective graphic presentation, the elements of effective information presentation to users. Lab access fee of $45 for computers applies.

CS 3450  
Principles and Patterns of Software Design  
3:3:0  
Fall, Spring  
* Prerequisite(s): (CS 3250 or CS 3260 or CS 3270 or CS 3370) and University Advanced Standing  
Gives students familiarity with modern principles and practices of software design. Emphasizes design patterns, including their motivation and the design principles on which they are based. Lab access fee of $45 for computers applies.

CS 3520  
Database Theory  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): Matriculation to computer science or software engineering and University Advanced Standing  
Introduces the underlying theories of Relational Database Management Systems (RDBMS) as well as their practical use retrieving data using both embedded SQL and relational algebra. Implements queries that start from simply joining, selecting, and projecting data, then progresses to more complex data retrieval techniques that require the use of set operations, sub-queries, and group by having clauses. Discusses entity-relationship (ER) modeling, creating a RDBMS from an ER model, B+ Trees, ACID transactions, normalization, locking, concurrency issues, and alternatives to an RDBMS. Lab access fee of $45 for computers applies.

CS 3540  
Game Programming  
3:3:0  
Fall  
* Prerequisite(s): Matriculation to computer science or software engineering and University Advanced Standing  
Teaches techniques for two and three-dimensional graphics programming using DirectX, OpenGL, and/or game engines built on those libraries. Presents concepts of game design that relate to the design and implementation of game software, including procedural generation of assets. Includes application of artificial intelligence concepts to game programming. Introduces the use of network programming techniques for development of multi-player games. May be delivered hybrid. Lab access fee of $45 for computers applies.

CS 3660  
Web Programming II  
3:3:0  
Fall, Spring  
* Prerequisite(s): CS 2420, CS 2550, and one of CS 3250 or CS 3260 or CS 3270 or CS 3370, and University Advanced Standing  
Builds upon concepts taught in CS 2550 Web Programming I. Teaches how to design, implement, test, and debug medium sized web applications using both client and server side technologies. Includes web security, data markup languages, server side scripting technologies, web application interactions with databases, and web service architectures. Teaches how to develop a full web-site having sophisticated user interactions at a variety of security levels. May be delivered hybrid. Lab access fee of $45 for computers applies.

CS 3670  
Network Programming  
3:3:0  
Spring  
* Prerequisite(s): CS 2690, CS 3250, and University Advanced Standing  
Covers concept and practical application of socket communication and network protocols. Presents design and implementation of networked applications. May be delivered online. Lab access fee of $45 for computers applies.

CS 3680  
Mobile Device Programming  
3:3:0  
Spring  
* Prerequisite(s): Matriculation to computer science or software engineering and University Advanced Standing  
Teaches software design and programming principles and practices for developing applications for mobile devices. Addresses issues such as application life-cycle, user interfaces on touch-screen devices, options for data storage and communication, power and performance, and using graphics and media. Examines hardware features common in mobile devices such as GPS, accelerometers, and cameras. Lab access fee of $45 for computers applies.

CS 3720  
Database Programming  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): CS 3250 and University Advanced Standing  
Develops the mastery of programming interfaces to local, remote, web and cloud databases. Uses console, Microsoft Windows WPF and web user interfaces. Lab access fee of $45 for computers applies.

CS 4100  
Database Management System Construction  
3:3:0  
Spring  
* Prerequisite(s): CS 3250 and (CS 3220 or CS 3250 or CS 3260) and University Advanced Standing  
Looks at issues involved in actually implementing a DBMS. Students will implement a relational DBMS. Features of the DBMS include project, select and join, indexing, B+ trees, parsing and query optimization. Lab access fee of $45 for computers applies.

CS 4230  
Software Testing and Quality Engineering  
3:3:0  
Fall  
* Prerequisite(s): CS 2450, one of (CS 3250 or CS 3260 or CS 3270 or CS 3370), ECE 3710, and University Advanced Standing  
Provides a comprehensive exploration of strategies for testing computer systems. Includes unit testing, system testing, developing software testing organization, and establishing software Total Quality Management (TQM) programs. Students will conduct system tests of software packages. Lab access fee of $45 for computers applies.

CS 4380  
Advanced High Performance Computer Architecture  
3:3:0  
Fall, Spring  
* Prerequisite(s): CS 3060, (CS 3370 Recommended), and University Advanced Standing  
Prepares theory and concepts of high-performance computer architectures. Includes digital logic, buses, registers, ALU’s, control units, pipelining, parallelism, DASD’s, SASD’s, RAID, caching, instruction-sets, memory hierarchy, multiprocessing, interconnection via networks. Lab access fee of $45 for computers applies.
Course Descriptions

CS 439R
Advanced Current Topics in Computer Science
1 to 3:1 to 3:0 On Sufficient Demand
* Prerequisite(s): Department approval and University Advanced Standing

Provides exposure to emerging technologies and topics of current interest in computer science. Varies each semester depending upon the state of technology. A maximum of 6 hours may be counted toward graduation without CS Department approval. Lab access fee of $45 for computers applies.

CS 4400
Software Engineering II
3:3:0 Fall
* Prerequisite(s): CS 2450, CS 2600, CS 3520, and (CS 3250 or CS 3260 or CS 3270 or CS 3370), and University Advanced Standing
* Prerequisite(s) or Corequisite(s): CS 3450

Covers principles and practices of early phases of software development life cycle. Studies software requirements elicitation, analysis, and design. Includes in-depth, practical study of at least one major software development approach as applied to a realistic organizational systems problem. Explores requirements definition, analysis including prototyping, functional and nonfunctional requirements specification, legacy systems, and architecture patterns. Lab access fee of $45 for computers applies.

CS 4440
Applied 3D Computer Graphics
3:3:0
* Prerequisite(s): CS 2420 with a C or better and (CS 3220 or CS 3250 or CS 3260 or CS 3270 or CS 3370 or CS 339R), and University Advanced Standing

Presents theory and implementation concepts of 2D and 3D computer graphics as used in areas such as computer games, movie special effects, scientific visualization and art. Focuses on the development of applications using an existing cross-platform graphics library rather than on the development of a graphics library. Lab access fee of $45 for computers applies.

CS 4450
Analysis of Programming Languages
3:3:0 Fall, Spring
* Prerequisite(s): CS 3240, (one of CS 3250, CS 3260, CS 3270 or CS 3370) and University Advanced Standing

Offers the mature student an in-depth understanding of the design and implementation of programming languages. Explores criteria for evaluating programming languages as a context for comparing both traditional and current popular languages. Includes the evolution of programming languages, the concept of binding, type checking, static and dynamic scoping, control structures, subprograms and parameter passing methods, and concurrency. Explores the functional programming paradigm in-depth. Includes programming assignments in at least two different programming languages, at least one of which being a functional language such as LISP, Scheme, ML, or Haskell. Lab access fee of $45 for computers applies.

CS 4470
Artificial Intelligence
3:3:0 Fall, Spring
* Prerequisite(s): CS 3240, 3310, 3320, and (CS 3250 or CS 3260 or CS 3270 or CS 3370), and University Advanced Standing

Presents theory, organization, concepts, and principles of artificial intelligence methodologies including neural networks, expert systems, machine learning algorithms, and genetic algorithms. Lab access fee of $45 for computers applies.

CS 4480
Digital Image Processing and Computer Vision
3:3:0 Spring
* Prerequisite(s): CS 2300, CS 2420, CS 3320, and University Advanced Standing

Prepares students for creating software solutions in the multimedia market of today and into the future. Covers digital sampling of analog signals, basic image processing in the spatial domain and frequency domain, edge and line detection, photo enhancement, feature extraction, and object recognition. May be delivered online. Lab access fee of $45 for computers applies.

CS 4480P
Compiler Construction
3:3:0 Fall, Spring
* Prerequisite(s): CS 4380, CS 4450, and University Advanced Standing

Studies theory, analysis and design of class developed compiler. Requires completion of a program level assessment test. Lab access fee of $45 for computers applies.

CS 4500
Advanced Topics in Database
3:3:0 Spring
* Prerequisite(s): (CS 3520 or INFO 3410) and University Advanced Standing

Covers transaction processing, concurrency control techniques, database recovery techniques, database security and authorization, database integrity, distributed databases and client-server architectures, load balancing, data warehousing, data mining, database machines, mobile database, multimedia database, GIS, genome data management, data fragmentation, data encryption, locking, and deadlock. Lab access fee of $45 for computers applies.

CS 4550
Software Engineering III
3:3:0 Spring
* Prerequisite(s): CS 4400, CS 4230, and University Advanced Standing

Senior-level, capstone project experience course. Requires operating as part of a high performance team. Includes completing the design and implementation of a large-scale software development project. Combines major milestone presentations to project clients, completing a portfolio of project-related artifacts, and offer an evaluation of the project and team experience. Requires students to take a program level assessment. Lab access fee of $45 for computers applies.

CS 4610
TCP IP Internet Architecture
3:3:0 Fall
* Prerequisite(s): CS 2690, matriculation to computer science or software engineering, and University Advanced Standing

Provides theoretical, practical, administrative perspectives of the TCP/IP protocol and its use with the Internet. Includes coverage of IPv4, IPv6, TCP, OSPF and related protocols, IP addressing, subnetting issues, and domain name services are also covered. Lab access fee of $45 for computers applies.

CS 4620
Data Mining
3:3:0 Not Offered
* Prerequisite(s): CS 3520 and University Advanced Standing

Introduces the process of knowledge discovery and the basic theory of automatic extracting models from data, validating those models, solving the problems of how to extract (mine) valid, useful, and previously unknown interesting patterns from a source (database or web) which contains an overwhelming amount of information. Explains various models (decision trees, association rules, linear model, clustering, bayesian network, neural network) and how to apply them in practice. Algorithms applied include searching for patterns in the data, using machine learning, and applying artificial intelligence techniques. Teaches how to implement several relevant algorithms and use existing tools to mine real-world, business driven databases. Lab access fee of $45 for computers applies.

CS 4660
NoSQL Database Development
3:3:0 Fall
* Prerequisite(s): Matriculation into the Computer Science or Software Engineering program, CS 3520, and University Advanced Standing

Introduces theory, concepts, architecture, and use of non-traditional database management systems. Discusses the appropriate use of each in its own niche. Lab access fee of $45 for computers applies.

CS 4670
Undergraduate Research Project for Networking Specialization
3:3:0 Spring
* Prerequisite(s): CS 3660, CS 4610, and University Advanced Standing

Creates a system suitable for presentation and defense including project proposal, management plan, system design documentation, relevant testing and benchmarks, and final written and oral reports. Includes system design, systems integration and systems management. Encourages open source and community service projects. Requires completion of a program level assessment test. Lab access fee of $45 for computers applies.
CS 4690
Distributed Internet Application Development
3:3:0 Fall
* Prerequisite(s): CS 3660 and (CS 3250 or CS 3260 or CS 3270 or CS 3370), and University Advanced Standing

Provides experience building significant software solutions that span large heterogeneous networks. Includes heterogeneous operating systems, data stores (SQL and NoSQL), service architectures, remote objects, remote services, and data exchange. Lab access fee of $45 for computers applies.

CS 4770
Software Development for Robotics
3:3:0 On Sufficient Demand
* Prerequisite(s): CS 3370 and University Advanced Standing; CS 4470 recommended

Teaches students through hands on development the intricacies of programming robots such as autonomous vehicles and/or industrial manufacturing robots. Includes behavior based programming, intelligent agents, low level device drivers, sensor calibration and processing, real time programming requirements, motion planning and navigation, and machine learning. Lab access fee of $45 for computers applies.

CS 479R
Advanced Current Topics in Computer Science
1 to 3:0 to 3:0 to 12 On Sufficient Demand
* Prerequisite(s): Department Approval and University Advanced Standing

Provides exposure to emerging technologies and topics of current interest in computer science. Varies each semester depending upon the state of technology. May be repeated for a maximum of 6 credit hours toward graduation without prior written CS Department approval. Lab access fee of $45 for computers applies.

CS 481R
Internship
1 to 8:1 to 8:0 Fall, Spring, Summer
* Prerequisite(s): Matriculation to computer science or software engineering, Instructor Approval, and University Advanced Standing

Provides opportunity to use work experience to add to educational background and academic experience. A maximum of 3 credit hours may be counted towards graduation without prior written CNS Department approval. May be graded Cr/No credit.

CS 4880
Cloud Computing
3:3:0 Spring
* Prerequisite(s): Matriculation into the Computer Science or Software Engineering program, CS 4690, and University Advanced Standing

Develops mastery of programming to cloud databases. Emphasizes real-world scenarios involving architecture, build, development, testing, and deployment on commercially available cloud databases. Covers concurrent programming, distributed programming, microservices, migration, and hybrid clouds. Lab access fee of $45 for computers applies.

CS 489R
Undergraduate Research Project
2 to 6:2 to 6:0 Not Offered
* Prerequisite(s): Department approval and University Advanced Standing

Combines and integrates concepts, methodologies, and skills developed in previous Computer Science course work. Studies the specification, analysis, design, implementation, and completion of a complex and comprehensive project. Requires a project/portfolio using project management techniques. A maximum of 3 hours may be counted towards graduation without prior written Computer Science Department approval. Lab access fee of $45 for computers applies.

CS 4900
Full Stack Web Senior Capstone
3:3:0 Spring
* Prerequisite(s): CS 3410, CS 4660, (CS 3250 or CS 3260), and University Advanced Standing

Brings all pieces of full stack web development into a complete capstone project. Covers design, development and deployment of all parts of a web application. Lab access fee of $45 for computers applies.

CS 491R
Independent Study
1 to 6:0 to 6:0 to 18 Not Offered
* Prerequisite(s): Prior written Department Chair approval and University Advanced Standing

Offers independent study as directed by a faculty advisor in reading, individual projects, etc. Varies each semester depending upon the state of technology. A maximum of 3 credit hours may be counted towards graduation without prior written Department approval. Lab access fee of $45 for computers applies.

CS 496R
Senior Seminar
1 to 3:0 to 3:0 to 12 Not Offered
* Prerequisite(s): University Advanced Standing

Presents current state-of-the-art and/or best-practices topics in a seminar format. A maximum of 3 credits will count towards graduation. Lab access fee of $45 for computers applies.

CS 6100
Database Management System Construction
3:3:0 Fall
* Prerequisite(s): Acceptance into the Master of Computer Science program

Explores issues associated with implementing a DBMS. Provides experience designing and implementing a relational DBMS with features such as projection, select and join, indexing, B+ trees, and parsing. Examines database performance and implements query optimization.

CS 6150
Advanced Algorithms
3:3:0 Fall
* Prerequisite(s): Acceptance into the Master of Computer Science program

Explores applications and tradeoffs of state of the art algorithms in parallel/concurrent programming, data search, graphics, graph theory, data structures, mathematical programming, machine reasoning, machine learning, network flow, and other domains. Applies both theory and practice to various projects with a focus on concurrent/parallel programming.

CS 6300
Software Engineering Leadership
3:3:0 Fall
* Prerequisite(s): Acceptance into the Master of Computer Science program

Prepares students to be software project leaders. Examines modern software processes and project management. Identifies important roles in software projects and their contribution to project success. Explores interaction of business needs and project development.

CS 6400
Modern Databases
3:3:0 Fall, Spring
* Prerequisite(s): CS 6470

Evaluates recent trends in database technology, including the history of NoSQL, NoSQL aggregate data, distribution models, and NoSQL consistency. Teaches data analysis and machine learning by exploring concepts associated with processing massive data sets such as parallel data analysis through mapReduce and other algorithms. Explores technologies associated with modern databases management systems, such as in-memory databases, cloud database management systems.

CS 6470
Machine Learning
3:3:0 Spring
* Prerequisite(s): Acceptance into the Master of Computer Science program


CS 6480
Advanced Machine Learning
3:3:0 Spring
* Prerequisite(s): CS 6470

### Course Descriptions

**CS 6500**  
Software Architecture  
3:3:0  
Spring  

* Prerequisite(s): Acceptance into the Master of Computer Science program

Evaluates software architecture and the high level design of large scale software systems. Explores common architectural styles and patterns. Teaches techniques of documenting and assessing software architectures. Teaches characteristics of software architecture evolution. Evaluates several large-scale software architectures.

**CS 6510**  
Design and Simulation of Operating Systems  
3:3:0  
* Prerequisite(s): Acceptance into the Master of Computer Science program

Analyzes current topics in operating systems design and simulation. Covers modern computer architecture; several types of memory management; current scheduling algorithms for multiple processes; disk management; virtual memory and interprocess communication.

**CS 6600**  
Graduate Project I  
3:3:0  
* Prerequisite(s): CS 6300, CS 6510, CS 6400

Teaches the design and development of a walking skeleton with students participating in all aspects of software development, including: requirements elicitation, architecture, design, implementation, testing, and deployment. First semester of a two-semester capstone course.

**CS 6610**  
Graduate Project II  
3:3:0  
* Prerequisite(s): CS 6600

Guides through completion and delivery of the large-scale system started in CS 6600. Delivers appropriate system documentation. Teaches the writing and execution of system tests that ensure a high quality system. Must be taken immediately after CS 6600.

**CS 6620**  
Advanced Data Mining and Visualization  
3:3:0  
* Prerequisite(s): Acceptance into the Master of Computer Science program; and (CS 3520 or the Departmental Approval)

Explores advanced concepts of data mining and knowledge discovery including sequence mining, audio video mining, and text mining. Analyzes, designs, develops, and evaluates data mining techniques and tools, including data preprocessing, data characterization and comparison, decision trees, association rule mining in large databases, classification and prediction. Uses clustering and cluster analysis and statistical modeling, advanced methods and applications, extracting meaningful patterns from massive datasets using methods such as neural networks and machine learning algorithms.

**CS 6700**  
Advanced Mathematics for Computer Science  
3:3:0  
Spring  

* Prerequisite(s): Acceptance into the Master of Computer Science program

Solves computer science problems using advanced mathematical models. Applies calculus functions of multiple variables, linear equations, matrix algebra, determinants, Gaussian elimination, eigenvalues, linear programming, and finite-state Markov chains.

**CS 6730**  
Advanced Embedded Systems Engineering  
3:3:0  
* Prerequisite(s): CS 6510

Provides a hands-on design experience of software design at the system layer where hardware meets software. Explores embedded computing platforms, interacting with the external world, real-time operation, constraints and optimization, and other techniques which are important for building embedded systems that work in the real world. Applies design/implementation/debugging of embedded functionality through a series of projects and homework exercises.

**CS 6800**  
Computer Graphics and Mixed Realities  
3:3:0  
Fall, Spring  
* Prerequisite(s): Acceptance into the Master of Computer Science program

Introduces computer graphics beyond 2D and 3D graphics into mixed reality, where virtual objects interact with the real world. Explores topics such as 2D/3D graphics, augmented reality, virtual reality, immersive visualization, the use of graphics/physics engines, and 3D printing.

### Dance (DANC)

**DANC 1010**  
Dance as an Art Form  
3:3:0  
Fall, Spring, Summer

Explores multi-cultural dance and movement expression. Studies the different ways in which world cultures are expressed through dance and movement. Overviews dance history and traces the evolution of dance as an art form. Examines the art and craft of dance making, dance as an expression of culture and community. Explores dance as artistic expression in 20th Century America. Course lab fee of $30 for World Dance applies.

**DANC 1160**  
Music for Dancers  
1:0:3  
Spring

Presents a fundamental approach to the basic elements of music with an emphasis on its relationship to dance. Studies simple and complex rhythmic patterns, rhythmic analysis of select world music styles (African, Eastern European, and American Funk rhythms), vocalizing, instrumentation, score reading, musical structure, and compositional principles. Includes vocal, instrumental, and movement participation; lecture; writing; and discussion.

**DANC 1200**  
Beginning Modern/Contemporary Dance  
1:0:2  
Fall, Spring

Gives students experience in modern/contemporary dance technique, emphasizing locomotor skills and movement expression. Introduces elements of dance, time, space, and energy.

**DANC 127R**  
Ballet Technique I  
3:1:6.5  
Fall, Spring

For intermediate level ballet students. Requires ability to handle the varying technical difficulties of classical ballet. Includes theories from Soviet, French, Italian, American, English, and Danish schools. Provides hands-on experience in barre and center floor work to increase strength, flexibility. Emphasizes body alignment and correct placement. Prepares students for a more intensive study in ballet. Does not fulfill a dance major requirement. May be repeated for a total of 18 credits. Course Lab fee of $216 for support applies.

**DANC 1330**  
Studio Workshop Creative Process in Dance  
1:5:1.5  
Not Offered

A multi-disciplinary approach to the creative process in dance. Overviews the creative process and explores the development of individual artistry and personal voice in dance. Examines how the creative process in other disciplines informs creative work in dance. Includes participation and lecture.

**DANC 141R**  
Introduction to Modern/Contemporary Dance Technique and Theory  
2:1:3  
Fall, Spring

Increases physical skills in dance technique and performance technique. Introduces principles and concepts that govern human movement. Emphasizes development of strength, flexibility, coordination, core support, and movement expressiveness. Includes aspects of composition, improvisation, and performance as they relate to technique. Develops foundational skills in modern dance technique. Prepares students for more intensive study. Does not fulfill a dance major requirement. May be repeated for a total of 6 credits toward graduation.
DANC 143R
Modern/Contemporary Dance Technique and Theory I/Semester I
3:1:6:5 Fall, Spring, Summer
* Prerequisite(s): Audition
Introduces Dance majors to modern/contemporary dance technique. Focuses on development of solid foundational skills in modern dance technique and theory that prepare the student for an intensive major program. Emphasizes the development of strength, flexibility, core support, coordination, kinesthetic awareness and memory, and movement expressiveness. Includes experience in improvisation and composition as a means of understanding and applying technical skills in performance settings. May be repeated for a total of six credits toward graduation. Course Lab fee of $216 for support applies.

DANC 144R
Modern/Contemporary Dance Technique and Theory II/Semester II
3:1:6:5 Spring, Summer
* Prerequisite(s): DANC 143R
Focuses on development of solid foundational skills in modern dance/contemporary dance technique and theory that prepare the student for an intensive major program. Emphasizes the development of strength, flexibility, core support, coordination, kinesthetic awareness and memory, and movement expressiveness. Includes experience in improvisation and composition as a means of understanding and applying technical skills in performance settings. May be repeated for a total of six credits toward graduation. Course Lab fee of $216 for support applies.

DANC 1500
Beginning Jazz Dance
1:0:2 Fall, Spring
Gives students experience in jazz dance including rhythms, style, and jazz techniques. Includes basic jazz terminology.

DANC 1510
Intermediate Jazz Dance
1:0:3 Fall, Spring
* Prerequisite(s): Instructor Approval
For students who have fundamental dance skills and basic Jazz techniques. Teaches intermediate jazz technique, style and rhythm. Increases coordination, stamina, strength and flexibility through appropriate principles of jazz training.

DANC 1520
Folk Dance I
1:0:2 Not Offered
Presents music, dance steps, and styles of folk dances from different countries. Teaches basic dance formations, positions, and terminology.

DANC 1530
Folk Dance II
1:0:2 Not Offered
* Prerequisite(s): DANC 1520
Acquaints students with intermediate level folk dances from around the world, including steps, styling, music and costumes. Discusses cultural characteristics that are expressed through folk dance.

DANC 1540
Clogging I
1:0:2 Not Offered
Teaches basic steps, styling and history of clogging. Includes dances and freestyle clogging choreography.

DANC 1550
Clogging II
1:5:1.5 Not Offered
* Prerequisite(s): DANC 1540 or equivalent experience
Teaches buck-style clogging and steps of complex rhythm and structure. Includes upper body movement patterns and emphasizes total body coordination. Examines contemporary and historical trends in clogging.

DANC 1560
African Dance I
1:0:2 Fall, Spring
Explores traditional movements and rhythms from Central and West Africa and is accompanied by live drumming. Focuses on the development of solid foundational skills in African dance technique. Emphasizes the cultural significance of various dances and rhythms as well as the influences of the African aesthetic in contemporary dance and culture. Includes participation, video, and guest instructors from Africa. Course fee of $40 for support applies.

DANC 1580
Tap Dance I
1:0:2 Not Offered
Introduces basic steps and rhythms of tap dance. Reviews the history of this American theatrical dance form.

DANC 1590
Hip Hop Dance I
1:0:2 Fall, Spring, Summer
Explores a variety of Hip-hop styles and moves to the latest music. Introduces students to fundamental dance techniques. Discusses Hip-hop as a cultural movement.

DANC 1600
Hip Hop II
1:0:3 Fall, Spring
* Prerequisite(s): Previous Hip-Hop dance experience and Instructor Approval
For all students interested in developing intermediate/advanced skills in Hip-Hop. Explores Hip-Hop through different styles, across the floor combinations, break dancing, and in-class performances. Broadens the students’ understanding of this fun, loose, upbeat, and energetic style of dance and culture.

DANC 1610
Dance Conditioning
1:5:2.5 Fall, Spring
For dance students enrolled in modern dance, ballet, jazz, or ballroom dance classes and for students interested in dance-specific conditioning. A beginning course in dance conditioning. Covers theory and practice. Emphasizes body balancing in strength, flexibility and endurance training supported by knowledge of basic principles of anatomy and biomechanics. Includes stress management, nutrition, body image, somatotypes, and body connectivity work.

DANC 1620
Polynesian Dance I
1:0:3 Fall
Explores basic forms of authentic Polynesian dance with a focus on the dances of Tonga, New Zealand, Tahita and Hawaii. Teaches the origins of the Polynesian people, their “tapu” systems, culture, religions, musical instruments and legends through movement classes, research, discussion and video. Develops understanding of Polynesian dance and the sacredness of this beautiful art form.

DANC 1700
American Social Dance I
1:0:2 Fall, Spring, Summer
For students with no prior American Social Dance experience. Teaches beginning (Bronze) level patterns of American Social Dance including Fox trot, Triple Swing, Waltz, and Cha Cha. Emphasizes on a beginning level, correct rhythm, poise, footwork and foot positions, dance position, and etiquette. Successful completers will have a good general knowledge of Bronze level curriculum. Course fee of $10 for practical experience applies.

DANC 1710
International Ballroom Dance I
1:0:2 Fall, Spring, Summer
Teaches beginning (Bronze) level patterns of International Ballroom Dance including Waltz, Quickstep, and Tango. Introduces correct rhythm, poise, footwork, foot positions, dance position, posture, and leading and following. Provides general knowledge of Bronze level curriculum. Course fee of $10 for practical experience applies.

DANC 1720
Latin Ballroom Dance I
1:0:2 Fall, Spring, Summer
Teaches beginning (Bronze) level patterns of International Style Latin Rumba, Samba, and Cha Cha. Introduces correct rhythm, poise, footwork, and foot positions. Provides general knowledge of Bronze level curriculum. Course fee of $10 for practical experience applies.

DANC 1780
Country Western Dance I
1:0:2 Not Offered
Teaches Western Swing, Line Dances, Texas Two-Step, Cotton Eyed Joe, Schottische, and Heel Toe polka. Stresses rhythm, dance with a partner, and developing a country western dance style. Uses lecture, demonstration, and active class participation.

DANC 1790
Country Western Dance II
1:0:2 Not Offered
* Prerequisite(s): DANC 1780
Teaches Pony Swing, East Coast Swing, Waltz, Two-Step, and Line Dances. Stresses rhythm, dance with a partner, and developing a country western dance style. Uses lecture, demonstration, and active class participation.
Course Descriptions

DANC 2100
Teaching Dance for Children FF
3:3:0  Fall, Spring
Introduces fundamentals of teaching dance to children in the community, school and home. Includes philosophy, educational benefits, lesson integration, and teaching methods. Emphasizes content creation based on state and national standards. Assists students to become independent, creative, and productive learners as they acquire the knowledge, skills, and experience to teach children ages 5–12.

DANC 2110
Orientation to Dance FF
3:2:2  Fall, Summer
For students interested in pursuing a career in dance. Introduces students to the discipline of dance as an academic as well as artistic field of study. Examines various dimensions of the discipline such as performance, teaching, choreography, dance science/medicine, movement analysis and fundamentals, dance criticism, interdisciplinary collaboration, and current issues. Includes lecture, readings, discussion, writing and participation. Prepares the student entering the Dance emphasis.

DANC 221R
Pointe II
1:0:3  Fall, Spring
* Prerequisite(s): By audition only.
For dance majors and other students with an interest in the professional dance world. Emphasizes women's pointe work. Builds strength and control necessary for further advanced study. Explores various music components necessary for development of virtually en pointe. Completers will have skills necessary to progress to advanced pointe class. Includes guest choreographers and teachers. May be repeated for a total of six credits toward graduation. Course Lab fee of $120 for support applies.

DANC 222R
Ballet Technique and Theory II for Men
1:0:3  Fall, Spring
* Corequisite(s): DANC 227R or DANC 327R
Focuses on men's ballet technique at a beginning level and prepares men dance majors for the professional world. Emphasizes jumps and technical abilities specifically for men. Builds strength and control necessary for further intermediate study. Explores the development of musicality and epaulement as it relates to artistic interpretations. Prepares students to perform simple men's variations from the classical repertoire. May be repeated for a total of four credit hours.

DANC 2250
Character Dance I
1:0:3  Fall
* Prerequisite(s): Intermediate equivalent skill level to be determined by audition.
First of a two-semester sequence. Must be taken in sequence. For ballet students at an intermediate or higher skill level. Studies theatre dance based on ethnic styles within ballet performance context.

DANC 2260
Character Dance II
1:0:3  Not Offered
Second of a two-semester sequence course. Must be taken in sequence. For ballet students at an intermediate or higher skill level. Studies theatre dance based on ethnic styles within ballet performance context.

DANC 227R
Ballet Technique II
3:1:6.5  Fall, Spring, Summer
* Prerequisite(s): Instructor Approval
For intermediate level ballet students. Requires ability to handle the varying technical difficulties of classical ballet. Includes theories from Soviet, French, Italian, American, English, and Danish schools. Provides hands-on experience in barre and center floor work to increase strength, flexibility, and artistic interpretation. Emphasizes body alignment and correct placement. Successful completers should be fully prepared to participate in an upper division classical ballet course. May be repeated for a total of 18 credits. Course Lab fee of $216 for support applies.

DANC 2330
Improvisation
1:0:3  Spring
For students interested in experiencing and developing skills in physical inventiveness and performance intuition and immediacy. Provides guided exploration in the elements of dance for the creative development of personal movement vocabulary, spontaneous group interaction, and the ability to recall and give form to movement generated improvisationally. Course lab fee of $64 for Dance Accompanist applies.

DANC 2340
Composition
2:1:3  Fall
* Prerequisite(s): DANC 2330
* Prerequisite(s) or Corequisite(s): DANC 143R, or DANC 144R, or Instructor Approval
For students interested in experiencing and developing skills in dance composition. Includes conceptual and practical exploration of the basic elements of dance in both solo and group forms. Investigates the relationship between choreographic intention, movement invention, content, and form/structure. Introduces choreographic devices and forms and encourages experimentation in the choreographic process. Emphasizes the process of creating and giving form to a personal movement vocabulary. Course lab fee of $85 for Dance Accompanist applies.

DANC 2350
Dance and Technology
2:1:2  Spring
Explores fundamental approach to Dance for Camera in its various forms. Includes documentary-style videos as well as the creation of dances made specifically for the screen. Explores three-dimensional movement through the two-dimensional medium of the camera. Examines how editing choices creates dance composition in video form. Discusses aesthetic and historical representations of the body through media. Covers choreography for the camera, video camera basics, elements of a video shoot, and video-editing while preparing the student for further integration of dance and technology, such as the use of video projection during live dance performance. Provides the necessary skills to professionally produce video resumes. Lab access fee of $10 for computers applies.

DANC 243R
Modern/Contemporary Dance Technique and Theory Level I/Semester I
3:1:6.5  Fall
* Prerequisite(s): by audition
Teaches fundamental body and performance technique. Emphasizes locomotor skills and movement progressions as well as elements of body, effort, shape, space, and time. May be repeated for 9 credits toward graduation. Course Lab fee of $216 for support applies.

DANC 244R
Modern/Contemporary Dance Technique and Theory Level II/Semester II
3:1:6.5  Spring
* Prerequisite(s): DANC 243R
Focuses on development of technical and performance skills in modern/contemporary dance. Includes concepts of applied anatomy and kinesiology as well as Bartenieff Fundamentals. Emphasizes clarity of movement intention and interpretation in movement progressions. May be repeated for a maximum of 9 credits toward graduation. Course Lab fee of $216 for support applies.

DANC 247R
Repertory
1:0:3  Fall, Spring
* Prerequisite(s): By Audition
* Corequisite(s): DANC 143R, DANC 144R, DANC 243R, or DANC 244R
For students with advanced technical, performance, and artistic skills in Modern/Contemporary Dance interested in performing amateur and professional choreographic works. Emphasizes study and performance of student, guest, and faculty choreography. Introduces students to choreographic approaches of historical and current works. Includes performance in formal and informal concerts. Repeatable for a maximum of three credit hours.
DANC 248R
Special Topics In Dance
2:1:2 Fall, Spring
Provides students an in-depth exploration of specialized dance forms outside of traditional course offerings, with an emphasis on World Dance forms such as Polynesian, Classical Indian, Argentine Tango, Capoeira, Balinese and Tibetan Folk Dance. Focuses on learning specific dance forms through active participation. Includes integration of theoretical, historical and social concepts which deepen the student’s understanding of the context in which the dance form was practiced historically and is practiced today. May be repeated for a total of 6 credits toward graduation.

DANC 250R
Advanced Jazz Dance
2:1:3.5 Fall, Spring
* Prerequisite(s): Instructor Approval
Explores advanced level jazz technique, performance and composition skills. Includes preparation for the professional audition through movement experiences, lecture with group discussions, video, guest teacher(s), and group projects. May be repeated for a total of six credit hours.

DANC 2560
African Dance II
1:0:3 Not Offered
* Prerequisite(s): DANC 1560 or previous African Dance experience
Explores dance traditions of West and Central Africa, as well as other countries in the African Diaspora, including Brazil, Cuba, and Haiti. Focuses on strong foundational skills in various African dance styles and emphasizes the cultural and historical significance of the various dances and rhythms. Explores more complex movement and rhythmic structures than African I and challenges the students’ physical stamina. Accompanied by live drumming. Course fee of $50 for support applies.

DANC 265R
Fundamentals of Movement
2:1:2 Fall
* Prerequisite(s): DANC 1200 recommended
For students and community members who want to move with greater ease, efficiency, and sense of connection in the body. Emphasizes body awareness and developmental human movement patterning. Makes application to the areas of dance, sport, theater, somatics, performance, and psychology. Includes Bartenieff Fundamentals and basic principles of Laban Movement Analysis. Develops integrated and harmonious movement patterns in the body. May be repeated for four credits total toward graduation.

DANC 2670
Introduction to Laban Studies
2:1:2 Spring
* Prerequisite(s): DANC 265R
For all dance students and others interested in understanding how the components of movement combine to create functional and expressive movement statements. Introduces the basic principles of Laban Movement Analysis (LMA). Presents a comprehensive system for analyzing the complexity of human movement based on the theories of Rudolph Laban and Irmgard Bartenieff. Utilizes physical performance and observation methods. Emphasizes the process of perceiving and making meaning of human movement from a variety of contexts.

DANC 270R
American Social Dance II
1:0:3 Fall, Spring, Summer
* Prerequisite(s): Instructor Approval
For students with Bronze level American Social Dance experience or equivalent. Teaches intermediate (Silver) level patterns of American Social Dance including Foxtrot, Waltz, Triple Swing, Viennese Waltz, West Coast Swing, and Cha Cha. Emphasizes, on an intermediate level, correct rhythm, poise, footwork, and foot positions, dance position, and etiquette. Successful completers will have a good general knowledge of Silver level curriculum. May be repeated for a maximum of 2 credits toward graduation. Course fee of $20 for practical experience applies.

DANC 271R
International Ballroom Dance II
1:0:3 Fall, Spring, Summer
* Prerequisite(s): Instructor Approval
For students with Bronze level International Ballroom Dance experience. Teaches the intermediate (Silver) level patterns of International Style Waltz, Quickstep, Tango, Foxtrot, and Viennese Waltz. Emphasizes, on an intermediate level, rhythm, poise, footwork, foot positions, dance position, alignment, rise and fall, body flight and correct leading and following. Successful completers will have a good general knowledge of Silver level curriculum. May be repeated for a total of two credits toward graduation. Course fee of $20 for practical experience applies.

DANC 272R
Latin Ballroom Dance II
1:0:3 Fall, Spring, Summer
* Prerequisite(s): Instructor Approval
For students with Bronze level Latin Ballroom Dance experience or equivalent skill level. Teaches the intermediate (Silver) level patterns of International Style Rumba, Samba, Cha Cha, and Paso Doble. Emphasizes, on an intermediate level, rhythm, poise, footwork, foot positions, dance position, alignment, and correct leading and following. Successful completers will develop a good general knowledge of Silver level curriculum. May be repeated for a total of two credits toward graduation. Course fee of $20 for practical experience applies.

DANC 276R
Ballroom Dance Company Back Up Team
1:0:3 Fall, Spring, Summer
* Prerequisite(s): By audition only.
For students with or without prior ballroom dance team experience. Teaches American and International techniques as a performance discipline. Includes choreography, rehearsals, performances, demonstrations, competition. Also teaches fundamentals of formation team dancing, stage performance and team competition. Requires individual practice. Prepares dancers for audition to touring team. May be repeated for up to four credits toward graduation. Course fee of $50 for specialized clothing applies.

DANC 281R
Internship in Dance I
1 to 3:1 to 3:0 Fall, Spring, Summer
* Prerequisite(s): Departmental Approval
Provides an opportunity for students to receive college credit and explore career options in dance by working in dance-related fields. Applies academic concepts to actual work experiences. Requires approval of faculty sponsor and completion and acceptance of application. Requires completion of an orientation, completion of Master Agreement between UVU and employer, completion of goals and tasks as required by academic department, and completion of final evaluation. May be repeated for a total of 6 credits toward graduation. May be graded credit/no credit.

DANC 3140
Dance Production and Lighting
2:1:2 Spring
* Prerequisite(s): University Advanced Standing
Introduces essential aspects of dance production. Focuses on theory and practice of lighting for dance. Includes consideration of costuming, set design, sound design, backstage organization, make-up for dance, promotion, and programming. Includes lecture and lab experience.

DANC 3160
Internship in Dance II
1:0:3 Fall, Spring, Summer
* Prerequisite(s): Departmental Approval
Introduces students to dance-related fields. Applies academic concepts to actual work experiences. Requires approval of faculty sponsor and completion and acceptance of application. Requires completion of an orientation, completion of Master Agreement between UVU and employer, completion of goals and tasks as required by academic department, and completion of final evaluation. May be repeated for a total of 6 credits toward graduation. May be graded credit/no credit.

DANC 3140
Dance Production and Lighting
2:1:2 Spring
* Prerequisite(s): University Advanced Standing
Introduces essential aspects of dance production. Focuses on theory and practice of lighting for dance. Includes consideration of costuming, set design, sound design, backstage organization, make-up for dance, promotion, and programming. Includes lecture and lab experience.

DANC 3160
Internship in Dance II
1:0:3 Fall, Spring, Summer
* Prerequisite(s): Departmental Approval
Introduces students to dance-related fields. Applies academic concepts to actual work experiences. Requires approval of faculty sponsor and completion and acceptance of application. Requires completion of an orientation, completion of Master Agreement between UVU and employer, completion of goals and tasks as required by academic department, and completion of final evaluation. May be repeated for a total of 6 credits toward graduation. May be graded credit/no credit.
Course Descriptions

DANC 321R
Pointe III
1:0:3  Fall, Spring
* Prerequisite(s): Advanced equivalent skill level to be determined by audition.
* Corequisite(s): DANC 327R

For women dance majors and others with an interest in the professional dance world. Emphasizes pointe. Builds strength and control. Explores various styles from classical and contemporary repertoire. Women develop successful virtuosity en pointe. Completers will have skills necessary to perform at an advanced technical skill level and have skills necessary to perform variations from classical repertoire. Includes guest teachers. May be repeated for a total of six credits toward graduation. Course Lab fee of $120 for support applies.

DANC 322R
Ballet Technique and Theory III for Men
1:0:3  Fall, Spring
* Corequisite(s): DANC 327R or DANC 427R

Focuses on men's ballet technique at an intermediate and prepares men dance majors for the professional world. Emphasizes jumps and technical abilities specifically for men. Builds strength and control necessary for further study. Explores the development of musicality and epaulement as it relates to artistic interpretations. Prepares students to perform men's variations from the classical repertoire. May be repeated for a total of four credit hours.

DANC 327R
Ballet Technique III
3:1:6.5  Fall, Spring
* Prerequisite(s): DANC 227R or Advanced equivalent skill level to be determined by audition

For ballet students at an advanced skill level who are able to handle the varying technical difficulties of classical ballet. Provides hands-on experience in barre and center floor work to increase strength and flexibility. Emphasizes the development of musicality as it relates to artistic interpretations. Successful completers will be prepared to participate on a corp de ballet professional performance level. May be repeated for a total of 18 credits toward graduation. Course Lab fee of $216 for support applies.

DANC 3330
Modern Dance Workshop
2:1:2  Fall
* Prerequisite(s): DANC 2340 and University Advanced Standing

A continuation of DANC 2330 and DANC 2340. Emphasizes the relationship between improvisation and composition in the choreographic process. Focuses on developing fluency in creating and developing content and creating appropriate form for that content. Explores established choreographic forms in both solo and small group settings. Requires some choreographic work outside of class.

DANC 3340
Ballet Choreography
2:1:2  Spring
* Prerequisite(s): DANC 2330, DANC 2340, and University Advanced Standing
* Corequisite(s): (DANC 327R, DANC 427R, or DANC 428R) and (DANC 321R or DANC 421R)

For dance majors desiring ballet emphasis. Investigates and explores the choreographic process with relationship to narration as well as all choreographic concepts. Includes the creation of student works that give shape and form to ideas based on a specific theme or statements. Examines plot, character, and theme as part of the creative process.

DANC 3350
Choreography
2:1:2  Spring
* Prerequisite(s): DANC 3330 and University Advanced Standing

Provides in-depth experience in the choreographic process. Focuses on development of personal voice in choreography and the ability to generate choreographic form intrinsic to thematic content. Explores the use of choreographic forms and devices as means of developing thematic content. Requires intensive exploration of the creative process through imaginative thinking, creating, and crafting in movement.

DANC 3400
Dance in the Elementary School
2:1:2  Fall, Spring
* Prerequisite(s): University Advanced Standing

Introduces the philosophy, educational benefits, and teaching methods of dance for children. Children movement as an effective and motivational medium for building self awareness, expression, and discipline. Develops skills in the psychomotor, affective, and cognitive domains. Places emphasis on learning through problem-solving and on integrative learning. Addresses the Utah State Core Curriculum in Dance for the elementary school. Completion of a second course is required to satisfy the fine arts requirements (see Graduation section of catalog).

DANC 341R
Modern/Contemporary Dance Technique and Theory Level III/ Semester I
3:1:6.5  Fall
* Prerequisite(s): DANC 341R or by audition

Builds technical, performance and theoretical understanding and skills in modern/contemporary dance. Expands on the skills and concepts introduced in DANC 341R. Emphasizes body and performance techniques, axial and locomotor skills, total body connectivity movement progressions; increased spacial, rhythmical, and qualitative acuity; risk-taking; and movement commitment. Includes aspects of composition, improvisation, and performance as they relate to technique. May be repeated for up to 5 credits total toward graduation. Course Lab fee of $216 for support applies.

DANC 3420
Dance in the Elementary Schools Practicum
3:2:3  Spring
* Prerequisite(s): DANC 3400 and University Advanced Standing

Builds on the methods, strategies, and dance pedagogy studied in the DANC 3400 Dance in the Elementary Schools course. Focuses on the practicum experience in the elementary schools using the Utah Secondary Dance Core Curriculum.

DANC 342R
Modern/Contemporary Dance Technique and Theory Level III/ Semester II
3:1:6.5  Spring
* Prerequisite(s): DANC 341R or by audition

Builds technical, performance and theoretical understanding and skills in modern/contemporary dance. Expands on the skills and concepts introduced in DANC 341R. Emphasizes body and performance techniques, axial and locomotor skills, total body connectivity movement progressions; increased spacial, rhythmical, and qualitative acuity; risk-taking; and movement commitment. Includes aspects of composition, improvisation, and performance as they relate to technique. May be repeated for up to 5 credits total toward graduation. Course Lab fee of $216 for support applies.

DANC 3450
Modern/Contemporary Dance Teaching Methods
3:3:0  Fall
* Prerequisite(s): DANC 3400 and University Advanced Standing

Introduces methodologies, strategies, ideologies, and philosophies of dance pedagogy based on current research and practices. Emphasizes lesson plan writing using the Utah State Secondary Dance Core Curriculum and the National Dance Standards. Integrates theory and practice through lecture, discussion, writing, and classroom teaching experiences in the college and public school settings.

DANC 346R
Synergy Dance Company
3:0:9  Fall, Spring
* Prerequisite(s): Audition required
* Corequisite(s): DANC 143R or DANC 144R or DANC 243R or DANC 244R or DANC 341R or DANC 342R or DANC 441R or DANC 442R

Designed for students to gain more advanced understanding of artistry through the process and performance of student, faculty, and guest choreography in a formal and informal performance settings. Combines participation in technique, performance, composition, and improvisation. Also includes lectures and demonstrations for local schools and other interested groups. May be repeated for a maximum of 9 credits toward graduation. Course Lab fee of $75 for practical experience applies.

DANC 348R
Special Topics in Dance
1 to 3:0 to 3:0 to 9
* Prerequisite(s): University Advanced Standing and Department Approval

Addresses emerging topics, issues, and developments related to dance. Includes lectures, demonstrations, and studio time for application and evaluation. May be repeated for a maximum of 9 credits toward graduation.
DANC 365G
World Dance Forms
3:2:2  Spring
* Prerequisite(s): Matriculation in any BFA or BS Dance major and University Advanced Standing
Explores the richness and beauty of various cultures from around the world through the medium of dance. Teaches students a deeper knowledge and appreciation of various world dance, or multi-cultural dance forms, through participation in movement classes, informal performances, and dance-related cultural events in class, on campus, and in the community. Serves to deepen the student's understanding of the profound relationship between dance and culture, and dance and human existence throughout time through readings, group discussions, interactive assignments, cultural research projects, concert attendance, writing, dancing, singing and playing music. Explores the evolution and dissemination of the various cultural dance forms studied in class. Course Lab fee of $40 applies.

DANC 3610
Intermediate Dance Conditioning and Injury Prevention
2:1:2  Spring
* Prerequisite(s): DANC 1610 and University Advanced Standing
An intermediate course for dance majors that covers the theory and practice of core conditioning principles with specific application to dance. Regularly scheduled conditioning work outs with accompanying lectures, where recognition and appropriate responses to common dance injuries will be discussed.

DANC 3630
Dance History WE
3:3:0  Fall, Spring
* Prerequisite(s): ENGL 2110, DANC 2110, DANC 356G, and University Advanced Standing
Introduces the art of dance in the Western tradition. Emphasizes the relationship of dance to lineage-based, ancient, medieval, Renaissance, Baroque, Classical, Romantic, and Modern cultures. Explores keystone Western dance history concepts and the work of various recognized dance scholars. Introduces students to a wide range of publications in the field. Includes lecture and movement experiences. Emphasizes skills of critical analysis, synthesis, and interpretation in writing about dance.

DANC 365R
Advanced Fundamentals of Movement
2:1:2  Fall
* Prerequisite(s): DANC 265R, DANC 2670, and University Advanced Standing
Continues and deepens the content of DANC 265R. Emphasizes application of principles of Bartenieff Fundamentals to various movement contexts. Explores the connections between Laban Movement Analysis (LMA) elements of Body, Effort, Shape, and Space and applies the connections to developing increased ease in movement function and liveliness of expression in many movement forms. Develops increased skill and awareness in movement sensation, perception, practice, observation, analysis, prescription, and interpretation. Utilizes LMA symbology. Involves lecture, participation, observation, and written and verbal analysis. May be repeated for 4 credits toward graduation.

DANC 3670
Movement Analysis
3:3:0  On Sufficient Demand
* Prerequisite(s): DANC 265R or equivalent, and University Advanced Standing
An advanced survey course in movement analysis. Focuses on application of the concepts and theories of Laban Movement Analysis in the context of observing, recording, analyzing, and making meaning from human body movement. Includes in-depth study of motif score writing and applying Body, Effort, Shape and Space Harmony paradigms. Utilizes physical performance and written and verbal observation methods. Examines application to disciplines that concern themselves with human movement behavior such as behavioral sciences, theater, communications, human performance, human development, business, and education.

DANC 3680
Dance Kinesiology
4:4:0  Spring
* Prerequisite(s): (ZOOL 1090 or ZOOL 2320) and University Advanced Standing
Studies the neuromusculoskeletal system in practical application to dance. Analyses demands placed on the dancer's body and identifies how to maximize efficiency and reduce injuries while maintaining requisite aesthetic elements. Includes lecture and lab experiences.

DANC 3690
Motif and Labanotation I
2:2:0  Not Offered
* Prerequisite(s): DANC 265R, DANC 2670, and University Advanced Standing
Teaches Motif Writing and beginning Labanotation. Expands students' understanding of the written symbol system of Laban Movement Analysis and deepens observation and analysis skills critical for understanding dance and varied manifestations of human movement expression. Relates Motif Writing and Labanotation to dance history and current dance choreography and performance. Includes application of Motif Writing to teaching dance technique, composition, and improvisation. Emphasizes the theory of human movement description and analysis formulated by Rudolph Laban and requires students to both write and read beginning to intermediate level notated scores. Includes lecture, discussion, observation, and participation including reading from score, written and embodied symbology assignments, teaching assignments, and completion of several creative projects.

DANC 370R
American Social Dance III
1:0:3  Fall, Spring
* Prerequisite(s): Instructor Approval
For students who have successfully completed Bronze and Silver American Social Dance courses and for members of the Ballroom Tour Team. Teaches the advanced (Gold) level patterns of American Style Foxtrot, Cha Cha, Waltz, Triple Swing, Viennese Waltz, and West Coast Swing. Emphasizes, on an advanced level, correct poise, style, rhythm. Also teaches correct footwork, foot position, alignments, rise and fall, partnering, correct leading and following, and etiquette. First semester successful completers will have a general knowledge of Gold level curriculum. Second semester successful completers will have an in-depth knowledge of Gold level curriculum. May be repeated for two credits toward graduation. Course fee of $30 for practical experience applies.

DANC 371R
International Ballroom Dance III
1:0:3  Fall, Spring
* Prerequisite(s): Instructor Approval
For students who have successfully completed Bronze and Silver International Ballroom Dance courses, and for members of the Ballroom Tour Team. Teaches the advanced (Gold) level patterns of International Style Waltz, Quickstep, Tango, Foxtrot, and Viennese Waltz. Emphasizes, on an advanced level, correct poise, style, rhythm. Also teaches correct footwork, foot positions, alignments, rise and fall, partnering, floor craft, and correct leading and following. First semester focuses on developing a general knowledge of Gold level curriculum. Second semester focuses on developing an in-depth knowledge of Gold level curriculum. May be repeated for a maximum of 4 credits toward graduation. Course fee of $30 for practical experience applies.

DANC 372R
Latin Ballroom Dance III
1:0:3  Fall, Spring
* Prerequisite(s): Instructor Approval
For students who have successfully completed Bronze and Silver Latin Ballroom Dance courses and for members of the Ballroom Tour Team. Teaches the advanced (Gold) level patterns of Latin Style Rumba, Samba, Cha Cha, Paso Doble, and Jive. Emphasizes, on an advanced level, correct poise, style, rhythm. Also teaches correct footwork, foot position, alignments, rise and fall, partnering, correct leading and following, amounts of turn, Cuban action, and movement principles. First semester focuses on developing a general knowledge of Gold level curriculum. Second semester focuses on developing an in-depth knowledge of Gold level curriculum. May be repeated for a maximum of 4 credits toward graduation. Course fee of $30 for practical experience applies.
**Course Descriptions**

**DANC 3730**
American Social Dance Teaching Methods 2:2:0  
* Prerequisite(s): DANC 1700 or equivalent skill level, DANC 270R or equivalent skill level, and University Advanced Standing

For dance majors and other students with an interest in teaching social dance. Focuses primarily on teaching techniques using Bronze level patterns. Emphasizes calling steps. Explores proper music selection and tempo. Includes actual teaching time of peers and a beginning class. Completers should be able to adequately teach social dance in either a formal or informal setting.

**DANC 3740**
Ballroom Dance Choreography 2:1:2  
* Prerequisite(s): (DANC 270R, DANC 271R, DANC 272R, or Instructor Approval) and University Advanced Standing

Investigates and explores the choreographic process with reference to choreographic concepts. Involves the creation of dance skills that give shape and form to ideas based on a specific theme, style, or statement. Includes Latin, International Ballroom, American Rhythm and Smooth, and Cabaret styles. Explores formation team competition, solo couples competition, formation team stage performance, and solo couple stage performance as part of the creative process.

**DANC 3750**
Studies in Ballroom Dance Styles 2:2:0  
* Prerequisite(s): (ENGL 1010 or ENGH 1005) and University Advanced Standing

Investigates and explores historical ballroom dance styles. Emphasizes the social and cultural context in which ballroom dance is created and performed. Includes career, life style, education, gender, moral and ethical concerns related to ballroom dance issues. Also covers ballroom dance history, evolution, and current trends. Identifies similarities and differences between ballroom dance and other dance forms. Involves discussion, lecture, research, student presentations and participation.

**DANC 376R**
Ballroom Dance Company Back-up Tour Team 2:0:6  
* Prerequisite(s): Audition

For students with advanced ballroom dance experience. Teaches American, International Ballroom, and Latin techniques using intermediate and advanced choreography in performance and competitive discipline. Includes choreography, stage performances, competitions, and demonstrations with increased emphasis on dance technique and proper execution of formations. Requires individual practice. Prepares dancers for audition to touring team. May be repeated for eight credits toward graduation. Course fee of $50 for specialized clothing and materials applies.

**DANC 421R**
Pointe IV 1:0:3  
* Prerequisite(s): Advanced equivalent skill level to be determined by audition  
* Corequisite(s): DANC 427R

For women dance majors and other students with an interest in the professional dance world. Emphasizes pointe. Continues to build strength and control through increased complex combinations. Explores advanced levels of styles from classical and contemporary repertoire. Develops virtuosity en pointe. Prepares students to perform at a professional technical skill level. Includes guest teachers. May be repeated for a total of six credits toward graduation. Course Lab fee of $120 for support applies.

**DANC 425R**
Repertory Ballet Ensemble 3:0:9  
* Prerequisite(s): Audition required  
* Corequisite(s): DANC 327R or DANC 427R

For serious ballet students showing a high level of talent and technical achievement. Explores the development of artistic interpretation as students learn styles of various repertoire works. Prepares students to perform as a competent corps de ballet member. May be repeated for a maximum of 9 credits toward graduation. Course fee of $50 for specialized clothing applies.

**DANC 4260**
Ballet Pedagogy 3:2:2  
* Prerequisite(s): University Advanced Standing

Emphasizes appropriate teaching methodologies for all levels of ballet technique, pointe and men’s class. Develops interpersonal skills as they relate to classroom management. Explores the styles and teaching methodologies of all ballet school/stylist to help students develop and construct effective lesson plans and curriculum. Course lab fee of $36 applies.

**DANC 427R**
Ballet Technique IV 3:1:6.5  
* Prerequisite(s): DANC 327R or advanced equivalent skill level to be determined by audition  
* Corequisite(s): DANC 421R

For ballet students at an advanced skill level who are able to handle the varying technical difficulties of classical ballet. Provides experience in barre and center floor work to increase strength and flexibility. Emphasizes the development of musicality as it relates to artistic interpretations. Successful completers will be prepared to participate on a corp de ballet professional performance level. May be repeated for a total of 18 credits toward graduation. Course Lab fee of $216 for support applies.

**DANC 428R**
Ballet Technique V 3:1:6.5  
* Prerequisite(s): DANC 427R or advanced equivalent skill level to be determined by audition  
* Corequisite(s): DANC 421R or DANC 423R

For ballet students who successfully audition for Utah Regional Ballet Company at an advanced skill level and artistic skill level who are prepared for the technical difficulties required at a professional level. Provides hands-on experience in barre and center floor work to fully develop the professional artist. Successful completers will be prepared to participate on a professional performance level. May be repeated for a total of 24 credits toward graduation. Course Lab fee of $216 for support applies.
DANC 429R
Utah Metropolitan Ballet Repertory
3:0:9 Fall, Spring
* Prerequisite(s): Advanced/Professional Skill level; determined by audition
* Corequisite(s): DANC 421R, DANC 423R or DANC 427R, DANC 428R

For serious ballet students showing a high level of talent and technical achievement. Explores the development of artistic interpretation as students learn styles of various repertoire works. Successful completers should be qualified to perform as a competent corps de ballet member. May be repeated for a maximum of 9 credits toward graduation. Course fee of $50 for specialized clothing applies.

DANC 4350
Senior Capstone I
1:1:0 Fall
* Prerequisite(s): DANC 3140, DANC 3630, DANC 3680, and (DANC 3340, or DANC 3350, or DANC 3740), and University Advanced Standing

The first of two courses designed to prepare senior dance majors with the skills, resources, and portfolio/marketing materials needed to apply for graduate work or professional opportunities in dance. Emphasizes portfolio development and biographical writing, personal web page creation, audition and interview strategies, and dance resources. Includes writing, performance, research, and multimedia work.

DANC 4360
Senior Capstone II
2:2:0 Spring
* Prerequisite(s): DANC 3680 and DANC 4350 and DANC 4880 and (DANC 3340 or DANC 3350 or DANC 3740 with a B- or higher) and University Advanced Standing

Designed for senior dance students as the second course in a capstone sequence. Emphasizes through choreography, performance, and production a synthesis of the knowledge and skills developed in the B.S. and B.F.A. degrees in Dance. Includes writing, collaborative work, discussion, lecture, and intensive studio preparation of choreography.

DANC 441R
Modern/Contemporary Dance Technique and Theory Level IV/Semester I
3:1:6:5 Fall
* Prerequisite(s): By audition

Builds technical, performance, and theoretical understanding and skills in modern dance/contemporary dance. Emphasizes body and performance techniques, axial and locomotor skills, total body connectivity, movement progressions, increased spacial, rhythmical and qualitative acuity, risk-taking, and movement commitment. Includes aspects of composition, improvisation, and performance as they relate to technique. May be repeated for up to 9 credits total toward graduation. Course Lab fee of $216 for support applies.

DANC 442R
Modern/Contemporary Dance Technique and Theory Level IV/ Semester II
3:1:6:5 Spring
* Prerequisite(s): DANC 441R or by audition

Builds rigorous technical, performance, and theoretical training. Emphasizes advanced performance sequences and progressions that utilize technical, kinesthetic, and expressive skills. Includes challenging spacial, rhythmical, and qualitative performance skills, risk-taking, and movement commitment. Includes aspects of composition, improvisation, and performance as they relate to technique. May be repeated for up to 9 credits total toward graduation. Course Lab fee of $216 for support applies.

DANC 4430
Dance Teaching Practicum
3:2:3 Spring
* Prerequisite(s): DANC 3450 and University Advanced Standing

For secondary dance licensure majors or dance majors interested in dance pedagogy. Builds on the methodologies, strategies, ideologies and philosophies of dance pedagogy studied in DANC 3430. Emphasizes lesson plan and unit development, instruction, and assessment based on the National and Utah State Dance Standards. Focuses on the integration of theory and practice during a practicum experience in the secondary public schools setting. Includes writing, reading, discussion, and participation.

DANC 446R
Contemporary Dance Ensemble
3:0:9 Fall, Spring
* Prerequisite(s): By audition
* Corequisite(s): DANC 341R or DANC 342R or DANC 441R or DANC 442R

Designed for students with advanced technical, performance, and artistic skills. Provides students interested in further developing their artistry with opportunities to perform the works of professional choreographers in formal and informal settings. Explores a variety of contemporary and historical choreographic approaches. Prepares students for work in a professional modern dance company. May be repeated for a maximum of 9 credits toward graduation. Course Lab fee of $75 for practical experience applies.

DANC 471R
International Ballroom Dance IV
2:1:2 Fall, Spring
* Prerequisite(s): Instructor Approval

For students who have successfully completed Bronze, Silver and Gold International Ballroom Dance classes and for members of the Ballroom Tour Team. Includes preparation to dance, choreograph and compete on a championship amateur level. Teaches the advanced (Gold-Bar) level patterns of Latin style Rumba, Samba, Cha Cha, Paso Doble, and Jive. Emphasizes, on a pre-professional level, correct poise, style, and rhythm. Also teaches and enhances correct footwork, foot positions, Cuban action, alignments, rise and fall, partnering, floor craft, body flight, precedes and follows, and correct leading and following. First semester focuses on developing a general knowledge of Gold-Bar level curriculum. Second semester focuses on developing an in-depth knowledge of Gold-Bar level curriculum. May be repeated for a maximum of 8 credits toward graduation. Course fee of $30 for practical experience applies.

DANC 4740
International Ballroom and Latin Teaching Methods
3:3:0 Fall
* Prerequisite(s): DANC 271R, DANC 272R, DANC 3730, and University Advanced Standing

Covers technical and theoretical aspects of basic figures in Waltz, Tango, Foxtrot, Quickstep, Cha Cha, Samba, Rumba, Paso Doble, and Jive, such as footwork, amount of turn and rhythm. Emphasizes correct teaching methods associated with each dance. Prepares students to obtain membership in the Imperial Society of Teachers of Ballroom Dance and to teach professionally.

DANC 476R
Ballroom Dance Company Tour Team
3:0:9 Fall, Spring
* Prerequisite(s): Audition

For students with advanced Ballroom Dance Team experience. Audition required. Teaches advanced technique in performance and competitive discipline. Includes choreography, performances, demonstrations, and tours, in formation team dancing, stage performance, team competition, team match, and individual competitive events. Requires individual practice. May be repeated for 9 credits toward graduation. Course fee of $100 for specialized clothing and materials applies.

DANC 481R
Internship in Dance II
1 to 3:1 to 3:0 Fall, Spring
* Prerequisite(s): Matriculation in BFA or BS in Dance and Departmental Approval, and University Advanced Standing

Provides an opportunity for upper-division students to receive college credit and work in a dance-related field. Offers students the opportunity to focus on a specific career path and prepare themselves to enter the profession. Applies academic concepts to actual work experiences. Requires approval of faculty sponsor and completion and acceptance of application. Also requires completion of an orientation, completion of Master Agreement between UVU and employer, completion of goals and tasks as required by academic department, and completion of final evaluation. May be repeated for a total of 6 credits toward graduation. May be graded credit/no credit.
DANC 4880  
Current Issues in Dance  
3:3:0  
Fall  
* Prerequisite(s): DANC 3630, and University Advanced Standing  
Introduces students to the issues and philosophical views that have influenced dance and other art forms. Examines current trends and issues in dance. Includes lecture, discussion, readings, video, guest artists, and collaborative projects.  

DANC 4920  
Dance as Cultural Practice  
3:3:0  
Not Offered  
* Prerequisite(s): DANC 2110 and (DANC 365R or DANC 3670) and University Advanced Standing  
Designed for students with an interest in dance and cultural representation. Takes a critical cultural approach to the study of dance as a means of encoding cultural values. Analyzes issues of gender, identity, religion, power, art, semiotics, and media/technology in relation to dance. Explores the effect of dance as cultural representation on society. Emphasizes critical theories of dance, representation, identity, feminism, and postmodernism. Requires student presentation of research project.  

Dental Hygiene (DENT)  

DENT 1010  
Dental Hygiene I  
3:3:0  
Fall  
* Prerequisite(s): Acceptance into Dental Hygiene program  
* Corequisite(s): DENT 1015  
For students accepted into the Dental Hygiene Program. Introduces basic principles and skills used in the practice of dental hygiene, including infection control, patient assessment and treatment. Requires practicing on dental mannequins and student patients. Teaches all skills to clinical competence. Builds on basic and dental sciences and prepares for the study of the dental sciences and clinical dental hygiene. Course Lab fee of $74 applies.  

DENT 1015  
Dental Hygiene I Preclinical lab  
2:0:6  
Fall  
* Prerequisite(s): Acceptance into Dental Hygiene program  
* Corequisite(s): DENT 1010  
For students accepted into the Dental Hygiene Program. Introduces basic principles and skills used in the clinical practice of dental hygiene, including infection control, patient assessment and treatment. Requires practicing on dental mannequins and student patients; all skills are taught to clinical competence. Builds on basic and dental sciences and prepares for clinical dental hygiene practice on community patients. Course Lab fee of $73 applies.  

DENT 1020  
Oral Anatomy and Physiology  
4:4:0  
Fall  
* Prerequisite(s): Acceptance into Dental Hygiene program  
For students in the Dental Hygiene Program. Focuses on study of the normal development, structure, and function of the orofacial region. Provides microscopic and macroscopic study of oral structures in a laboratory setting. Builds on basic sciences and prepares for the study of the dental sciences and clinical dental hygiene.  

DENT 1030  
Dental Materials  
2:1:3  
Spring  
* Prerequisite(s): Accepted into Dental Hygiene program  
Prepresents the history, composition, chemical, and physical properties and use of materials commonly utilized in the dental laboratory and dental operatory. Builds on dental sciences. Provides laboratory experience in performing common dental laboratory procedures and prepares for the clinical practice of expanded functions. Course Lab fee of $75 applies.  

DENT 1040  
Dental Hygiene II  
3:3:0  
Spring  
* Prerequisite(s): Acceptance into Dental Hygiene program  
* Corequisite(s): DENT 1015  
Provides advanced dental hygiene modalities, including oral health education, practice management, patient assessment and treatment. Emphasizes treatment planning and emergency preparedness. Builds on basic and dental sciences and prepares for clinical dental hygiene practice. Course fee of $3175 for practical experience applies.  

DENT 1045  
Dental Hygiene II Clinical  
3:0:9  
Spring  
* Prerequisite(s): Acceptance into Dental Hygiene program  
* Corequisite(s): DENT 1040  
Provides for developing clinical dental hygiene skills, practiced on patients in a clinical setting, including oral health education, practice management, patient assessment and treatment. Emphasizes treatment planning and emergency preparedness. All skills are taught to clinical competence. Builds on basic and dental sciences and prepares for clinical dental hygiene practice. Course Lab fee of $85 applies.  

DENT 1050  
Clinical Dental Radiography  
1:1:0  
Fall  
* Prerequisite(s): Acceptance into Dental Hygiene program  
* Corequisite(s): DENT 1055  

DENT 1055  
Clinical Dental Radiography Lab  
1:0:3  
Fall  
* Prerequisite(s): Acceptance into Dental Hygiene program  
* Corequisite(s): DENT 1050  

DENT 1060  
General and Oral Pathology  
2:2:0  
Spring  
* Prerequisite(s): Acceptance into Dental Hygiene program  
Focuses on the study of commonly encountered systemic and oral diseases; etiology, presentation, treatment and effect on dental treatment, including associated emergency procedures. Emphasizes the principles of inflammation, immunology, healing, and repair. Builds on basic and dental sciences and prepares for clinical dental hygiene practice.  

DENT 1070  
Medical Emergencies in the Dental Office  
2:2:0  
Fall  
* Prerequisite(s): Acceptance into Dental Hygiene program  
Introduces the basic principles and management of medical emergencies that could occur in a dental office, including the care and clinical management of medically compromised patients.  

DENT 2020  
Dental Pharmacology  
3:3:0  
Spring  
* Prerequisite(s): Accepted into Dental Hygiene program  
Focuses on pharmacology as it affects the clinical practice of dentistry. Emphasizes drugs commonly used in dentistry, for treatment of common systemic and oral diseases, and for emergency treatment: effects, administration, and toxicology. Builds on basic and dental sciences and prepares for clinical dental hygiene practice.  

DENT 206G  
Oral Public Health  
3:2:3  
Fall, Spring  
* Prerequisite(s): Acceptance into the Dental Hygiene Program  
Examines the principles of community health, including assessment, planning, implementation, and evaluation of health care, with an emphasis on oral health. Builds on knowledge of ethics, basic and dental sciences, and clinical dental hygiene practice. Provides the knowledge and skills necessary to function in a community health setting and includes learning experiences in community health agencies. Analyzes and evaluates global or intercultural issues. Evaluates cultural rules and biases. Explores stereotypical cultural conceptions.
DENT 3010
Dental Anesthesiology
3:3:0 Fall
* Acceptance into Dental Hygiene program and University Advanced Standing
* Corequisite(s): DENT 3015
Focuses on pain control to include local and topical oral anesthetics, nitrous oxide conscious sedation and other means of pain control that will be taught to the accepted standard of care. Requires application of knowledge gained from this course to directly clinical application on their patients in the clinical setting. Builds on basic and dental sciences and prepares the student for clinical dental hygiene practice and will also prepare the student for their local anesthesia boards exams. Course fee of $3175 for practical experience applies.

DENT 3015
Dental Hygiene III Clinical
4:0:12 Fall
* Prerequisite(s): Acceptance into Dental Hygiene Program and University Advanced Standing
* Corequisite(s): DENT 3010
Introduces skills involving oral anesthetics (pain control) and supportive periodontal treatment. Utilizes advanced skills of dental hygiene practice, including assessment and treatment on patients of all ages in a clinical setting, with emphasis on planning and comprehensive treatment. Requires demonstration of clinical competence unless otherwise noted in the course outline. Includes more rigorous skill and patient difficulty levels than the first year clinical experiences. Builds on basic and dental sciences and foundational skills to include DENT3010, and prepares the student for clinical dental hygiene practice. Course Lab fee of $63 applies.

DENT 3030
Periodontology
3:3:0 Fall
* Prerequisite(s): Acceptance into the Dental Hygiene Program and University Advanced Standing
Focuses on the study of the healthy periodontal tissues, and the factors, recognition, and classes of periodontal disease. Provides background knowledge of nonsurgical and surgical treatment of periodontal disease. Builds on basic and dental sciences and prepares for clinical dental hygiene practice.

DENT 3040
Dental Hygiene IV
2:2:0 Spring
* Prerequisite(s): Acceptance into Dental Hygiene program and University Advanced Standing
* Corequisite(s): DENT 3045
Provides comprehensive didactic experience in all phases of dental hygiene practice for patients, regardless of special needs. Introduces nutritional and tobacco cessation counseling. Builds on basic and dental sciences and prepares for various practice settings in clinical dental hygiene. Course fee of $3175 for practical experience applies.

DENT 3045
Dental Hygiene IV Clinical
4:0:12 Spring
* Prerequisite(s): Acceptance into Dental Hygiene program and University Advanced Standing
* Corequisite(s): DENT 3040
Provides comprehensive clinical experience in all phases of dental hygiene practice for patients, to include special needs. Course teaches to clinical competence. Introduces nutritional and tobacco cessation counseling. Builds on basic and dental sciences and prepares for various practice settings in clinical dental hygiene. Course Lab fee of $63 applies.

DENT 3050
Dental Hygiene Seminar
1:1:0 Spring
* Prerequisite(s): Acceptance into the Dental Hygiene Program
Explores topics relevant to contemporary practice of dental hygiene, including their professional roles, career and stress management, ethical and legal aspects, and the role of the dental hygienist in the dental specialty practices. Builds on clinical practice and prepares for entry into the many aspects of the profession of dental hygiene. Includes observation of various dental specialty practices.

DENT 3060
Advanced Dental Hygiene Public Health
3:3:0 Spring
* Prerequisite(s): DENT 206G and University Advanced Standing

DENT 3000
Office and Private Practice for the Dental Hygienist
3:3:0 Fall
* Prerequisite(s): 2 year hygiene degree, departmental approval, and University Advanced Standing
Expands beyond the dental hygiene basics taught in hygiene school. Addresses topics in dental hygiene practice that will help the clinical dental hygienist become more proficient in their field and a leader in dental hygiene. Studies practice management issues, productivity, salary enhancement, cutting edge technology, dental insurance, salaries and benefits, team work, patients and money considerations, and other challenges faced in the dental hygiene profession.

DENT 3200
Teaching the Dental Hygiene Patient
3:3:0 Summer
* Prerequisite(s): Admission to the BS Dental Hygiene and University Advanced Standing
Addresses areas such as learning theories, teaching strategies, societal-cultural considerations, and evaluation and applies them specifically to the needs of the dental hygienist when teaching his/her patients and the community at large.

DENT 406G
Global Community Health Project
3:3:0 Summer
* Prerequisite(s): Admissions to the Dental Hygiene Program or upon approval by program director, and University Advanced Standing
Addresses the complexities inherent in global and/or intercultural oral health and the community health theories and strategies used to address these concerns. Includes the planning and execution of a 10 day oral health education or service project in either another culture or another country (e.g., Native American reservation in Utah or Guatemala). Students from all disciplines may participate.

DENT 4200
Teaching the Dental Hygiene Student
3:3:0 Summer
* Prerequisite(s): DENT 3200, DENT 3060, and University Advanced Standing
Prepares the dental hygienist to become a successful educator in a dental hygiene program by addressing areas such as: learning theories, teaching strategies, learning objectives, lesson plans, syllabi, curriculum design evaluation tools, and roles of an educator. May be delivered online.

DENT 4300
Dental Hygiene Capstone
1:1:0 Spring
* Prerequisite(s): Admission to the BS Dental Hygiene and University Advanced Standing
Requires the student to integrate several main areas of study in the BS program and create a paper or project that reflects comprehensive knowledge and ability to reflect, connect and then produce a work based on their learning experiences throughout the BS program.

DENT 481R
Internship in Dental Hygiene
1 to 4:1 to 4:0 Spring
* Prerequisite(s): University Advanced Standing and Dental Hygiene Department approval
Utilizes the student’s current practice as a dental hygienist to further apply and develop their skills and knowledge. May be repeated for up to 8 credits toward the BS Dental Hygiene.

DENT 489R
Undergraduate Research in Dental Hygiene
3:3:0 Summer
* Prerequisite(s): Departmental Approval and University Advanced Standing
Explores research proposal process and design. Provides opportunity to develop basic research skills in searching and critically appraising evidence-based literature. Engages in evidence-based decision making, developing clinical questions and translating research into practice. Creates a significant intellectual and creative research proposal in the dental discipline. May be repeated for a maximum of 6 credits toward graduation.
Digital Media (DGM)

DGM 1061 Digital Cinema Editing I 3:3:1 Fall, Spring, Summer
Introduces the interface, tools, techniques, and operations of a variety of Non-Linear Editing (NLE) software programs. Introduces standard editing concepts and practices necessary for the creation and completion of Digital Cinema projects made for various distribution channels. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 1062 Animation for the Internet 2:1:3 On Sufficient Demand
Introduces the interface, tools, tweening techniques, and operations of an animation software package for online use. Requires creation of an interactive project with sound, video, and motion. Introduces basic scripting. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 1063 Image Editing 2:1:3 Fall, Spring
Introduces students to the interface, fundamental set of tools, techniques and operations of Photoshop. Requires creation and modification of digital images. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 1110 Digital Media Essentials I 4:4:0 Fall, Spring, Summer
Beginning course designed to give students an in-depth introduction and well-grounded understanding of the digital media way of thinking, opportunities in the field, various tools, and Introduction to development techniques. Topics include: audience assessment, digital imaging, compression algorithms, ethical dilemmas, message design through text, audio, images, animation, and digital video. May be delivered online. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 1220 Digital Design Essentials 3:3:0 Fall, Spring
Teaches fundamentals of digital layout for web development and how to properly create engaging interfaces for digital media. Addresses technical challenges for digital mediums to deliver effective digital experiences. Introduces basic content creation and sprint thinking independent of software platforms. Lab access fee of $45 for computers applies.

DGM 1230 Interaction Design Essentials 3:3:0 Fall, Spring
* Prerequisite(s): DGM 1220
Implements creative development layouts into interactive designs. Focuses on integration with industry development tools. Introduces basic overview of product development, pattern libraries, layout and development standards using interaction and industry practices for digital experiences. Lab access fee of $45 for computers applies.

DGM 1240 Communicating Digital Design 3:3:0 Fall, Spring
* Prerequisite(s): DGM 1230
Focuses on the development of highly creative and visual design documentation; how to communicate both written and visual information in meaningful ways in a highly technical field. Teaches why communicating a particular design challenge is just as important as the design itself, and why writing, layout, and visual clarity is critical to mastering UX and Digital Product Design. Sets the foundation for all documentation assignments in the Web Design and Development degree. Lab access fee of $45 for computers applies.

DGM 1500 Intro to Digital Cinema 1:1:0 Fall
Offers an overview of the Digital Cinema major and industry. Teaches students the expectations and timetables required of them as they progress through the major. Develops a broad understanding of the various aspects of the filmmaking process and how training for these various aspects is conducted at UVU. Emphasizes industry standards of safety and professionalism. Should be taken in the first semester of classes in the program. Lab access fee of $45 for computers applies.

DGM 1510 Film Production Analysis 3:1:6 Fall, Spring
Film Production Analysis is a foundation class for those interested in the digital media and motion picture business. Analyzes the various technologies and production techniques that make up motion picture communication. Involves viewing a motion picture each week of class and analyzing how the producer and director incorporated production and structural techniques to produce a compelling story. Covers the eight sequence structural elements of motion picture storytelling, how each crew member of the production team contributes to the overall impact, how scripting is used to direct the team to create a strong cinematic effect, and how the three act eight sequence structure guides the entire team through the pre-production, production and post-production process. Software fee of $15 applies. Course fee of $18 for software and plug-ins applies. Lab access fee of $45 for computers applies.

DGM 1520 Digital Cinema Production I 3:2:2 Fall, Spring, Summer
Introduces professional video production techniques used for non-narrative digital cinema projects. Covers production processes such as working with clients, storytelling, camera techniques, basic lighting techniques, production management and basic non-linear editing techniques. Requires participation in a high-quality semester project that will take a non-narrative project through the entire pre-production, production and post-production process. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 1600 Scripting for Internet Technologies 3:3:0 Fall, Spring
Introduces the fundamentals of computer programming and problem solving using the current industry standard scripting languages. Emphasizes the fundamentals of structured and object-oriented programming, syntax, semantics, control structures, arrays, file I/O, testing/ debugging, implementation, and the construction of graphical user interfaces. Applies these concepts to manipulate digital images, sound, movies, text, and web pages that are heavily used as digital media. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 1610 Scripting for Animation and Games I 3:3:0 Fall, Spring
Introduces the fundamentals of computer programming and problem solving using the current industry standard scripting languages. Emphasizes the fundamentals of structured and object-oriented programming, syntax, semantics, control structures, arrays, file I/O, testing/ debugging, implementation, and the construction of graphical user interfaces. Applies these concepts to manipulate digital images, sound, movies, text, and web pages that are heavily used as digital media. Lab access fee of $45 for computers applies.

DGM 1620 Survey of Animation 3:2:3 Fall, Spring, Summer
Introduces animation principles and studio processes used in the contemporary animation industry. Emphasizes the synthesis of technology and aesthetics in the production of an animated title. Includes an introduction to animation milestones and personalities. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 1660 Introduction to 3D Modeling and Surfacing 3:3:0
Covers the 3D pipeline which includes pre-production (rough placeholder art), production (finished art), and post production (composite and effects). Instructs students to develop 3D models, UV maps, and 2D textures. Teaches how to integrate models into a realtime rendering engine. Lab access fee of $45 for computers applies.
DGM 210R
Special Topics in Digital Media
1 to 4:0 to 4:0 to 12 On Sufficient Demand
Designed for students interested in specific digital media tools and concepts. Includes relevant and changing topics and tools used in production. Emphasizes hands-on experience along with lectures and demonstrations. This class may be taken for a total of nine credit hours, but curriculum may vary from one semester to another. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 2110
Digital Cinema Production II
3:2:2 Fall, Spring, Summer
* Prerequisite(s): DGM 1520
Presents professional digital cinema production techniques used in narrative filmmaking. Addresses problem-solving issues related to pre-production, production and post-production. Serves as a Production Assistant Certification course recognized by the Utah Film Commission. Course fee of $10 for equipment applies. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 2120
Web Essentials
3:3:0 Fall, Spring, Summer
Provides the fundamentals necessary to plan, design, develop, deploy, and critique a web site which includes images, sound, video, forms, and separates content from presentation. Focuses on the fundamentals of web programming languages. Examines various ways to build an accessible web page. May be delivered hybrid and/or online. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 2130
Digital Audio Essentials
3:2:3 Fall, Spring, Summer
* Prerequisite(s): MAT 1010
Reviews basic sound principles, cable types, microphone types, and basic techniques of use. Teaches recording of basic sounds and musical instruments into a Digital Audio Workstation. Introduces multi-track audio, editing, EQing, mixing, and mastering a 3-minute piece with voice and music. Includes a final project consisting of a multi-track music project designed for use in film, commercial radio, or other multimedia applications. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 2140
Electronics for Media
3:2:3 Fall
Covers connectors and cable wiring standards and soldering techniques used in this field. Emphasizes electronic equipment and circuits used with electrical safety in media. Includes basic DC/AC theory such as voltage, current, resistance, power dissipation, batteries, and magnetism. Introduces the basic construction and theory of operation of circuits used in media containing electronic components, resistors, capacitors, inductors, transformers, diodes, transistors, electron tubes, operational amplifiers, and linear ICs. Designed for Digital Media students. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 220R
Special Topics in Digital Design
1 to 4:0 to 4:0 to 12 On Sufficient Demand
Designed for students interested in specific authoring tools and concepts used in digital media processes. Includes relevant and changing topics and tools used in digital authoring. Emphasizes hands-on experience along with lectures and demonstrations. Curriculum may vary from one semester to another. May be repeated for a maximum of nine credits toward graduation. Course fee of $10 for materials applies. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 2210
3D Modeling and Animation Essentials
4:3:3 Fall, Spring, Summer
* Prerequisite(s): Portfolio Acceptance
Addresses the basics of 3D modeling, rigging, texturing, animation, and rendering. Demonstrates how to utilize these techniques in a production pipeline for games and animation. Includes basic techniques and theories used in a 3D animation pipeline. Software fee of $15 applies. Course fee of $19 for equipment applies. Lab access fee of $45 for computers applies.

DGM 2211
Rigging and Animation Essentials
3:2:3 Spring
* Prerequisite(s): Portfolio Acceptance
Introduces fundamental rigging for a typical 3D character and simple 3D performance motion for animated films and games. Software fee of $15 applies. Lab access fee of $45 applies.

DGM 221R
Interaction Design Practicum
1:0:3 Spring
* Prerequisite(s): DGM 2250
Instructs in the design and production of a fully-featured digital media project, including concept, design, content creation and acquisition, testing, revision, mastering, and publication with hands-on guidance. May be repeated for a maximum of 3 credits toward graduation. Lab access fee of $45 for computers applies.

DGM 2221
Game Essentials
3:2:3 Fall
* Prerequisite(s): Portfolio Review Acceptance
Provides a foundation for basic game development pipeline. Covers low poly count modeling in a variety of software packages and use of 3D models in an industry-standard game development engine. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 2240
Interaction Design
3:3:0 Fall, Spring
* Prerequisite(s): DGM 1230
Focuses on strategies and principles used in digital media development to enhance the user experience. Teaches how to understand stakeholder goals, identify and specify user needs and requirements through user research and design documentation, engage in interactions with target audiences through interviews, observation, and discussion, as well as create and test prototypes. Deals with solving real-world problems faced by consumers using products in the market. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 2250
Principles of Digital Design
3:3:0 Fall, Spring
* Prerequisite(s): DGM 1220
Teaches principles of visual design, how to properly create engaging interfaces for digital media, and practice good integration with industry development tools. Addresses the complexity of designing rich media experiences around digital devices ranging from computer screens to personal information devices. May be delivered online. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 2260
Immersive Authoring I
3:3:0 Fall
* Prerequisite(s): DGM 1230
Focuses on the application of media technologies that possess the ability to create rich immersive experiences for distribution on optical media such as CD, DVD-ROM, and over the Internet. Introduces participants to a variety of authoring systems and development techniques when creating Digital Media experiences. *Laptop Required. May be delivered online. Software fee of $15 applies. Course fee of $18 applies. Lab access fee of $45 for computers applies.

DGM 2270
Digital Publishing I
3:3:0 Fall
* Prerequisite(s): DGM 1230
Focuses on the development of engaging mobile apps for distribution on a myriad of devices. Teaches the fundamental building blocks of publishing digital media experiences of all types and may include interactive guide, catalogs, brochures, training manuals, kiosks, and exhibits. Covers the development of apps for touchscreen ‘native’ content and feature real-time updates. *Laptop & Device Required May be delivered online. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 2271
Digital Media Design I
3:3:0 Fall, Spring
* Prerequisite(s): DGM 2120
Introduces students to the underlying design and development principles that create favorable circumstances for user-centered digital media experiences. Establish the development techniques and processes required for Web and mobile apps, which may include native OS and Web Apps as well as interactive digital publication Apps. Further introduces topics such as responsive design, use of grids and layout patterns according to platform, as well as underlying development considerations such as content inventory and Information Design. Offers students a greater appreciation for good design and the basic skills necessary to produce world-class media experiences. May be delivered online. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 2280
Interaction Design II
3:3:0 Fall, Spring
* Prerequisite(s): DGM 2250
Focuses on the development of engaging mobile apps and game design愤怒的用户。设计开发一套互动反馈系统，以便于开发过程中实时收集用户反馈。软件费为$15，实验室费为$45，适用于计算机应用。
Course Descriptions

DGM 2280
Digital Effects I
3:3:0
Fall, Spring
* Prerequisite(s): DGM 1230

Focuses on the use of digital visual effects in mobile publishing environments. Includes multi-layer effects in known mobile layouts, creation of digital matts and parallax for unique user engagement, as well as integration techniques according to development platforms. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 230R
Special Topics in Digital Graphics
1 to 4:0 to 4:0 to 12
On Sufficient Demand

Designed for students interested in specific graphic tools and concepts currently used in digital media production. Includes relevant and changing topics and tools. Emphasizes hands-on experience along with lectures and demonstrations. This class may be taken for a total of nine credits, but curriculum may vary from one semester to another. Course fee of $10 for materials applies. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 2320
Digital Photography and Compositing I
3:3:0
Fall, Spring

Introduces digital image acquisition and manipulation. Teaches the mechanics of the digital camera, and introduces lighting, white balance, color temperature, digital ISO and electronic image stabilization. Discusses image compositing, EXIF data analysis and archiving. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 2340
Output and Color for Digital Cinema I
3:2:2
Fall, Spring
* Prerequisite(s): DGM 1061

Introduces digital workflow management of digital still and cinema camera assets. Addresses codecs, asset backup, management, transcoding, preparation of assets for the NLE workflow and final asset output for various digital distribution channels. Introduces color correction and color grading techniques, principles and concepts in a variety of professional software platforms. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 2341
Digital Output for Interactive Media
3:3:0
Fall, Spring
* Prerequisite(s): DGM 1220 or instructor approval

Focuses on the digital workflow and management of still images, video, audio and digital effects media assets. Addresses use of codecs and format types for use in mobile media use scenarios. Introduces the proper handling of assets in various development platforms and user experience design best practices when using assets on touch-based devices. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 240R
Special Topics in Digital Audio
1 to 4:0 to 4:0 to 12
* Prerequisite(s): DGM 1110

Designed for students interested in specific audio tools and concepts currently used in digital audio production. Includes relevant and changing topics and tools. Emphasizes hands-on experience along with lectures and demonstrations. Curriculum may vary from one semester to another. May be repeated for a maximum of nine credits toward graduation. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 2410
Core Recording Principles
3:3:0
* Prerequisite(s): DGM 2130

Teaches mic choice and placement, acoustic positioning, in-line signal processing, level matching, impedance matching, phase error elimination, pre-mixing and recorded stems, DAWs, Pro-Tools intermediate skills, project budgeting, and artist and client relations. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 2430
Core Mixing Principles
3:3:0
* Prerequisite(s): DGM 2410

Teaches the science and art of audio mixing, centering on a broad range of musical and media post-production material. Covers initial mix plan, signal flow, and fix, fit and feature skills for all signal processors, including equalization, compression, limiting, delay, reverb, distortion, doubling, phase, flange, chorus, other modulation effects, characteristics of algorithms (digital, solid state, transformers, rectifiers, tube, electro-optical, convolution). Also, teaches mix room acoustics, treatments and workarounds. Lab access fee of $45 for computers applies.

DGM 2440
Sound for Film and Television
3:3:0
Spring
* Prerequisite(s): DGM 2130

Teaches the basics of gathering sound for use in film and video productions. Covers proper boom miking and wireless mic techniques, and acoustics preparation to record dialogue and sound effects on location and on sound stages. Examines the processes utilized in editing audio of multimedia productions, including the balancing of artistic relationships, mixing and mastering of music, sound effects tracks and Foley. Offers practical experience in audio-only productions as well as audio-video relationships. Culminates in a digital cinema mixing session. Primarily a lab class, may couple with another video class to gather the sound for a cohesive project. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 2460 (Cross-listed with: COMM 2560)
Digital Audio Restoration
3:3:0
Fall

Teaches the value and use of various tools to restore, preserve, and archive audio from a variety of sources, including vinyl records, tapes, film soundtracks, etc. Additional topics include removal of ambient noise (fans, AC, etc) from class film projects, impulsive noise (clicks and pops), periodic noise (hum and buzz), and random noise (spectral subtraction of ambient noise). In addition, some attention will be given to the subject of audio forensics, or restoring audio for intelligence or law enforcement applications. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 2490
Digital Audio Workstation Training I
3:2:3
* Prerequisite(s): DGM 2130

Teaches proficiency in the use of a Digital Audio Workstation at the beginning level. Implements the first half of AVID Corporation's "ProTools User Level" certification, and successful completion of this course, together with its preceding course, DGM 2490, will earn students their AVID ProTools certification at the "User" level. Lab access fee of $45 for computers applies.

DGM 2491
Digital Audio Workstation Training II
3:2:3
* Prerequisite(s): DGM 2130, DGM 2490

Teaches proficiency in the use of a Digital Audio Workstation at the intermediate level. Implements the second half of AVID Corporation's "ProTools User Level" certification, and successful completion of this course, together with its preceding course, DGM 2490, will earn students their AVID ProTools certification at the "User" level. Lab access fee of $45 for computers applies.

DGM 250R
Special Topics in Digital Cinema
1 to 4:0 to 4:0 to 12
On Sufficient Demand
* Prerequisite(s): DGM 2110

Designed for students interested in specific video tools and concepts currently used in digital media processes. Includes relevant and changing topics and tools used in industry. Emphasizes hands-on experience along with lectures and demonstrations. Curriculum may vary from one semester to another. May be repeated for a maximum of nine credits toward graduation. Lab access fee of $45 for computers applies. Software fee of $15 applies. Course fee of $10 for equipment applies.
DGM 2510
Visual Effects for Digital Cinema I
3:2:3  Fall
* Prerequisite(s): DGM 1061
Introduces a variety of professional Visual Effects software used in conjunction with NLE (Non-Linear Editing) software in current industry use. Establishes a foundation of understanding of cinematic post-production workflows utilized by professional visual effects houses. Lab access fee of $45 for computers applies.

DGM 2540
Cinematography I
3:2:3  Fall, Spring
* Prerequisite(s) or Corequisite(s): DGM 1520
Introduces the basic concepts of lighting, grip/electric work, and beginning cinematography. Teaches a full understanding of lighting instruments, power distribution, lighting support, rigging, dollies, and production equipment. Teaches how to work as a member of a team/department applying on-set protocols to meet the needs of production objectives. Software fee of $15 applies. Lab access fee of $45 for computers applies. Course fee of $46 for equipment applies.

DGM 2545
Virtual Reality for Digital Cinema Storytelling
3:2:2  Fall, Spring
* Prerequisite(s): DGM 1061, DGM 1510, DGM 1520
Introduces the technical foundations of virtual reality for cinema production including capture, image stitching, editing, and output. Discusses potential narrative and documentary applications for the use of virtual reality as a storytelling vehicle. Allows students hands-on practice as they create various VR projects. Discusses current and evolving distribution and delivery channels for VR filmed content. Lab access fee of $45 for computers applies.

DGM 2570
Storytelling for Digital Media I
3:2:2  Fall, Spring
* Prerequisite(s): DGM 1510
Focuses on traditional three-act structure and character-driven storytelling. Introduces dramatic and persuasive writing for filmed media content including short narrative films and documentaries. Applies cinematic storytelling approaches to emerging technologies such as interactive media, gaming, and virtual reality. Lab access fee of $45 for computers applies.

DGM 2600
The Animated Image
3:3:0  Fall
* Prerequisite(s): ENGL 1010 or ENGH 1005
Chronicles the development of Animation as a medium dependent on both aesthetics and technology from its inception in the late 19th century through contemporary scientific and entertainment venues. Introduces key international personalities and industry benchmarks. Discusses animation both as a means of self-expression and as a commercial enterprise. Includes film screenings and research assignments. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 260R
Special Topics in Animation and Game Development
1 to 4:0 to 4:0 to 12
Designed for students interested in specific animation tools and concepts currently used in digital animation production. Includes relevant and changing topics and tools. Emphasizes hands-on experience along with lectures and demonstrations. Curriculum may vary from one semester to another. May be repeated for a maximum of nine credits toward graduation. Lab access fee of $45 for computers applies. Software fee of $15 applies. Course fee of $12 for equipment applies.

DGM 2610
Game Design I
3:2:3  Spring
* Prerequisite(s): DGM 2221 and Portfolio Acceptance
Explores video and computer gaming from historic, economic, and production perspectives. Introduces game theory, analysis, design documentation, and development. Lab access fee of $45 for computers applies.

DGM 2620
Principles of Animation I
3:2:3  Fall
* Prerequisite(s): Portfolio Review Acceptance
Explores and applies animation pipeline practices. Emphasizes the study of objects in motion and the communication of key ideas in the development of a second-year animation project. Lab access fee of $45 for computers applies. Software fee of $15 applies. Course fee of $18 for software and plug-ins applies.

DGM 2640
Character Development
3:2:2  Spring
* Prerequisite(s): DGM 2210 and DGM 2620 and Portfolio Review Acceptance
In-depth study and application of 3D character development for animation and games. Requires a firm understanding of 3D modeling, basic rigging, basic texturing, and principles of animation. Students will design, model, rig, and animate 3D characters following industry processes. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 2660
Digital Storyboarding for Animation
3:3:0  Fall, Spring
* Prerequisite(s): Portfolio Review Acceptance
Introduces contemporary storyboarding practices, both linear and non-linear, key to communicating information clearly, and consistently in a cost effective manner. *Laptop Required. Lab access fee of $45 for computers applies. Software fee of $15 applies. Course fee of $12 for software and plug-ins applies.

DGM 2661
Visualization for Digital Cinema-Pre-Directing
3:3:0  Fall, Spring
* Prerequisite(s): DGM 1510
Introduces concepts of visualizing filmed media content during the pre-production process from storyboarding and shot design to production design. Focuses on the role of the director to communicate lighting, character movement, camera movement, camera angles and framing to key motion picture production departments to enhance and support cinematic story. Lab access fee of $45 for computers applies.

DGM 2670
Scripting for Animation and Games II
3:3:0  Spring
* Prerequisite(s): Portfolio Review Acceptance
Focuses on the basic elements of scripting languages in modern 3D applications. Develops a firm understanding of basic scripting concepts in a 3D environment, including: libraries, expressions, arrays, conditionals, loops, and functions. Discusses simplification of complex user interfaces and the development of basic user interfaces. Utilizes industry standard applications such as Maya, Houdini, and Unity3D. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 2670R
Special Topics in Web Design and Development
1 to 4:0 to 4:0 to 12
Designed for students interested in specific web design tools and concepts currently used in multimedia creation. Includes relevant and changing topics and tools used in multimedia. Emphasizes hands-on experience along with lectures and demonstrations. Completers should be able to use the web design tools to create a typical multimedia project. Curriculum may vary from one semester to another. May be repeated for a maximum of nine credits toward graduation. Course fee of $10 for equipment applies. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 2740
Principles of Web Languages
3:3:0  Fall
* Prerequisite(s): DGM 2120, DGM 2250
Focuses on solving various Web design and coding problems using current Internet technologies. Emphasizes solving unique coding problems using HTML, CSS, and jQuery that arise when implementing a Web design. May be delivered online. Software fee of $15 applies. Course fee of $18 for software and plug-ins applies. Lab access fee of $45 for computers applies.
Course Descriptions

DGM 2760
Web Languages I
3:3:0  Fall, Spring
* Prerequisite(s): DGM 1600
Examines client-side languages that allow viewers to interact with the content of Web pages. Extensively uses methods for creating highly interactive web sites without the use of authoring tools. Teaches how to make the static content within a typical webpage more dynamic, interesting, and most importantly, useful. Culminates with a final project to design and create materials for use in a well-designed interactive web site. May be delivered online. Software fee of $15 applies. Course fee of $18 for software and plug-ins applies. Lab access fee of $45 for computers applies.

DGM 2780
Web Tools and Frameworks I
3:3:0  Fall, Spring
* Prerequisite(s): DGM 2740
Introduces the necessary frameworks and tools needed to build structured, maintainable, and scalable web pages common in the industry. Incorporates project-based learning to help students gain solid web development experience through hands-on programming and problem solving a real world project. Software fee of $15 applies. Course fee of $18 for software and plug-ins applies. Lab access fee of $45 for computers applies.

DGM 281R
Internship
1 to 8:1 to 8:0  Fall, Spring, Summer
* Prerequisite(s): Departmental Approval
For Digital Media majors only. Provides a transition from school-to-work where learned theory is applied to actual practice through a meaningful on-the-job experience. Includes student, employer and coordinator evaluations, on-site work visits, and written assignments. Completers should obtain experience in establishing and accomplishing individualized work objectives that improve work performance. Internship is intended for entry level DGM students who are working at that level. Credit is determined by the number of hours a student works during the semester and completion of individually set goals. May be repeated for a maximum of 16 credits towards graduation. May be graded credit/no credit.

DGM 296R
Seminar
1 to 3:1 to 3:0 to 9  On Sufficient Demand
Provides short courses, workshops, and special programs in information management or current administrative topics. Curriculum may vary from one semester to another. May be repeated for a maximum of nine credits.

DGM 301R
Digital Lecture Series
1:1:0  Fall, Spring
* Prerequisite(s): University Advanced Standing
Uses guest speakers who lecture on current topics in digital media. May be repeated for a maximum of 3 credits toward graduation.

DGM 302R
Digital Cinema Production Lecture Series-CineSkype
1:1:0  Fall, Spring
* Prerequisite(s): DGM 1520 or CINE 2150 or THEA 1023 and University Advanced Standing
Presents a series of feature-length films and the opportunity to discuss the challenges that went into their creation with the individual filmmaker(s). Introduces participants to directors, screenwriters, producers, and editors currently working in the industry. May be repeated for a maximum of three credits toward graduation. (Note: Some films screened may be considered controversial and carry an "R" rating.)

DGM 3061
Professional NLE Certification
3:1:0  Fall, Spring
* Prerequisite(s): DGM 1061 and University Advanced Standing
Provides guidance and materials allowing participants to certify in Non-Linear Editing software on various platforms. Focuses on certification on the User-level and Pre-level of Avid Media Composer. Extensively covers technical editing consideration including workflows, media management, color, sound, output, and scripting. Lab access fee of $45 for computers applies.

DGM 3110
Corporate Issues in Digital Media
3:3:0  Fall, Spring, Summer
* Prerequisite(s): Portfolio Review Acceptance and University Advanced Standing
Covers business and legal issues in multimedia. Reviews good business practices for the multimedia industry. Studies universal marketing and sales principles and mastery, as well as e-commerce fundamentals. Teaches copyright laws and procedures, obtaining permissions, creating and using contracts, protecting corporate assets, standards, security and privacy issues, and other legal issues regarding multimedia communication. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 3120
Digital Media Project Management
3:3:0  Fall, Spring, Summer
* Prerequisite(s): Portfolio Review Acceptance and University Advanced Standing
Teaches the foundational management principles that contribute to both the quality and profitability of digital media products. Introduces technical project management skills to help with budgeting and scheduling as well as critical soft skills, such as how to manage product design, make good decisions, communicate effectively, and build productive work relationships. Also, teaches about different types of project documents that enable and support effective, successful projects. May be delivered online. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 3240
Interaction Design Coloquium
3:3:0  Spring
* Prerequisite(s): Portfolio Review Acceptance and University Advanced Standing
Provides advanced students with unique and current industry perspectives on interaction design through seminar discussions, workshops, and industry on-site experiences. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 3260
Immersive Authoring II
3:3:0  Spring
* Prerequisite(s): Portfolio Review Acceptance and University Advanced Standing
Focuses on advanced application of media technologies and design paradigms when creating rich immersive experiences for distribution as a net-based desktop or mobile application. This course is designed to be highly adaptable to enable infusion of unique and emerging technologies that are critical for digital media majors to understand. Laptop required. Lab access fee of $45 for computers applies. Software fee of $15 applies. Course fee of $19 for software and plug-ins applies.
DGM 3261  
Authoring Virtual Reality Experiences  
3:3:0  
Fall  
* Prerequisite(s): Portfolio Review Acceptance and University Advanced Standing  
Explores the use of technology for photographing locations for Virtual Reality experiences. Covers how to develop Virtual Reality content for digital screens. Addresses the use of Virtual Reality environments in real world applications to remotely tour college campuses, museums, shops, sports venues, plan events at locations; show real estate, influence travel to vacation getaways; and create historical documentation. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 3270  
Digital Publishing II  
3:3:0  
Spring  
* Prerequisite(s): DGM 2270 and University Advanced Standing, and University Advanced Standing  
Focuses on the development of engaging mobile apps for distribution on a myriad of devices. Teaches advanced development of publishing digital media experiences of all types and includes techniques for coding immersive experiences beyond standard practices. Such apps will be developed for touchscreen native content and feature real-time updates. *Laptop & Device Required. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 3271  
Digital Product Design  
3:3:0  
Spring  
* Prerequisite(s): Portfolio Review Acceptance and University Advanced Standing  
Teaches advanced development techniques of Product Design fused with User Experience Design / User Interface Design, which can create more robust experiences, through problem solving and effective communication. Focuses heavily on how digital designers can influence the user experience, and participatory outcomes of such experiences, through well-planned interactions, digital layout, and adaptation to the physical hardware. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 3280  
Authoring Adaptive Experiences I  
3:3:0  
Spring  
* Prerequisite(s): Portfolio Review Acceptance and University Advanced Standing  
Focuses primarily on the ability to curate and realign rich content assets through internet-based Apps. Focuses on the application of media technologies that possess the ability to create adaptable content media experiences. Focuses primarily on the ability to use/reuse content in meaningful ways through unique and highly efficient distribution means. Describes how distribution can be to desktop, mobile, and advancing technologies in the home or automobile markets. Laptop Required. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 3290  
Developing Digital Media for Instruction and Training  
3:3:0  
Fall  
* Prerequisite(s): Portfolio Review Acceptance and University Advanced Standing  
Teaches the lifecycle of training and development in a business setting. Uses the Instructional System Design (ISD) process, which includes identifying performance deficiencies and appropriate interventions, developing objectives, selecting appropriate learning technologies, developing course content, selecting effective instructional aids, delivering training, and evaluating training effectiveness. Reviews basic educational principles in teaching adult learners and managing classroom dynamics. Examines legal issues, cross-cultural preparation, and workforce diversity as they relate to training and development. Provides hands-on training experiences. Completers should be prepared to apply basic principles to training and development opportunities. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 3300R  
Advanced Topics in Digital Media Graphics  
1 to 4:0 to 4:0 to 12  
On Sufficient Demand  
* Prerequisite(s): Portfolio Review Acceptance and University Advanced Standing  
Intended for advanced students with an interest in digital graphics and design. Includes relevant and changing topics and tools. Emphasizes hands-on experience along with lectures and demonstrations. Curriculum may vary from one semester to another. May be repeated for a maximum of 9 credits toward graduation. Course fee of $10 for equipment applies. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 3320  
Digital Photography and Compositing II  
3:3:0  
Fall, Spring  
* Prerequisite(s): Portfolio Review Acceptance and University Advanced Standing  
Builds on skills acquired in Digital Photography and Imaging I. Uses photo imaging tools like Photoshop, Light Table, and Aperture in the creation and manipulation of digital images for use in a broad range of output specific formats. Teaches advanced image manipulation, and compositing and asset management to deliver finished digital image deliverables for such things as the web, DVD, media, print, billboard, and wrap advertising media. Lab access fee of $45 for computers applies.

DGM 3410  
Audio Engineering for the Studio I  
3:3:0  
Fall  
* Prerequisite(s): Portfolio Review Acceptance and University Advanced Standing  
Reviews basic sound principles (standing waves, studio acoustics, psycho-acoustics), microphone types and techniques of use. Covers theory and application of mixers, signal processors, and effects. Outlines proper construction and grounding of a recording studio. Introduces one or more digital audio workstations, which will be used to record a band or classical project. Requires the completion of a mixdown of a multi-track project. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 3420  
Studio Recording II  
3:3:0  
Spring  
* Prerequisite(s): DGM 3410, Portfolio Review Acceptance, and University Advanced Standing  
Reviews principles of good audio engineering covered in the introductory class, but in greater depth, including, cable types, microphone types, mixers, and techniques of use. Emphasis will be on miking techniques for each individual instrument involved in the recording. Covers in-depth theory and application of mixers, signal processors, and effects. Addresses advanced stereo miking techniques and focuses on several key instruments, including piano and drums. Continues further in-depth topics on impedance matching, power requirements, and use of the decibel. Includes acoustic properties and sound transmission loss of common studio surface materials. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 3430  
Recording Studio Design Principles and Practices  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): DGM 3410, Portfolio Review Acceptance, and University Advanced Standing  
Addresses many issues found in the design, construction and maintenance of a recording studio. Explores the physics, mathematics, electronics, and practical issues to properly design and build a successful recording studio. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 3440  
Sound for Games  
3:3:0  
* Prerequisite(s): Portfolio Review Acceptance and University Advanced Standing; Laptop capable of running the Unreal Developer's Kit and Unity.  
Teaches sound design and implementation for video games using both the Unreal Developer's Kit (Unreal Engine) and the Unity Game Engine. Includes visual and text-based scripting, signal flow, resource allocation and preservation, priority, layering, mastering for end-format, computer-based, console-based, and mobile-targeted development, and whole-project planning and execution. Software fee of $15 applies. Lab access fee of $45 for computers applies.
Course Descriptions

DGM 3460
Live Sound Reinforcement
3:3:0
Spring
* Prerequisite(s): Portfolio Review Acceptance and University Advanced Standing

Teaches fundamental sound concepts: propagation, absorption, reflection, transmission, frequency response, effective manipulation of the decibel in calculations of loudness, power, and voltages. Covers intelligent use of microphone patterns, and loudspeaker and monitor placement. Investigates indoor sound vs. outdoor sound. Teaches proper cabling and connections, speaker crossovers, and theory of bi-amplification. Covers mixer diagrams and basic electronics. Incorporates practical experience acquired in giving technical support to UVU theater, music department, or public relations functions. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 3481
Advanced Audio Restoration and Forensics
3:3:0
Fall
* Prerequisite(s): Portfolio Review Acceptance and University Advanced Standing

Covers advanced principles and practices for digitally restoring difficult audio specimens, and includes forensic audio restorative and reconstructive techniques important to historical, investigative, and criminological fields as well. Also covers, in more depth, the cylinder recording period at the turn of the century. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 3490
Digital Audio Workstation Training III
3:2:3
Fall, Spring
* Prerequisite(s): Portfolio review acceptance; DGM 2490, DGM 2491, and University Advanced Standing

Teaches proficiency in the use of a Digital Audio Workstation at the advanced level. Is the UVU implementation of the first half of AVID Corporation's "ProTools Operator Level" certification, and successful completion of this course, together with its follow-on course, DGM 3491, will make AVID ProTools certification at the "Operator" level available. Lab access fee of $45 for computers applies.

DGM 3491
Digital Audio Workstation Training IV
3:2:3
Fall, Spring, Summer
* Prerequisite(s): Portfolio review acceptance, DGM 3490, and University Advanced Standing

Teaches proficiency in the use of a Digital Audio Workstation at the expert level. Currently, this is the UVU implementation of the second half of AVID Corporation's "ProTools Operator Level" certification, and successful completion of this course, together with its preceding course, DGM 3490, will make AVID ProTools certification at the "Operator" level available. Lab access fee of $45 for computers applies.

DGM 350R
Advanced Topics in Digital Motion Picture Production
1 to 4:0 to 4:0 to 12
On Sufficient Demand
* Prerequisite(s): Portfolio Review Acceptance and University Advanced Standing

Includes relevant and changing topics and tools used in digital motion picture industry. Emphasizes hands-on experience. Uses digital cinema and production management and development tools to create a typical digital media project. Curriculum may vary from one semester to another. May be repeated for a maximum of 9 credits toward graduation. Course fee of $10 for equipment applies. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 351R
Digital Broadcasting
3:1:6
On Sufficient Demand
* Prerequisite(s): DGM 2110, Portfolio Review Acceptance, and University Advanced Standing

Teaches planning, management and execution of live video productions integrating multiple cameras. Teaches the roles of the broadcast production team. Studies digital standards for broadcast equipment. Includes multiple 10 hour hands-on broadcast production labs. May be repeated for a maximum of 12 credits toward graduation. Course fee of $10 for equipment applies. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 3520
Digital Cinema Production III
3:2:2
Fall, Spring
* Prerequisite(s): DGM 2110 and University Advanced Standing

Teaches skills to produce a micro-budget film. Introduces practical production techniques including paperwork for the Screen Actors Guild and for standard distribution deliverable requirements. Involves the completion of various finished short films both in groups and as individuals. Course fee of $10 for equipment applies. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 3530
Digital Cinema Production Management
3:3:0
Fall, Spring
* Prerequisite(s): Portfolio review acceptance or consent of instructor) and University Advanced Standing

Teaches the foundational principles which contribute to both quality and profitability in digital cinema projects that range from micro to mega budgets. Reviews team dynamics such as the relationship between producer and other production team members. Introduces industry standard budgeting and scheduling software tools, which can be used as management tools to guide multiple projects. Focuses on video/film workflow, from development and budgeting to pre-production, production and post-production. Requires the submission of an industry standard production book at the end of the semester. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 3540
Cinematography II
3:2:3
Fall, Spring
* Prerequisite(s): Portfolio Review Acceptance and University Advanced Standing

A "hands-on" class that covers the role of the Director of Photography (DP) and Gaffer in drama-based broadcast television and digital cinematography. Teaches continuity of lighting, visual story telling, implied script subtext though light quality and color, continuity in direction, use of lenses and shot blocking for fixed and moving camera. Covers advanced grip and lighting equipment use and setups. Covers working with a producer, director, production designer, set decorator, boom operator and editor and on-set protocol. Software fee of $15 applies. Lab access fee of $45 for computers applies. Course fee of $46 for equipment applies.

DGM 3545
Advanced Editing for Mixed Reality Content
3:2:2
Spring
* Prerequisite(s): DGM 2545 and University Advanced Standing

Provides advanced training and practice in editing in multiple platforms for use of Mixed Reality content (including virtual and augmented reality, etc). Explores new and emerging technologies for stitching, editing, combining visual-image with immersive sound, and delivery in multiple formats. Lab access fee of $45 for computers applies.

DGM 3550
Producing I
3:3:0
Fall, Spring
* Prerequisite(s): Portfolio Review Acceptance and University Advanced Standing

Examines the process of motion picture development and distribution with focus on the role of the producer in identifying, evaluating, developing, financing and securing distribution. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 3560
Digital Cinema Editing II
3:3:1
Fall, Spring
* Prerequisite(s): DGM 1061, Portfolio Review Acceptance, and University Advanced Standing

Develops an understanding of how editing can shape cinematic storytelling using content from a variety of media and in various styles. Provides further practice in hands-on application on a variety of professional Non-Linear Editing platforms. Course fee of $13 for software and plug-ins applies. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 3570
Storytelling for Digital Media II
3:2:2
Fall, Spring
* Prerequisite(s): DGM 2570 or THEA 2742, Portfolio Review Acceptance and University Advanced Standing

Teaches advanced writing for cinema, television and emerging media. Includes writing assignments each week that will be read and analyzed according to the structure and execution of a goal. Discusses a specific scriptwriting subject each week such as finding the idea, researching, outlining and rewriting. Course fee of $13 for software and plug-ins applies. Software fee of $15 applies. Lab access fee of $45 for computers applies.
DGM 3571 Animation Story Development Workshop 3:2:3 Spring
* Prerequisite(s): ENGL 2010 and Portfolio Review Acceptance and University Advanced Standing

Covers short themed preproduction and development for animated and interactive titles. Includes research, outlining, writing using the iterative process, and preparation for story reel production. Lab access fee of $45 for computers applies.

DGM 3580 Digital Cinema Directing Workshop I 3:2:3 Fall, Spring
* Prerequisite(s): DGM 1510, DGM 1520, DGM 2110, Portfolio Review Acceptance and University Advanced Standing

Offers an advanced workshop format class structure. Utilizes project-based opportunities to apply and hone skills in digital cinema direction, editing scripts, casting, rehearsing and performing a scene. Includes polishing concept for shooting, then shooting and editing for presentation and critique. Course fee of $13 for software and plug-ins applies. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 3590 Documentary I 3:2:2 On Sufficient Demand
* Prerequisite(s): (DGM 1061, DGM 1510, DGM 1520, portfolio review acceptance or instructor approval) and University Advanced Standing

Presents intermediate viewing and discussion of selected documentaries and instruction in various production skills necessary to create video documentaries. Explores the diversity of documentary styles and approaches including interview, archival, observational, etc. Focuses on character driven stories using traditional three act structures. Requires the completion of various exercises from conceptualization through post-production, culminating in production of short documentary project. Lab access fee of $45 for computers applies.

DGM 360R Advanced Topics in Animation and Games 1 to 4:0 to 4:0 to 12
* Prerequisite(s): Portfolio Review Acceptance and University Advanced Standing

Intended for advanced students with an interest in digital animation. Includes relevant and changing topics and tools. Emphasizes hands-on experience along with lectures and demonstrations. Curriculum may vary from one semester to another. May be repeated for a maximum of 9 credits toward graduation. Course fee of $12 for equipment applies. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 3610 Game Design II 3:2:3 On Sufficient Demand
* Prerequisite(s): Portfolio Review Acceptance and University Advanced Standing

Continues the study of game theory, analysis, and design documentation. Emphasizes game development using a game development engine. A laptop computer is required for this course. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 3620 Technical Direction and Design for Animated Applications 3:2:3 Fall
* Prerequisite(s): DGM 2221, DGM 2620, DGM 2670, Portfolio Review Acceptance, and University Advanced Standing

Introduces industry standard technical direction problem solving practices. Includes project management, aesthetic development, and game play design. Software fee of $15 applies. Course fee of $20 applies. Lab access fee of $45 for computers applies.

DGM 3621 Hard Surface Modeling 3:2:3 On Sufficient Demand
* Prerequisite(s): Portfolio Review Acceptance and University Advanced Standing

Teaches theories, tools, and principles of current industry modeling trends, specifically for video games and short animated films. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 3641 Game Level Design 3:2:3
* Prerequisite(s): DGM 2610, Portfolio Review Acceptance, and University Advanced Standing

Provides an advanced treatment of a three step process in level/environmental design: Research and analysis, concept and prototype development, and testing and comparative metrics. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 3650 Animation and Game Project I 3:1:6 Fall
* Prerequisite(s): Portfolio Review Acceptance and University Advanced Standing

Emphasizes industry pipeline processes. Covers the application of lighting and rendering in 3D animation and game environments. Includes composition, technical lighting, layer-based rendering, and texture baking. A junior-level group project will be completed in the course of the semester. Lab access fee of $45 for computers applies.

DGM 3660 Advanced Rigging and Character Effects 3:2:3 Spring
* Prerequisite(s): DGM 2211, Portfolio Review Acceptance, and University Advanced Standing

Studies the process of rigging, and the motion of characters and objects in games and animation. Includes full character, muscle, facial, and dynamic rigs. Reinforces principles of animation. Lab access fee of $45 for computers applies.

DGM 3670 Scripting for Animation and Games III 3:2:3 Fall
* Prerequisite(s): DGM 2670, Portfolio Review Acceptance, and University Advanced Standing

Provides in-depth training in advanced scripting concepts and practices in 3D video game development. Focuses on the application of advanced technical topics as they impact game development. Addresses networking and distributed systems issues, including scalability and latency compensation techniques, for designing games for online multi-player environments. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 3680 Animation and Game Project II 3:1:6 Spring
* Prerequisite(s): Portfolio Review Acceptance and University Advanced Standing

Devoted to the pre-production of a multi-semester team project for gaming and animation students. Includes research, writing, scripting, designing, storyboarding and pre-visualization of a client-driven project. Software fee of $15 applies. Course fee of $19 for software and plug-ins applies. Lab access fee of $45 for computers applies.

DGM 370R Advanced Topics in Web Design and Development 1 to 4:0 to 4:0 to 12
* Prerequisite(s): Portfolio Review Acceptance and University Advanced Standing

Intended for advanced students with an interest in Internet authoring. Includes relevant and changing topics and tools. Emphasizes hands-on experience along with lectures and demonstrations. Curriculum may vary from one semester to another. May be repeated for a maximum of 9 credits toward graduation. Course fee of $10 for equipment applies. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 3740 Web Content Management 3:3:0 Spring
* Prerequisite(s): Portfolio Review Acceptance and University Advanced Standing

Instructs students on how to create a site that in content rich, dynamic, and meaningful to site visitors. Teaches participants how to effectively plan, develop, and arrange content through the use of information design principles, content management systems, and analysis tools. Culminates with students building a live site for a real-world client where students must solve real design, development, and delivery issues. Software fee of $15 applies. Course fee of $19 for software and plug-ins applies. Lab access fee of $45 for computers applies.
Course Descriptions

DGM 3750
Media Traffic and Analytics
3:3:0 Fall
* Prerequisite(s): Portfolio Review Acceptance and University Advanced Standing

Provides students access to all the leading and most effective traffic techniques, ranging from organic search traffic and all aspects of SEO, through paid traffic of all kinds, and on to free, direct traffic methods. Includes Web and Mobile traffic techniques and analytical tools. Covers all the concepts involved in these areas of traffic and analytics, and will have experience actually generating traffic to a real web page (and may even make money), and using analytical tools to evaluate their results. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 3760
Web Languages II
3:3:0 Fall
* Prerequisite(s): Portfolio Review Acceptance and University Advanced Standing

Covers server-side web development and database interaction. Offers the skills and knowledge necessary to produce web sites in a professional environment. Covers current technology and design standards for websites that are database driven using current languages and platforms. Demonstrates how database interaction can enhance a multimedia website. Includes lectures, demonstrations, and weekly projects. May be delivered hybrid. Software fee of $15 applies. Course fee of $19 for software and plug-ins applies. Lab access fee of $45 for computers applies.

DGM 3780
Web Tools and Frameworks II
3:3:0 Spring
* Prerequisite(s): Portfolio Review Acceptance and University Advanced Standing

Participants learn advanced techniques for delivering exceptional Flash based Internet applications. Teaches advanced scripting fundamentals, how to deliver content through server-side database connectivity, and engaging the audience through highly interactive experiences. Software fee of $15 applies. Course fee of $19 for software and plug-ins applies. Lab access fee of $45 for computers applies.

DGM 3790
Rich Internet Application Development I
3:3:0 Fall
* Prerequisite(s): Portfolio Review Acceptance and University Advanced Standing

Describes various Rich Internet Application development technologies. Investigates RIA development and delivery technologies such as JavaScript frameworks, API usage, and developer productivity tools with a special emphasis on the integration of Digital Media into Internet applications. Teaches the design and development workflow for interactive, media-rich applications delivered via networked browser, computer desktops, and mobile devices. Software fee of $15 applies. Course fee of $19 for software and plug-ins applies. Lab access fee of $45 for computers applies.

DGM 4000
Writing for Digital Media
3:3:0 Fall, Spring
* Prerequisite(s): ENGL 2010, Portfolio Review Acceptance, and University Advanced Standing

Teaches the role of the written word in the digital arena and the writing skills for students to become effective communicators within the various forms of multimedia including web pages, digital animation, audio, video and cinema. Lab access fee of $45 for computers applies.

DGM 4261
Mixed Reality Studio
3:3:0 Spring
* Prerequisite(s): DGM 3281, Portfolio Review Acceptance, and University Advanced Standing

Applies knowledge and skills from previous mixed reality courses to assemble and publish highly interactive mixed reality experiences to multiple platforms. Represents the culmination of previous mixed reality courses in which projects will be hands-on practical application of technologies preparing students for senior capstone projects. Lab access fee of $45 for computers applies.

DGM 4280
Authoring Adaptive Experiences II
3:3:0 Spring
* Prerequisite(s): DGM 3280 and University Advanced Standing

Focuses on the advanced application of media technologies that possess the ability to create adaptable media experiences. Focuses primarily on the ability to curate and realign rich content assets through Internet-based Apps. Teaches principles of distribution that can be applied to desktop, mobile, and advancing technologies in the home or automobile markets with a specific focus on dynamic retrieval and adaptation of content. *Laptop Initiative Requirement. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 4290
Designing Voice Experiences
3:3:0 Fall
* Prerequisite(s): Portfolio Review Acceptance and University Advanced Standing

Teaches fundamentals of Voice Experience design and development for verbal digital interfaces. Addresses technical challenges for verbal and conversational digital experiences in real world applications. Introduces basic content creation and verbal logic theory for varying artificial intelligence platforms. Lab access fee of $45 for computers applies.

DGM 4310
Senior Capstone I
3:1:6 Fall
* Prerequisite(s): Portfolio Review Acceptance and University Advanced Standing

For senior Digital Media students. Provides a capstone experience working in digital media. Develops individual real world projects in consultation with a faculty advisor. Encourages team work. Course fee of $10 for equipment applies. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 4410
Senior Capstone II
3:1:6 Spring
* Prerequisite(s): DGM 4310, Portfolio Review Acceptance, and University Advanced Standing

Conclusion of DGM 4310. Concludes the capstone experience for digital media students. Addresses post production issues such as testing, packaging, and documentation. Offers the opportunity to present projects to students, faculty, sponsors, and potential employers or clients. Course fee of $10 for equipment applies. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 4420
Applied Digital Media Technology
3:3:0 On Sufficient Demand
* Prerequisite(s): University Advanced Standing

For educators and general public interested in technology integration. Examines the ever-expanding array of options available to educators, business personnel and government agencies for creating and distributing rich media based materials. Explores what new technologies and creative practices are available and how to implement them into their present workflow. Focuses on getting the most out of Digital Media technology. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 4430
Audio Mastering
3:3:0 Fall
* Prerequisite(s): DGM 3420, Portfolio Review Acceptance, and University Advanced Standing

Deals with the final step in any audio production--Mastering. Covers the art of final EQ and Compression. Explores the issues of bit depth, sampling rates, dither, jitter, EQ techniques, and Dynamic Range manipulation (expanders and compressors). Looks into analog and digital signal processors, including reverbs, and the final step of putting an album together with a brief discussion on vinyl pre-mastering. Teaches the use no fewer than 15 different compressors, both analog and digital for comparative listening tests. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 450R
Story Editing for Digital Media
3:2:3 Fall, Spring, Summer
* Prerequisite(s): DGM 1510 and University Advanced Standing
* Prerequisite(s) or Corequisite(s): DGM 2570 or THEA 2742

Teaches necessary skills for working with writers and producers preparing scripts for production through various media technologies. Uses Daniel Methodology to analyze stories in all stages from early concept to production scripts, identify strengths, diagnose weaknesses, and find possible solutions to strengthen the scripts. Teaches consulting techniques for working with writers and producers to communicate clearly in a way that encourages and empowers them to suit their storytelling plan to the appropriate technologies. May be repeated for a maximum of 6 credits toward graduation. Lab access fee of $45 for computers applies.
DGM 4510 Visual Effects for Digital Cinema II 3:2:3 Spring
Prerequisite(s): DGM 2510 and University Advanced Standing

Provides an advanced practicum in a variety of professional Visual Effects software used in conjunction with NLE (Non-Linear Editing) software in current industry use. Further develops on the foundation of understanding of cinematic post-production workflows utilized by professional visual effects houses. Overviews a broad survey of types of visual effects in use today and the evolution of various programs and their shifting capabilities. Lab access fee of $45 for computers applies.

DGM 4511 Film Production Analysis II 3:1:6 Fall, Spring
Prerequisite(s): (DGM 1510 or instructor approval) and University Advanced Standing

Immerses participants in the theory and practice of effective storytelling through digital media. Features films and Daniel Methodology analysis as a foundation, then branches into applying Daniel Methodology to other media, including television series, documentaries, animation, gaming, interactive design and virtual reality. Prepares students for the rigorous requirements of the digital media industry in key creative professional roles, including writing, directing, producing and editing. Lab access fee of $45 for computers applies.

DGM 4530 Special Topics-Cinematography Masterworks 3:2:3 Fall
Prerequisite(s): DGM 1510, DGM 1520, DGM 2540, and University Advanced Standing

Surveys selected cinematographers and their works. Looks at each cinematographer’s films in chronological order from their earliest to more recent and analyzes their progression throughout their career. Evaluates individual technique and style in depth, breaking down films, scene by scene. Lab access fee of $45 for computers applies.

DGM 4540 III Cinematography 3:2:3 Spring
Prerequisite(s): DGM 3540 and University Advanced Standing

Offers an advanced workshop format class structure. Utilizes project-based opportunities to apply and hone advanced professional skills in composition, lighting and camera movement. May be repeated for a maximum of 9 credits toward graduation. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 4550 Producing II 3:3:0 Spring
Prerequisite(s): DGM 3550

Implements the advanced process of motion picture development and distribution with focus on the role of the producer in identifying, evaluating, developing, financing and securing distribution. Lab access fee of $45 for computers applies.

DGM 4560 Output and Color for Digital Cinema II 3:2:2 Fall, Spring
Prerequisite(s): DGM 1061, DGM 2340, Portfolio Review Acceptance or instructor approval, and University Advanced Standing

Focuses on advanced digital post-production workflow, digital output, and color grading for digital cinema productions. Furthers training in professional industry standard software used for color grading, output and compression. Prepares students for a career in post-production with emphasis on the careers of the Digital Imaging Technician and Color Grader. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 456R Digital Cinema Editing III 3:2:2 Fall, Spring
Prerequisite(s): DGM 3650, Portfolio Review Acceptance, and University Advanced Standing

Immerses participants in the theory and practice of effective storytelling through digital media. Features films and Daniel Methodology analysis as a foundation, then branches into applying Daniel Methodology to other media, including television series, documentaries, animation, gaming, interactive design and virtual reality. Prepares students for the rigorous requirements of the digital media industry in key creative professional roles, including writing, directing, producing and editing. Lab access fee of $45 for computers applies.

DGM 457R Storytelling for Digital Media III 3:2:3 Fall, Spring, Summer
Prerequisite(s): DGM 1510 and (DGM 2570 or THEA 2742), University Advanced Standing

Focuses on advanced writing for longform media projects including feature narrative films, documentary projects, episodic television series, experimental new media, interactive games, etc. Introduces participants to the process, discipline and format necessary to outline, write and refine a character-driven media script that will ultimately have a running-time of greater than forty-five minutes. May be repeated for a maximum of 9 credits toward graduation. Lab access fee of $45 for computers applies.

DGM 458R Digital Cinema Directing Workshop II 3:2:3 Fall, Spring
Prerequisite(s): DGM 3580 and University Advanced Standing

Offers a professional level workshop format class structure for students interested in feature film and television direction, as well as other narrative screen-based content. Focuses include approaches to evaluating story and screenplays, directing actors, staging and blocking scenes, and approaches to visual/cinematic storytelling. May be repeated for a maximum of nine credits toward graduation. Lab access fee of $45 for computers applies.

DGM 459R Documentary II 3:2:3 On Sufficient Demand
Prerequisite(s): DGM 1520, DGM 3590, and University Advanced Standing

Implements the advanced process of motion picture development and distribution with focus on the role of the producer in identifying, evaluating, developing, financing and securing distribution. Lab access fee of $45 for computers applies.

DGM 4600 Producing Technology based Training 3:3:0 On Sufficient Demand
Prerequisite(s): Portfolio Review Acceptance and University Advanced Standing

Provides shadowing opportunities in an educational or business setting where students can see basic principles of training and development in action and gain insights into training design, development, implementation, and evaluation. Uses the course map content from the DGM 3290 course to pre-author a technology-based training program, which includes creating a course navigation map (flowchart) to determine course sequence and navigational paths, designing storyboard frames with multimedia elements, and generating the navigation map and storyboards into an authoring tool. Completers should be prepared to apply shadowing experiences, discussion insights, and pre-authoring computer skills to future training opportunities. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 4610 Producing Technology based Training 3:3:0 On Sufficient Demand
Prerequisite(s): DGM 4610 and University Advanced Standing

Provides shadowing opportunities in an educational or business setting where students can see basic principles of training and development in action and gain insights into training design, development, implementation, and evaluation. Uses the course map content from the DGM 3290 course to pre-author a technology-based training program, which includes creating a course navigation map (flowchart) to determine course sequence and navigational paths, designing storyboard frames with multimedia elements, and generating the navigation map and storyboards into an authoring tool. Completers should be prepared to apply shadowing experiences, discussion insights, and pre-authoring computer skills to future training opportunities. Software fee of $15 applies. Lab access fee of $45 for computers applies.

DGM 4620 Performance Animation 3:2:3 On Sufficient Demand
Prerequisite(s): Portfolio Review Acceptance and University Advanced Standing

Teaches basic animation principles, such as: flexibility, timing and spacing, overlapping action, the successive-breaking-of-joints, and overlapping action. Covers theatrical performance animation, emotional facial, phoneme, and dialoged animation. Explores expressive character enactment, representative of life. Software fee of $15 applies. Lab access fee of $45 for computers applies.
**Course Descriptions**

**DGM 4630**  
**Technical Direction for Animation and Game Development I**  
3:3:0  Fall  
* Prerequisite(s): DGM 4630, Portfolio Review Acceptance, and University Advanced Standing  
Focuses on the production of digital special effects and compositing in 2D and 3D environments. Includes multi-layer effects, green screen, digital mattes, and grading. Tools may include visual effects editing and particle generation software. Software fee of $15 applies. Course fee of $19 for software and plug-ins applies. Lab access fee of $45 for computers applies.

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**DGM 4640**  
**Technical Direction for Animation and Game Development II**  
3:3:0  Spring  
* Prerequisite(s): DGM 4630, Portfolio Review Acceptance, and University Advanced Standing  
Focuses on the use of digital special effects in a three-dimensional environment including high-end particle effects, digital fluids, and advanced simulation. Tools include industry standard Maya and Houdini. Software fee of $15 applies. Lab access fee of $45 for computers applies.

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**DGM 4790**  
**Rich Internet Application Development II**  
3:3:0  Spring  
* Prerequisite(s): DGM 3790, Portfolio Review Acceptance, and University Advanced Standing  
Describes various Rich Internet Application development technologies with a focus on utilizing server-side resources. Investigates a wide variety of RIA technologies including cloud services, API development, and dynamic data stores. Teaches how to design and develop RIAs using a variety of tools, code frameworks, and delivery clients. Requires creation of interactive and useful media-rich web experiences for end users. Software fee of $15 applies. Lab access fee of $45 for computers applies.

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**DGM 481R**  
**Internship**  
1 to 8:1 to 8:0  Fall, Spring, Summer  
* Prerequisite(s): Portfolio Review Acceptance and University Advanced Standing  
For Digital Media majors only. Provides a transition from school to work where learned theory is applied to actual practice through a meaningful on-the-job experience. Includes student, employer and coordinator evaluations, on-site work visits, and written assignments. Completers should obtain experience in establishing and accomplishing individualized work objectives that improve work performance. Internship is intended for senior DGM students who are working at that level. Credit is determined by the number of hours a student works during the semester and completion of individually set goals. May be repeated for a maximum of 16 credits towards graduation. May be graded credit/no-credit.

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**DGM 497R**  
**Independent Study**  
1 to 3:0 to 3:0 to 9  Fall, Spring, Summer  
* Prerequisite(s): Portfolio Review Acceptance and University Advanced Standing  
For bachelor's degree students and other interested persons. Offers independent study as directed in reading or in individual projects; offered at the discretion and approval of the department chairperson. May be repeated for a maximum of 6 credits toward graduation.

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**Diesel Mechanics (DMT)**

**DMT 1000**  
**Related Oxyacetylene and Arc Welding**  
3:1:7  Fall, Spring  
Specialty course designed for diesel mechanics, other trade areas, and interested community members. For beginning students. Covers theory and practice of oxyacetylene and arc welding of mild steel. Includes identification of basic and filler metals and melting temperatures of various metals. Emphasis is placed on root penetration and fusion of welded materials. Completers should be able to weld in their professional area. Tool room fee of $19 for equipment applies.

**DMT 1005**  
**Basic Shop and Safety Skills**  
2:1:3  Fall, Spring, Summer  
Covers the selection and usage of basic occupational hand tools. Presents fasterener types and applications. Provides practice on proper drill and tap skills. Includes experience learning correct measuring skills. Addresses manufacturers electronic service literature and search engines. Classifies and employs shop measuring tools with their specific functions. Covers recognition of fundamental heavy truck/equipment engine, power-train and chassis components. Emphasizes shop safety guidelines and proper handling of hazardous materials. Requires safety certification.

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**DGM 1110**  
**Diesel Engine Overhaul**  
4:4:0  Fall, Spring  
* Corequisite(s): DMT 111L  
* Prerequisite(s) or Corequisite(s): DMT 1005  
Introduces diesel engine operating principles, factors affecting performance, design variations, and identification of components. Focuses on disassembly and reassembly of diesel engines following industry standard overhaul procedures. Includes the identification, inspection, and measuring of parts to determine condition for reuse. Uses failed components to assist in teaching troubleshooting skills. Provides theory of engine tune-up processes on various engines used by industry. Software fee of $10 applies. Lab access fee of $15 for computers applies.

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**DGM 111L**  
**Diesel Engine Overhaul Lab**  
2:0:6  Fall, Spring  
* Corequisite(s): DMT 1110  
* Prerequisite(s) or Corequisite(s): DMT 1005  
Provides hands on experience in diesel engine operating principles, factors affecting performance, design variations, and identification of components. Includes disassembly and reassembly of diesel engines following industry standard overhaul procedures. Focuses the identification, inspection, and measuring of parts to determine condition for reuse. Utilizes failed components to assist in teaching troubleshooting skills. Tool room fee of $19 for equipment applies. Course Lab fee of $22 for materials applies.

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**DMT 1120**  
**Diesel Engine Operation Tune Up**  
4:4:0  Fall, Spring  
* Corequisite(s): DMT 112L  
* Prerequisite(s) or Corequisite(s): DMT 1110 and DMT 111L  
Covers diesel engine components, controls, operating systems, and performance factors. Addresses engine component replacement, tune-up adjustments, and the requirements for engine dynamo-meter testing. Emphasizes basic engine operating factors and troubleshooting complaints such as: low power, smoke conditions, and engine faults. Software fee of $10 applies. Lab access fee of $15 for computers applies.

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**DMT 112L**  
**Diesel Engine Operation Tune up Lab**  
2:0:6  Fall, Spring  
* Corequisite(s): DMT 1120  
* Prerequisite(s) or Corequisite(s): DMT 1110 and DMT 111L  
Examines diesel engine components, operating systems, and performance factors. Provides opportunity to perform hands on component replacement and tune-up adjustments. Provides the opportunity to run an engine under load in a dynamometer test cell. Troubleshoots common engine operating complaints, such as low power, smoke conditions, engine faults, etc. Tool room fee of $19 for equipment applies. Course Lab fee of $27 for materials applies.

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**DMT 1510**  
**Electrical Systems I**  
4:4:0  Fall, Spring  
* Prerequisite(s): AUT 1260 (or any MAT or MATH course 1000 or higher) with a C- or better  
* Corequisite(s): DMT 151L  
Teaches the definition of electricity; voltage, current, and resistance as well as the electrical rules of Ohm's law, Watt's law, Kirchhoff's circuit laws. Provides examples of the application of the above laws in both series and parallel circuits. Includes instruction on the proper use of DVOM's and their function in diagnosing and troubleshooting electrical circuitry on heavy trucks and equipment. Teaches electrical components and symbols. Teaches correct repair procedures for wiring, fuses, and connectors. Addresses starting and charging system operation and testing. Emphasizes all safety procedures practices. Software fee of $10 applies. Lab access fee of $15 for computers applies.
DMT 151L Electrical Systems I Lab 2:0:6 Fall, Spring
* Prerequisite(s): AUT 1260 (or any MAT or MATH course 1000 or higher) with a C- or better
* Corequisite(s): DMT 1510
Provides hands-on experience using a DVOM on series and parallel circuits. Identifies electrical components and examines their functions. Describes testing batteries, starting systems, and charging systems. Identifies the correct repairs on these systems and when applicable. Provides practice in electrical safety and preventative maintenance. Covers basic electrical repair techniques. Tool room fee of $19 for equipment applies. Course Lab fee of $30 for materials applies.

DMT 1520 Electrical Systems II 2:2:0 Fall, Spring
* Corequisite(s): DMT 152L
* Prerequisite(s) or Corequisite(s): DMT 1510 and DMT 151L
Covers heavy and medium duty vehicle electrical systems including lighting, climate control, computer controls and accessories. Emphasizes DOT lighting regulations for vehicles and trailers. Introduces fundamentals of electrical circuitry and schematics. Examines the computer controls on modern vehicle electrical systems. Software fee of $10 applies. Lab access fee of $15 for computers applies.

DMT 152L Electrical Systems Lab II 1:0:3 Fall, Spring
* Corequisite(s): DMT 1520
* Prerequisite(s) or Corequisite(s): DMT 1510 and DMT 151L
Focuses on lab work for the troubleshooting and repair of heavy/medium duty electrical systems and electronic engine management. Includes vehicle and trailer lighting, monitoring, and control systems. Emphasizes DOT safety regulations requirements. Tool room fee of $19 for equipment applies. Course Lab fee of $25 for materials applies.

DMT 2230 Heating Ventilation Air Conditioning and Refrigeration Theory 2:2:0 Fall, Spring
* Corequisite(s): DMT 223L
* Prerequisite(s) or Corequisite(s): DMT 1510 and DMT 151L
Teaches the principles of heat transfer using refrigerant as the medium. Emphasizes the identification and operation of individual system components. Discusses the different types of refrigerants used in the mobile industry as well as recovery, recycling, storage, handling, and disposal. Also covers the theory and operation of auxiliary power units used on highway trucks. Software fee of $10 applies. Course fee of $10 for materials applies. Lab access fee of $15 for computers applies.

DMT 223L Heating Ventilation Air Conditioning and Refrigeration Lab 1:0:3 Fall, Spring
* Corequisite(s): DMT 2230
* Prerequisite(s) or Corequisite(s): DMT 1510 and DMT 151L
Teaches correct use of modern HVACR testing and repair equipment. Provides hands-on opportunity to troubleshoot and service modern HVACR systems. Examines and practices EPA approved handling of current refrigerants used in current vehicles and equipment. Provides hands-on opportunity to locate, identify, test, service, and troubleshoot different types of mobile AC systems using EPA approved equipment & procedures. Also provides hands-on experience with auxiliary power units used on highway trucks. Tool room fee of $19 for equipment applies. Course Lab fee of $19 for materials applies.

DMT 2310 Fluid Power I Theory 4:4:0 Fall, Spring
* Prerequisite(s): AUT 1260 (or any MATH MAT course 1000 or higher) with a C- or better
* Corequisite(s): DMT 231L
Outlines the fundamental principles of fluid power (hydraulics). Emphasizes the relationship between pressure, force, area, and resistance. Covers Bernoulli’s principle in connection with hydraulic: flow, horsepower torque and the conservation of energy. Illustrates the application and operation of all of the essential components and valving found in a hydraulic system. Identifies types of circuit designs and schematic symbols. Software fee of $10 applies. Lab access fee of $15 for computers applies.

DMT 231L Fluid Power I Lab 2:0:6 Fall, Spring
* Prerequisite(s): AUT 1260 (or any MATH MAT course 1000 or higher) with a C- or better
* Corequisite(s): DMT 2310
Provides practical lab experience for the identification, operation, and repair of basic hydraulic system components and circuits. Utilizes various lab equipment and machinery to highlight basic system designs and use of schematics. Emphasizes the safe and proper usage of hydraulic diagnostic equipment or tools necessary for component and system testing. Tool room fee of $19 for equipment applies. Course Lab fee of $17 for materials applies.

DMT 2320 Fluid Power II Theory 4:4:0 Fall, Spring
* Prerequisite(s): DMT 2310, DMT 231L
* Corequisite(s): DMT 232L
Covers the design and operation of variable displacement pumps and motors, emphasizing those that are load sensing and pressure compensating. Focusses on the electronic controls of fluid power systems including open and closed loop circuits. Analyzes corresponding electronic controls on hydraulic schematics. Presents the theory and operation of hydrostatic and automatic transmissions used with heavy equipment and medium/heavy duty trucks. Emphasizes component operation, maintenance, repair, testing, and troubleshooting. Software fee of $10 applies. Lab access fee of $15 for computers applies.

DMT 232L Fluid Power II Lab 2:0:6 Fall, Spring
* Prerequisite(s): DMT 2320
* Corequisite(s) or Corequisite(s): DMT 2310 and DMT 231L
Focuses on the use of hydraulic test equipment to diagnose and troubleshoot systems using electronic, proportional or load sensing components. Covers the testing and correct adjustment of load sensing/ pressure compensated pumps. Provides for the disassembly, inspection, reassembly and testing of hydrostatic transmissions. Provides experience to build and troubleshoot electronically controlled hydraulic circuits, troubleshoot electronically controlled hydrostatic transmissions as well as Allison transmissions. Emphasizes the use of diagnostic tools and service manuals. Tool room fee of $19 for equipment applies.

DMT 2410 Chassis Theory 4:4:0 Fall, Spring
* Corequisite(s): DMT 241L
Provides theory on maintenance and repair of heavy duty chassis systems. Covers air brake systems, ABS systems, suspension systems, steering geometry, front end and tandem alignment, and frame maintenance. Emphasizes Department of Transportation highway safety requirements, and preventative maintenance. Software fee of $10 applies. Lab access fee of $15 for computers applies.

DMT 241L Chassis Lab 2:0:6 Fall, Spring
* Corequisite(s): DMT 2410
Covers troubleshooting and repair skills for heavy and medium duty trucks for air brake systems and ABS brake systems. Discusses alignment fundamentals. Uses hands on exercises to develop these skills. Focuses on proper maintenance and adjustment to foundation brakes and wheel ends. Requires performance tasks on various suspension designs and frame maintenance. Tool room fee of $19 for equipment applies. Course Lab fee of $22 for materials applies.

DMT 2420 Power Train Theory 4:4:0 Fall, Spring
* Corequisite(s): DMT 242L
Provides theory in maintenance and repair of heavy duty power trains systems. Teaches clutches, single and multiple counter shaft transmission, computer controlled transmissions, drive line geometry, differentials and Department of Transportation safety requirements. Emphasizes troubleshooting, highway safety, and preventative maintenance. Software fee of $10 applies. Lab access fee of $15 for computers applies.
Course Descriptions

DMT 242L
Power Train Lab
2:0:6  Fall, Spring
* Corequisite(s): DMT 2420
Provides hands-on experience in maintenance and repair of heavy duty power train systems. Applies tasks for clutches, single and multiple counter shaft transmission, computer controlled transmissions, drive line geometry, differentials and DOT safety requirements. Emphasizes troubleshooting, highway safety, and preventative maintenance. Tool room fee of $19 for equipment applies. Course Lab fee of $22 for materials applies.

DMT 2530
Electronic Engine Management
2:2:0  Fall, Spring
* Prerequisite(s): DMT 1510, DMT 151L, DMT 1520, and DMT 152L
* Corequisite(s): DMT 253L, Recommended
Covers electronic fuel systems: parts, component ID, usage and operation. Includes instruction for electronic governors, set up, operation and diagnosis. Analyses advanced electronic fuel injectors and injection systems. Includes examination of sensor types, function and testing. Teaches the operation and component identification of current emission equipment as well as the present EPA emission standards.

DMT 253L
Electronic Engine Management Lab
1:0:3  Fall, Spring
* Prerequisite(s): DMT 1510, DMT 151L, DMT 1520, and DMT 152L
* Corequisite(s): DMT 2530
Covers the identification, location and function of all electronically controlled fuel system components, including sensors, governors, injectors, pumps, valving, and conductors. Explains the usage of computer based diagnostic equipment for troubleshooting and electronic engine management. Covers the identification, location and function of all emission related components. Focuses on the proper maintenance and service of these systems.

DMT 281R
Cooperative Work Experience
1 to 8:1 to 8:0  Fall, Spring
* Corequisite(s): DMT 285R
Designed for Diesel Mechanics Technology majors. Provides paid, on-the-job work experience in the student’s major. Work experience, the correlated class, and enrollment are coordinated by the Cooperative Coordinator. Includes student, employer, and coordinator evaluations, on-site work visits, written assignments, and oral presentations. Provides experience in writing and completing individualized work objectives that improve present work performance. May be repeated for a maximum of 16 credits toward graduation. May be graded credit/no credit.

DMT 285R
Cooperative Correlated Class
1:1:0  Fall, Spring
* Corequisite(s): DMT 281R
Designed for Diesel Mechanics Technology majors. Identifies on-the-job problems through in-class discussion and study. Includes the study of identifying and maximizing service opportunities. Students register for this class with approval of the Cooperative Coordinator. Includes lecture, guest speakers, video tapes, role playing, case analysis, oral presentations, and written assignments. Completers should be better able to perform in their field of work or study.

DMT 291R
Special Projects
1 to 5:0:3 to 15  Fall, Spring
* Prerequisite(s): Advisor and Instructor Approval
For students majoring in diesel technology. Involves special projects. Allows independent projects that are designed to enhance beginning or advanced abilities. Repeatable for as many times as desired.

DMT 298R
Technical Workshop
1 to 4:0 to 4:0 to 12  On Sufficient Demand
For Diesel Technology students and other interested community members. Tailored to a specific topic, product, component, or vehicle related to the diesel service industry. Its purpose is to update technician training by addressing changes in products or equipment. Topics will vary. May be presented by an OEM, a dealer representative, or faculty member. Repeatable.

DMT 299R
VICA
1:1:0  Fall, Spring
* Prerequisite(s): EART 1130
Designed for Diesel Mechanics Technology majors. Supports and facilitates the goals and objectives of Vocational Industrial Clubs of America (VICA). VICA is a pre-professional student organization that develops social awareness, civic, recreational, and social activities. Students may participate in local, state, and national contests.

EART 1050
AC Electrical Math
2:2:0  Fall, Spring, Summer
* Prerequisite(s): EART 1050
Utilizes algebraic formulas and methods to solve electrical problems related to AC electrical systems. Calculates voltage, current, resistance, reactance, power, and efficiency for AC circuits. Teaches circuit analysis techniques such as superposition, source transformations, Thévenin’s theorem, mesh and nodal analysis. Introduces wire sizing and resistance calculations pertaining to the National Electrical Code. Software fee of $20 applies.

EART 1060
AC Electrical Theory
4:4:0  Fall, Spring
* Prerequisite(s): EART 1180
Reviews basic DC and AC theory involving voltage, current, resistance, reactance, batteries, magnetism, power and the use of digital meters. Introduces relay logic, logic gates, electrical wiring, safety, and troubleshooting techniques. Studies resistors, inductors, and capacitors. Includes basic Digital Fundamentals of numbering systems and Boolean algebra. Software fee of $20 applies. Lab access fee of $45 for computers applies.

EART 1180
Applied Electrical Lab
4:0:12  Fall, Spring
* Corequisite(s): EART 1130
* Prerequisite(s) or Corequisite(s): EART 1050, EART 1060
Emphasizes lab experiences in basic DC/AC theory such as voltage, current, resistance, batteries, magnetism, wire sizing, splicing, soldering, conduit bending, and troubleshooting. Applies Ohm’s Law to practical DC and AC circuits. Provides hands on training in capacitors, inductors, resistors, and RLC circuits. Includes safety procedures, basic electrical tools, and electrical schematics and symbols. Introduces industrial and commercial, wiring techniques. Applies relays, ladder diagrams, logic gates, and switches to low voltage controls and electrical systems. Software fee of $20 applies. Lab access fee of $45 for computers applies. Course lab fee of $25 for materials applies.

EART 1250
Industrial Electrical Code
2:2:0  Fall, Spring
* Prerequisite(s): EART 1050, EART 1060, or departmental approval
Covers pertinent topics within the National Electrical Code related to commercial and industrial environments. Teaches code related to, electrical plans, specifications, wiring and installation methods, feeder load calculations, motor installation, motor controllers, panelboards, hazardous locations, protective devices, and grounding for commercial, and industrial applications. Software fee of $18 applies. Lab access fee of $45 for computers applies.
EART 1260 Logic 2:1:3 Fall, Spring
* Prerequisite(s): EART 1130, EART 1050, and EART 1180; or departmental approval

For students who desire a basic understanding of Digital Logic systems. Covers the basic logic levels, the 1's and 2's complement. Studies binary, decimal, octal, and hexadecimal numbers. Includes problems using Boolean Algebra, and DeMorgan's theorems. Teaches how to minimize combinational gates and troubleshoot logic circuits. Includes lecture, demonstrations, and lab work emphasizing hands-on lab experiments using logic gate circuits. Software fee of $18 applies. Lab access fee of $45 for computers applies.

EART 1280 Electric Motor Control 4:4:0 Fall, Spring
* Prerequisite(s): EART 1050, EART 1060, EART 1130, and EART 1180; or departmental approval
* Prerequisite(s) or Corequisite(s): EART 1250, EART 1285

Covers installation, troubleshooting, preventive maintenance, and theory on DC/AC motors, generators, and associated industrial control circuitry. Introduces ladder logic, controls, sensors, motor starters, overloads, and electronic devices used to control and protected DC/AC Machines. Describes three phase systems, transformers, and delta-wye connections. Introduces AC variable speed drives. Supports hands-on labs and projects in EART 1285. Software fee of $20 applies. Lab access fee of $45 for computers applies.

EART 1285 Electric Motor Control Lab 2:0:6 Fall, Spring
* Prerequisite(s): EART 1050, EART 1060, EART 1130, EART 1180
* Prerequisite(s) or Corequisite(s): EART 1280, EART 1250

Covers the proper use of tools and test equipment needed to maintain motors and their controllers. Emphasizes the use of schematics, line diagrams, ladder logic, and wiring diagrams. Covers DC/AC single phase, and three phase motors. Integrates logic design, motor protection, and wiring of motor control centers. Includes the workings of single phase and three phase transformers including delta and wye configurations. Course lab fee of $14 for supplies/materials applies. Lab access fee of $45 for computers applies. Software fee of $20 applies.

EART 2110 Industrial Electronics I 4:4:0 Fall, Spring
* Prerequisite(s): EART 1280, and EART 1285; or departmental approval
* Prerequisite(s) or Corequisite(s): EART 2115, EART 2250, EART 2255

Introduces semiconductor theory. Covers the concepts of PN junctions, transistors, voltage amplifiers, operational amplifiers, diodes, power electronics, and other special semiconductor and industrial electronics. Includes lecture and demonstrations. Course lab fee of $20 for materials applies. Lab access fee of $45 for computers applies.

EART 2115 Industrial Electronics I Lab 2:0:0 Fall, Spring
* Prerequisite(s): EART 1280, EART 1285, or departmental approval
* Prerequisite(s) or Corequisite(s): EART 2110, EART 2250, EART 2255

Introduces semiconductor theory. Covers the concepts of PN junctions, transistors, operational amplifiers, voltage amplifiers, diodes, and other special semiconductor and industrial electronic components. Includes practical hands-on labs. Software fee of $20 applies. Lab access fee of $45 for computers applies.

EART 2150 Industrial Hydraulics and Pneumatics 2:2:0 Fall, Spring
* Prerequisite(s): EART 2110, EART 2115, EART 2250, EART 2255 or departmental approval
* Prerequisite(s) or Corequisite(s): EART 2160, EART 2165, EART 2270, EART 2275

Covers the fundamentals of hydraulic and pneumatic components and systems used in industrial applications. Studies pumps, motors, directional and flow control valves, cylinders, transmission, and fluids. Emphasizes maintenance, safety, and environmental problems. Examines troubleshooting techniques and blueprint/print reading. Course Lab fee of $15 for supplies/materials applies. Lab access fee of $45 computers applies.

EART 2155 Industrial Hydraulics and Pneumatics Lab 1:0:3 Fall, Spring
* Prerequisite(s): EART 2250, EART 2255, EART 2110, EART 2165, EART 2270, EART 2275

Covers the fundamentals of hydraulic and pneumatic components and systems used in industrial applications. Studies pumps, motors, directional and flow control valves, cylinders, transmission, and fluids. Emphasizes maintenance, safety, and environmental problems. Examines troubleshooting techniques and blueprint/print reading. Software fee of $20 applies. Lab access fee of $45 for computers applies.

EART 2160 Industrial Electronics II 2:2:0 Fall, Spring
* Prerequisite(s): EART 2110, EART 2115, EART 2250, EART 2255 or departmental approval
* Prerequisite(s) or Corequisite(s): EART 2165, EART 2270, EART 2275, EART 2280, EART 2285

Explains the theory and operation of industrial solid state thyristor devices, power circuits, integrated circuits, and DC/AC electronic motor controls. Covers basic electronic components found in variable speed drives. Introduces stepper and servo motor theory. Includes lecture and demonstration. Course Lab fee of $11 for materials applies. Lab access fee of $45 for computers applies.

EART 2165 Industrial Electronics II Lab 1:0:3 Fall, Spring
* Prerequisite(s): EART 2110, EART 2115, EART 2250, EART 2255, or departmental approval
* Prerequisite(s) or Corequisite(s): EART 2160, EART 2270, EART 2275, EART 2280, EART 2285

Teaches the theory and operation of industrial solid state thyristor devices, power circuits, integrated circuits, and DC/AC electronic motor controls. Emphasizes practical application of electronics found in variable speed drives. Implements stepper and servo motors. Includes hands-on labs. Software fee of $20 applies. Lab access fee of $45 for computers applies.

EART 2250 Industrial Programmable Logic Controllers--PLCs 4:4:0 Fall, Spring
* Prerequisite(s): EART 1280, EART 1285 or departmental approval
* Prerequisite(s) or Corequisite(s): EART 2110, EART 2115, EART 2255

Covers the theory, programming, and industrial control system applications of small and medium sized programmable logic controllers (PLCs). Studies basic maintenance, operation, troubleshooting, and programming instructions / techniques for industrial PLCs. Concentrates on interfacing analog and digital I/O to the PLC. Covers human machine interface (HMI) configuration, programming and PLC integration. Includes lecture, demonstration, print reading, and industry examples. Course lab fee of $90 for equipment applies. Lab access fee of $45 for computers applies. Canvas Course Mats $78/McGraw applies.

EART 2255 Industrial Programmable Logic Controllers--PLCs Lab 2:0:6 Fall, Spring
* Prerequisite(s): EART 1280, EART 1285
* Prerequisite(s) or Corequisite(s): EART 2250, EART 2255, EART 2110, EART 2115

Covers the theory, programming, and industrial control system applications of small and medium sized programmable logic controllers (PLCs). Studies basic maintenance, programming, and troubleshooting techniques for industrial PLCs. Teaches human-machine interface (HMI) configuration, programming, and PLC integration. Includes PLC communications via serial and industrial Ethernet. Includes hands-on labs and projects. Software fee of $20 applies. Lab access fee of $45 for computers applies.

EART 2260 Advanced Logic 3:2:3 On Sufficient Demand
* Prerequisite(s): EART 1260 or departmental approval
* Corequisite(s): EART 2160

Covers theory and industrial applications of Comparators, Decoders, Encoders, Multiplexers, Demultiplexers, Latches (SR and D), Flip Flops (SR, D, and JK), One-shots, Timers, Counters, and Shift Registers. Includes lecture, demonstrations, and lab projects with hands-on experience. Emphasizes implementation and troubleshooting of logic circuits. Completers should be able to work in industry in related work at entry level positions with safety and environmental awareness. Course Lab fee of $15 for materials applies.
EART 2275 Industrial Programmable Automation Controllers—PACs Lab

Covers theory related to PAC integration of devices to variable speed drives, analog / digital sensors, and encoders. Includes advanced Human Machine Interface (HMI) programming concepts and introduces basic concepts of programmable safety relays. Includes lecture and demonstration. Course lab fee of $90 for equipment applies. Lab access fee of $45 for computers applies.

EART 2280 Process Control Instrumentation

Covers basic theory on measuring process variables such as temperature, pressure, level, and flow. Discusses open loop and closed loop control including PID loops. Introduces instrumentation maintenance, installation, and device specifications. Discusses basic calibrations, safety instruments and standards, classified areas, and intrinsically safe systems. Presents competency in process and instrumentation diagrams (P&ID). Covers HART and modbus communications in industrial instrumentation.

EART 2281R Cooperative Work Experience

Provides paid on-the-job work experience that relates to Electrical Automation and Robotics Technology (EART) in the student’s major. Work experience, the related class, and enrollment are coordinated by the EART Cooperative Coordinator. Completers must individually set and complete goals/learning objectives based on the job description from their work assignment. May be graded credit/no credit.

EART 2285 Process Control Instrumentation Lab

Implements process control instrumentation on class projects. Integrates open loop and closed loop control including PID loops with industrial instrumentation and a PLC. Explores basic calibrations, safety instruments and standards, classified areas, and intrinsically safe systems. Implements process and instrumentation diagrams (P&ID) on industrial systems. Integrates HART and modbus communications into applicable industrial projects. Covers programming and troubleshooting of industrial instruments in a hands-on environment. Computer Lab fee of $90 applies. Lab access fee of $45 for computers applies.

ECE 1000 Introduction to Electrical and Computer Engineering

Introduces engineering-problem-solving techniques, design processes, modeling and analysis of simple electrical and computer circuits using MATLAB and LabVIEW software packages. Emphasizes engineering design procedures by incorporating group projects and presentations. Lab access fee of $45 for computers applies.

ECE 1020 Computer Engineering Problem Solving with MATLAB and LabVIEW

Introduces the field of Computer Engineering through programming in the MATLAB and LabVIEW languages. Teaches the design of various components of a prototype communication system while learning about the following aspects of MATLAB: scripts and function files, math functions, commands for array construction and manipulation, string expressions, logic operators, control flow, and graphics. No prior knowledge of computer engineering is assumed. Software fee of $10 applies. Lab access fee of $45 for computers applies.

ECE 2210 Fundamentals of Electric Circuit Analysis

Studies fundamental electric circuit analysis techniques. Develops analysis techniques using Kirchoff's laws, Thévenin and Norton equivalents, superposition, and phasors. Covers transient and steady-state time-domain analysis, and frequency analysis. Lab access fee of $45 for computers applies.

ECE 2215 Fundamentals of Electric Circuit Analysis Lab

ECE 2220 Circuit Theory

Develops linear circuit theory and its application in the analysis and design of RLC active circuits. Covers DC, AC, and transient analysis utilizing node and mesh analysis. Introduces the use of CAD tools. Integrates a laboratory. Lab access fee of $45 for computers applies.

ECE 2250 Circuit Theory Lab

ECE 2255 Digital Design I

Studies the design and application of combinational and sequential logic circuits with discrete and programmable logic devices. Lab access fee of $45 for computers applies.
ECE 2705 Digital Design I Lab
1:0:2 Fall, Spring
* Prerequisite(s): MATH 1050 or MATH 1055
* Corequisite(s): ECE 2700

Designed to accompany ECE 2700. Covers design of digital systems with discrete and programmable logic devices. Includes the use of CAD tools for system design and verification. Software fee of $10 applies. Lab access fee of $45 for computers applies.

ECE 2760 Introduction to Semiconductor Theory and Nanotechnology
3:3:0 Fall, Spring
* Prerequisite(s): MATH 1060 or higher (MATH 1090 not included)

Introduces the theory of semiconductor materials and devices. Provides an understanding of Nano/ microfabrication technology and the physics of semiconductor devices. Covers design principles for the fabrication of newly developed devices and applications. Lab access fee of $45 for computers applies.

ECE 3250 Energy Conversion
3:3:0 Spring
* Prerequisite(s): ECE 2250, University Advanced Standing, and (Formal Acceptance into the Electrical Engineering Program, or Departmental Approval)

Presents fundamental concepts of energy conversion including torque and power in singly/doubly excited electromagnetic systems, single and three-phase transformers, single and three-phase induction motors including speed control, three-phase synchronous generators and DC machines. Lab access fee of $45 for computers applies.

ECE 3350 Control Systems
3:3:0 Spring
* Prerequisite(s): ECE 2250, University Advanced Standing, and (Formal Acceptance into the Electrical Engineering Program, or Departmental Approval)

Introduces the theory and practice of control systems engineering. Covers modeling in the frequency and time domains, analog and discrete transfer function models, reduction of multiple subsystems, system response specifications, control system characteristics, root locus analysis and design, frequency response analysis and design. Emphasizes computer-aided analysis. Lab access fee of $45 for computers applies.

ECE 3450 Electromagnetics and Transmission Lines
3:3:0 Spring
* Prerequisite(s): PHYS 2220, ECE 2250, University Advanced Standing, and (Formal Acceptance into the Electrical Engineering Program, or Departmental Approval)

Introduces the fundamentals of electromagnetic field theory and application: vector analysis, electric and magnetic fields, potential theory, dielectric and magnetic material properties, conductance, capacitance, and inductance, Maxwell’s equations and circuit concepts. Explains transmission lines as a bridge to understanding electromagnetic field theory. Covers basic principles of radiation and propagation in waveguides and antennas. Lab access fee of $45 for computers applies.

ECE 3710 Applied Probability and Statistics for Engineers and Scientists
3:3:0 Fall, Spring, Summer
* Prerequisite(s): MATH 1210 and University Advanced Standing

Studies probability and statistical theory with an emphasis on engineering and computer science applications. Covers descriptive statistics, discrete and continuous random variables, probability distributions, hypothesis testing, expectation, estimation, ANOVA testing, and regression analysis. Includes computer analysis of data and simulation. Software fee of $10 applies. Lab access fee of $45 for computers applies.

ECE 3730 Embedded Systems I
3:3:0 Fall, Spring
* Prerequisite(s): ECE 2700, University Advanced Standing, and (Formal Acceptance into the Electrical or Computer Engineering Program, or Departmental Approval)

Introduces the theory of electronic devices and systems to microcontroller by using hardware and software examples and students’ projects. Software fee of $10 applies. Lab access fee of $45 for computers applies.

ECE 3770 Communication Systems and Circuits
3:3:0 Fall, Spring
* Prerequisite(s): ECE 3750, University Advanced Standing, and (Formal Acceptance into the Electrical Engineering Program, or Departmental Approval)

Covers the design and verification of digital systems. Emphasizes hierarchical design principles and the use of programmable logic devices (PLDs). Utilizes modern CAD tools and design languages (VERILOG). Lab access fee of $45 for computers applies.

ECE 3780 Communication Systems and Circuits Lab
1:0:2 Fall, Spring
* Prerequisite(s): ECE 3770 and University Advanced Standing
* Corequisite(s): ECE 3780

Introduces the fundamentals of electronic communication systems and circuits. Covers pulse code modulation, line coding, information rate, equalization, amplitude modulation, angle modulation, and noise in communication systems. Lab access fee of $45 for computers applies.

ECE 3785 Communication Systems and Circuits Lab
1:0:3 Fall, Spring
* Prerequisite(s): ECE 3770 and University Advanced Standing
* Corequisite(s): ECE 3780

Covers hands on experiments related to course work, in the area of Communication Systems and Circuits. Includes digital and analog modulation for the base band and band pass communications. Provides appropriate wireless communication techniques for modern circuits and applications using mini projects. Lab access fee of $45 for computers applies.

ECE 4250 Power Systems Engineering
3:3:0 On Sufficient Demand
* Prerequisite(s): ECE 3250, (Formal Acceptance into the Electrical Engineering Program, or Departmental Approval), and University Advanced Standing

Introduces power system analysis and design with the aid of a personal computer. Emphasizes AC power generation, distribution and usage. Covers single-phase and 3-phase power, motors, generators, power distribution and the grid, generation plants, smart grids, and power flow control. Lab access fee of $45 for computers applies.
Course Descriptions

ECE 4700  
Computer Architecture for Engineering Applications  
3:3:0  Fall, Spring  
* Prerequisite(s): ECE 3740 and University Advanced Standing  
Uses register transfer languages and simulation tools to describe and simulate computer operation; central processing unit organization, microprogramming, input/output, pipelining, virtual memory concepts, VLIW, superscalar out of order, ILP, and memory system architectures. Lab access fee of $45 for computers applies.

ECE 4730  
Embedded Systems II  
3:3:0  Spring  
* Prerequisite(s): ECE 3730 and University Advanced Standing  
Presents the design of hardware and software required for embedded, real-time systems. Covers types of real-time systems, fuzzy logic, sensors, real-time operating systems, C programming skills, and wireless sensor networks. Lab access fee of $45 for computers applies.

ECE 4740  
Queuing Theory  
3:3:0  Fall, Spring  
* Prerequisite(s): STAT 2040, ECE 3750, and University Advanced Standing  
Includes computer systems network modeling using stochastic processes; queuing theory models, performance analysis, resource allocation, large-system response parameters. Software fee of $10 applies. Lab access fee of $45 for computers applies.

ECE 4750  
Digital Signal Processing  
3:3:0  Fall, Spring  
* Prerequisite(s): ECE 3770, ECE 3710, and University Advanced Standing  
Introduces the theory of digital signal processing and its application to practical problems. Covers z-transforms, discrete-time Fourier transforms, FIR (Finite Impulse Response) and IIR (Infinite Impulse Response) digital filter design. Software fee of $10 applies. Lab access fee of $45 for computers applies.

ECE 4755  
Digital Signal Processing Lab  
1:0:3  Spring  
* Prerequisite(s): ECE 3770 and University Advanced Standing  
Performs software and hardware experiments illustrating the basic principles and techniques of digital signal processing. Teaches programming of real-time signal processing algorithms on a concrete DSP chip, and Accelerate the DSP code on the GPU. Lab access fee of $45 for computers applies.

ECE 4760  
VLSI Design  
3:3:0  Fall  
* Prerequisite(s): ECE 3760 and University Advanced Standing  
Focuses on theories and techniques of VLSI design on CMOS technology. Studies the fundamental concepts and structures of designing digital VLSI systems, including CMOS devices and circuits, standard CMOS fabrication processes, CMOS design rules, static and dynamic logic structures, interconnect analysis, CMOS chip layout, simulation and testing, low power techniques, design tools and methodologies, VLSI architecture. Software fee of $10 applies. Lab access fee of $45 for computers applies.

ECE 4765  
VLSI Design Laboratory  
1:0:2  Fall  
* Prerequisite(s): ECE 3765 and University Advanced Standing  
Designed to accompany ECE 4760. Teaches students the complete process of building a ready-to-fabricate CMOS integrated circuit using a commercial design software. Lab experiments include the layout design of CMOS transistors, gate level design, design using VHDL, CHIP design and pin configuration, and simulation of the circuit for slack time and power consumption. Software fee of $10 applies. Lab access fee of $45 for computers applies.

ECE 4770  
Artificial Neural Networks  
3:3:0  Fall  
* Prerequisite(s): MATH 1210 and University Advanced Standing  
Introduces a range of topics in the field of artificial neural networks: modeling of brains, applicable algorithms, and related applications. Develops the theory of a number of neural network models such as Perceptron, Multilayer Perceptron, and Hopfield networks. Emphasizes algorithms for implementing simple artificial neural networks and their applications. Software fee of $10 applies. Lab access fee of $45 for computers applies.

ECE 4780  
Wireless and Mobile Communications  
3:3:0  Spring  
* Prerequisite(s): MATH 1210, ECE 2250, and University Advanced Standing  
Covers the fundamentals of analog and digital wireless communications. Includes baseband and bandpass, analog and digital signaling techniques along with appropriate mathematical background in Fourier transforms, probability and random variables. Introduces both software and hardware designs. Lab access fee of $45 for computers applies.

ECE 4800  
Computer Engineering Senior Design Project  
3:3:0  Fall, Spring  
* Prerequisite(s): ECE 3740 and University Advanced Standing  
Serves as a project-oriented capstone course for computer engineering majors. Emphasizes major hardware and software design. Includes identification and completion of a suitable design project to be mutually selected by the faculty supervisor and student. Requires weekly written and oral presentations as well as a final written project report and an oral presentation. Requires completion of a program level assessment test. Software fee of $10 applies. Course fee of $27 for materials/testing applies. Lab access fee of $45 for computers applies.

ECE 481R  
Electrical and Computer Engineering Internship  
1 to 3:1 to 3:0  Fall, Spring, Summer  
* Prerequisite(s): Admission to Computer Engineering program or Electrical Engineering program, Instructor Approval, and University Advanced Standing  
Provides an opportunity to gain career-related experience while earning academic credit. Credit is determined by the number of hours a student works during the semester. May be Graded Credit/No Credit. May be repeated for a maximum of three credits toward graduation.

ECE 4900  
Electrical and Computer Engineering Capstone I  
3:3:0  Fall  
* Prerequisite(s):ECE 3730 and University Advanced Standing  
Focuses on team-oriented design projects. Incorporates engineering standards and realistic constraints including economic, environmental, sustainability, manufacturability, ethical, health and safety, social, and political. Emulates the problems encountered by engineers working in commercial, industrial, and governmental entities. Capstone I and II must be taken by engineers working in commercial, industrial, and governmental entities. Serves as a project-oriented capstone course for computer engineering majors. Emphasizes major hardware and software design. Includes identification and completion of a suitable design project to be mutually selected by the faculty supervisor and student. Requires weekly written and oral presentations as well as a final written project report and an oral presentation. Requires completion of a program level assessment test. Software fee of $10 applies. Course fee of $27 for materials/testing applies. Lab access fee of $45 for computers applies.

ECE 490R  
Advanced Current Topics in Computer Engineering  
1 to 3:1 to 3:0  On Sufficient Demand  
* Prerequisite(s): Department Approval and University Advanced Standing  
Provides exposure to emerging technologies and topics of current interest in computer engineering. Varies each semester depending upon the state of technology. May be repeated for a maximum of 6 credits toward graduation without prior written department approval. Lab access fee of $45 for computers applies.

ECE 491R  
Independent Study  
1 to 3:0 to 9  On Sufficient Demand  
* Prerequisite(s): Prior written Department Chair approval and University Advanced Standing  
Offers independent study as directed by a faculty advisor in reading, individual projects, etc. Varies each semester depending upon the state of technology. A maximum of 3 credit hours may be counted towards graduation without prior written Department approval.
ECE 4950 Electrical and Computer Engineering Capstone II 3:3:0 Spring

* Prerequisite(s): ECE 4900 and University Advanced Standing
Serves as a second semester of the two-semester design experience from conception to modeling or prototype. Focuses on team-oriented design projects. Incorporates engineering standards and realistic constraints including economic, environmental, sustainability, manufacturability, ethical, health and safety, social, and political. Emulates the problems encountered by engineers working in commercial, industrial, and governmental entities. Capstone I and II must be taken in consecutive semesters. Lab access fee of $45 for computers applies.

Econo Child and Family Studies (ECFS)

ECFS 208R Directed Readings 1 to 4:0:3 to 12 On Sufficient Demand
For second-year ECFS students. Includes readings with analysis and discussion of selected topics in child education and family relationships. Requires approval of the department for registration. May be taken for a maximum of four credits.

ECFS 2900 Independent Study 1 to 5:1:0 to 12 Fall, Spring, Summer
* Prerequisite(s): Approval of ECFS Department
Provides independent study through faculty-directed individual projects related to working with children and families. Possible areas of study include curriculum, behavior management, program administration, family studies, and case studies in applied theory.

ECFS 3320 Gender Perspectives in Education 3:3:0 On Sufficient Demand
* Prerequisite(s): University Advanced Standing
For educators, counselors, student teachers, those wanting to recertify, and other interested students. Explores gender issues that may affect the educational experience of girls and boys. Examines history, biases, myths, and stereotypes. Develops sensitivity to issues of gender through discovery learning. Assists participants to recognize cultural and individual issues as they pertain to gender.

ECFS 4720 Characteristics and Identification of Gifted Students 3:3:0 On Sufficient Demand
* Prerequisite(s): Permission of instructor and University Advanced Standing
Designed for senior teacher education students and in-service teachers. Reviews different conceptualizations of intelligence and giftedness and practices and instruments used for identification. Describes characteristics and cognitive, social and developmental needs of gifted students.

ECFS 4730 Teaching Gifted Students 3:3:0 On Sufficient Demand
* Prerequisite(s): ECFS 4720, Instructor Permission, and University Advanced Standing
For senior education students and in-service teachers in local schools. Describes the various settings in which gifted students are served. Reviews instructional strategies and assessment appropriate to teaching gifted students, and strategies for dealing with parents.

ECFS 492R Special Topics in Gifted Education 3:3:0 On Sufficient Demand
* Prerequisite(s): (EDEL 3000 or EDSC 3000), Instructor Permission, and University Advanced Standing
Designed for senior education students and local in-service teachers. Includes topics, such as underserved populations of gifted students, contemporary issues in gifted education, creativity, etc. May be repeated 3 times for credit.

ECFS 494R Special Topics in Educational Psychology 3:3:0 On Sufficient Demand
* Prerequisite(s): (EDEL 3000 or EDSC 3000), Instructor Permission, and University Advanced Standing
Explores topics in educational psychology as it relates to classrooms. Includes topics, such as motivation to learn and succeed, classroom application of learning and cognition, role of emotion in learning, etc. Varies each semester. May be repeated 3 times for credit.

Economics (ECON)

ECON 1010 Economics as a Social Science 3:3:0 Fall, Spring
An introductory course which studies the operation of a mixed market system, including production, domestic and global trade, and labor-management economics. Includes business cycles and monetary and fiscal policies designed to modify those cycles. Canvas Course Mats $78/McGraw applies.

ECON 2010 Microeconomics 3:3:0 Fall, Spring, Summer
* Prerequisite(s): MATH 1050, MATH 1055, MATH 1090 or higher or appropriate test score
Designed for business management transfer students and as elective credit for other business students desiring economic decision-making skills. Covers intermediate microeconomics. Uses lecture, class discussion, videos, student presentations, and computer simulation. Completers should be ready to take university upper-level economics courses and to make upper-level management decisions. May be delivered online. Lab access fee of $30 for computers applies. Canvas Course Mats $78/McGraw applies.

ECON 2020 Macroeconomics 3:3:0 Fall, Spring, Summer
* Prerequisite(s): MATH 1050, MATH 1055, MATH 1090 or higher or appropriate test score
Provides the basic understanding of macroeconomic concepts such as Gross Domestic Product (GDP), inflation, unemployment, interest rates, fiscal and monetary policy, among others. Offers business students the needed framework to comprehend the role of macroeconomic policies in the United States. Uses lecture, class discussions, group work, student presentations, and videos for engaged learning. Preps business students with the necessary prerequisite knowledge to successfully gain admittance to upper-division university economics courses. May be delivered online. Lab access fee of $30 for computers applies. Canvas Course Mats $72/McGraw applies.

ECON 3010 Intermediate Microeconomics 3:3:0 Fall, Spring
* Prerequisite(s): MGMT 3345 and (MATH 1100 or MGMT 2340 with a B or higher in each), Matriculation into the Woodbury School of Business, and University Advanced Standing
Covers intermediate microeconomic theory for economics and finance majors planning on extending their economics training into econometrics, mathematical economics and other related courses. Reviews microeconomic theory and models to develop an understanding of, and ability to use, modern microeconomic theory, measurement, and policy.

ECON 3020 Managerial Economics 3:3:0 Fall, Spring
* Prerequisite(s): Matriculation into the Woodbury School of Business and University Advanced Standing
Extends the discussion of economic theory of markets, demand and supply, elasticity, and marginal analysis process to make more effective decisions. Emphasizes an applied approach using basic theoretical concepts. Discusses the concepts of production theory and cost analysis in both the short and long run. Describes how to apply economic decision making in a variety of competitive markets including perfect competition, monopoly, monopolistic competition and oligopoly. Reviews elements of risk and uncertainty in a microeconomic framework. Canvas Course Mats $72/McGraw applies.

ECON 3030 Intermediate Macroeconomics 3:3:0 Spring
* Prerequisite(s): Matriculation into the Woodbury School of Business and University Advanced Standing
Extends discussion of models of income determination, economic growth theory, analysis of fiscal and monetary policy theory, international trade issues, and alternative views related to the impact of macro theory in the US and world economies. Prepares economics majors for other advanced economic theory and policy courses.
Course Descriptions

ECON 3040 Environmental Economics 3:3:0 On Sufficient Demand
* Prerequisite(s): Instructor Approval and University Advanced Standing
Introduces economic issues of ecological and environmental theory and policy. Identifies the economic tools appropriate for the analysis of ecological and environmental challenges for an inter-disciplinary group of engineering, science, social science, and natural resources management professionals. Presents the microeconomic concepts useful for reviewing these types of issues. Evaluates public policy issues related to environmental, ecological, and natural resource challenges.

ECON 305G International Economics 3:3:0 Spring
* Prerequisite(s): Matriculation into the Woodbury School of Business and University Advanced Standing
Covers theoretical and practical concepts of international trade, policy, and finance in a global economy. Reviews both micro topics such as comparative advantage and trade policy as well as macro issues such as balance of payments, exchange rates, and global capital markets. Includes coverage of cultural and intercultural relationships that exist within an economic context.

ECON 3060 Money and Banking 3:3:0 Fall, Spring, Summer
* Prerequisite(s): Matriculation into any Woodbury School of Business program and University Advanced Standing
Studies the US financial system including primary institutions and markets. Includes analysis of the Federal Reserve System, American and International financial markets. Reviews the impact of monetary policy on financial institutions and financial intermediation. Presents the term structure of interest rates, money, capital, and mortgage markets, and management of financial institutions and insurance companies.

ECON 3370 Economic Modeling and Quantitative Analysis 3:3:0 Fall
* Prerequisite(s): Matriculation into Woodbury School of Business, MGMT 3345, and University Advanced Standing
Discusses economic modeling, quantitative methods and applications in economics. Covers intermediate mathematical tools required for economic and financial analysis. Prerequisite course for econometrics.

ECON 3810 Labor Economics 3:3:0 On Sufficient Demand
* Prerequisite(s): Matriculation into the Woodbury School of Business and University Advanced Standing
Provides an analysis of the theory and practice of labor markets. Defines the factors that influence the demand and supply of labor in a modern economy. Develops the concepts for a theory of human capital. Reviews factors such as wage determination, occupational differences, problems of gender, labor turnover, discrimination, impacts of education and training, impacts of labor unions, immigration, changes in technology, and other related issues. Lab access fee of $30 for computers applies.

ECON 3820 Economic Development 3:3:0 Fall
* Prerequisite(s): Matriculation into the Woodbury School of Business and University Advanced Standing
Describes and evaluates economic models of development in third world and emerging economies. Includes a review of theories of economic growth, the importance of creating new economic institutions, the importance of education and human capital development, and the importance of creating stable political and social cultures in the development of modern economic systems. Lab access fee of $30 for computers applies.

ECON 3830 History of Economic Thought 3:3:0 Fall
* Prerequisite(s): Matriculation into the Woodbury School of Business and University Advanced Standing
Traces the evolution of formal economic theory primarily beginning with Adam Smith, the first classical economic theorist. Studies other classical writers including Ricardo and Malthus as well as Marx's criticisms. Studies neoclassical analysis through Marshall and the critiques of the Austrian school. Reviews the modern theorists including Keynes and the development of macroeconomics, the development of empirical and mathematical economic theories, monetarism, and other post-Keynesian analysis. Lab access fee of $30 for computers applies.

ECON 4010 Advanced Microeconomics 3:3:0 Spring
* Prerequisite(s): ECON 3010 and University Advanced Standing
Advanced course in microeconomics for economics majors. Addresses the issues related to modern economic theories of imperfect competition, the market of factors of production, cost analysis, the distribution of income, general equilibrium, and welfare economics.

ECON 4020 Advanced Macroeconomics 3:3:0 On Sufficient Demand
* Prerequisite(s): ECON 3030, MGMT 3345, and University Advanced Standing
Is an advanced course in macroeconomics for economics majors. Provides economics graduates an understanding of modern macroeconomic theory including traditional macro issues, models with incomplete nominal adjustment, inflation theory, dynamic inconsistency and recent theories of unemployment.

ECON 4040 Game Theory 3:3:0 On Sufficient Demand
* Prerequisite(s): ECON 4010, ECON 4320, and University Advanced Standing
Designed to give students the skills to assess economic and social issues where strategic interaction is relevant. Teaches students to condition their responses based on the reactions and behavior of other individuals rather than merely in response to outside constraints, which is the usual approach to optimization theory. Provides concepts, tools, and experience to deal with game theory situations.

ECON 4100 Analysis of Financial Institutions and Markets 3:3:0 Fall
* Prerequisite(s): Matriculation into the Woodbury School of Business and University Advanced Standing
Studies money, banking, and financial markets from an economics perspective. Examines the structure of interest rates and their influence in financial markets. Reviews financial instruments, financial intermediaries, banking institutions and the types of assets and liabilities common to those systems. Covers money supply and money demand within the central banking system.

ECON 4150 Public Finance 3:3:0 Spring
* Prerequisite(s): Matriculation into the Woodbury School of Business and University Advanced Standing
Designed as elective credit for Business Management and other bachelor of science degree majors. Develops knowledge, skills, and attitudes required for those employed in and analyzing the public sector. Describes the three levels within the public structure including respective purposes and functions, revenue generation alternatives, budgeting, deficit financing, public choice, income redistribution, public goods, and externalities. Lab access fee of $30 for computers applies. Canvas Course Mats $78/McGraw applies.

ECON 4320 Mathematical Economics 3:3:0 Fall
* Prerequisite(s): ECON 3010, and University Advanced Standing
Discusses advanced concepts in economic modeling, the application of mathematical models in economic analysis, and advanced research methods in economics. Covers advanced mathematical applications in economics and finance for students interested in advanced econometric analysis and model building. Lab access fee of $30 for computers applies.

ECON 4340 Econometrics Applications 3:3:0 Spring
* Prerequisite(s): ECON 3370 and University Advanced Standing
Provides an opportunity for economics students with mathematical and statistical skills to apply those capabilities in real-world applications of the science of econometrics. Examines some of the well-known examples of econometric analysis that formed the foundation of econometrics science. Develops analytical skill by defining data inputs and working through a series of projects of the type students might encounter in future professional experience. Lab access fee of $30 for computers applies.
ECON 4500
US Economic Development and History
3:3:0 Spring
* Prerequisite(s): Matriculation in the Woodbury School of Business, University Advanced Standing
Provides an analysis of the economic development of the United States. Describes the factors that led to the development of colonies in the Americas and the causes of the Revolution and formation of a government. Describes the economic causes for western expansion, transportation development, and the rise of American capitalism. Reviews the shift from agrarian to industrial development, the economic development of big business and big government, the impact of depression, and the economics of world war and peace. Lab access fee of $30 for computers applies.

ECON 494R
Special Topics in Economics
3:3:0 Not Offered
* Prerequisite(s): Departmental approval and University Advanced Standing
Provides short courses, workshops, and special programs in economics and current business and public policy topics. May be repeated for a maximum of 6 credits toward graduation.

ECON 4960
Senior Seminar Current Economic Issues
3:3:0 Fall, Spring
* Prerequisite(s): Department Chair Approval and University Advanced Standing
Provides exposure to emerging topics of current interest in economics. Topics vary each semester. Lab access fee of $30 for computers applies.

ECON 4970
Economic Research Design and Implementation
3:3:0 Not Offered
* Prerequisite(s): Matriculation into the Woodbury School of Business and University Advanced Standing
Defines the scientific approach to managerial decision-making and project management. Describes issues related to problem definition, model development, data collection, model implementation using the data, model validation, results analysis, and using the findings to implement changes to solve problems. Examines both quantitative and qualitative models and methods. Allows students to work on real-world projects through the Utah Community Research Group (Utah CRG) and its research partners.

ECON 6300
Managerial Economics
3:3:0 Spring
* Prerequisite(s): Acceptance in the MBA program
Applies concepts and theories, based on managerial economic to business problems. Analyzes cost theory, pricing, market structures, and forecasting.

ECON 6330
Econometrics
3:3:0 On Sufficient Demand
* Prerequisite(s): Acceptance in the MBA program
Provides graduate level introduction to applied regression analysis; including simple and multivariate regression models; distributed lags; seemingly unrelated regression, and model specification and validation tests.

Edu Early Childhood Education (EDEC)

EDEC 1640
Children's Music and Movement
2:2:0 Spring
Covers historical foundations of music for young children. Explores strategies for teaching music and movement. Explores music appreciation, creative and structured music, and transitions and movement activities for young children. Investigates musical instruments and their use. Provides opportunities to teach music and movement activities to children. Examines music and movement curricula, academic content and learning environments. Course fee of $10 for materials applies.

EDEC 2300
Including Young Diverse Learners
2:2:0 Fall
* Prerequisite(s): PSY 1100; ACT (or equivalent) composite score of 21+, or completion of (ENGL 1010 or ENGH 1005 or higher) with a minimum grade of C-
Introduces the implications of diversity and exceptionality in young children. Examines the impact of diversity in children’s educational settings. Includes basic assessment strategies. Introduces teaching strategies to address children with special needs and/or from diverse populations. Emphasizes inclusive and adaptive strategies for supporting young children with exceptionalities. Covers partnerships, families, and communities. Includes 10 hours of field experiences.

EDEC 2500
Child Development Birth to Eight Years
3:3:0 On Sufficient Demand
* Prerequisite(s): PSY 1100; ACT (or equivalent) composite score of 21+, or (ENGL 1010 or ENGH 1005 or higher) with a minimum grade of C-
Covers developmental theories and milestones of a child's development. Emphasizes growth in all developmental domains. Focuses on supportive parental and care giver behaviors. Addresses the influence of out-of-home care. Examines the role of play when creating supportive environments. Investigates risk factors that impede optimal development. Includes 15 hours of structured observation, assessment, and interactions with young children.

EDEC 2600
Introduction to Early Childhood Education
2:2:0 Fall, Spring
* Prerequisite(s): ACT (or equivalent) composite score of 21+, or (ENGL 1010 or ENGH 1005 or higher) with a minimum grade of C-
Introduces the field of early childhood education. Focuses on the historical, theoretical and philosophical foundations of early childhood education. Emphasizes developmentally appropriate practices, constructivism, and integrated, child-centered curriculum. Covers learning in all domains and content areas. Explores the components that identify quality programs for young children. Addresses ethical and professional teaching practices. Includes 8 hours of classroom observations.

EDEC 2610
Child Guidance
3:3:0 Fall, Spring
* Prerequisite(s): ACT (or equivalent) composite score of 21+, or (ENGL 1010 or ENGH 1005 or higher) with a minimum grade of C-
Focuses on the adult role in fostering the social and emotional development of young children. Emphasizes strategies adults can use to build positive self-concept, appropriate social behaviors, empathy, independence, responsibility and effective communication in children. Addresses the value of play to enhance children’s social development. Introduces strategies to reduce aggressive behaviors. Examines factors that effect resiliency in young children. Includes 20 hours of structured field observations and interactions with young children.

EDEC 2620
Early Childhood Curriculum
3:3:0 Fall
* Prerequisite(s): ACT (or equivalent) composite score of 21+, or (ENGL 1010 or ENGH 1005 or higher) with a minimum grade of C-, EDEC 2600 recommended
Examines the philosophy of Developmentally Appropriate Practice in connection to teaching preschool children, preparing the classroom environment, and planning/implementing instruction. Investigates a variety of curriculum models. Addresses the role of play to support learning in all areas of development. Introduces the principles of intentional teaching. Focuses on creating and teaching child-guided and teacher-guided learning experiences using early childhood standards. Covers integrating content when planning lessons. Includes curriculum mapping to facilitate integration of state core curriculum standards in early childhood classrooms. Includes 20 hours of field experiences in an early childhood classroom. Course fee of $10 for materials applies.

EDEC 2630
Literacy and Literature for Early Childhood
3:3:0 Fall, Spring
* Prerequisite(s): ACT (or equivalent) composite score of 21+, or (ENGL 1010 or ENGH 1005 or higher) with a minimum grade of C-
Introduces practical aspects of fostering literacy development in young children. Focuses on emerging and early literacy in the home, early care, and education settings. Investigates strategies for holistic integration of various literacy processes. Addresses the role of appropriate children’s literature to support early language and literacy development. Examines methods for developing positive attitudes towards reading, writing and books.
Course Descriptions

EDEC 2700
Early Childhood Practicum
3:3:0  Fall, Spring
* Prerequisite(s): ACT (or equivalent) composite score of 21+, or (ENGL 1010 or ENGH 1005 or higher) with a minimum grade of C-, EDEC 2600 with a B- or higher
* Corequisite(s): EDEC 2720
* Prerequisite(s) or Corequisite(s): EDEC 2610 and EDEC 2620
Provides support-teaching and lead-teaching experiences in partnership preschool programs. Includes planning and implementing learning plans. Focuses on appropriate interactions with children in whole groups, small groups and individually. Addresses positive and effective guidance strategies. Provides parent education opportunities. Provides individual and collaborative reflection on teaching practices. Addresses professional and ethical teaching practices. Requires an assigned field experience with children. Course fee of $25 for materials applies.

EDEC 2720
Early Childhood Assessment
2:2:0  Fall, Spring
* Prerequisite(s): ACT (or equivalent) composite score of 21+, or (ENGL 1010 or ENGH 1005 or higher) with a minimum grade of C-, EDEC 2600 with a B- or higher
* Corequisite(s): EDEC 2700
* Prerequisite(s) or Corequisite(s): EDEC 2610 and EDEC 2620
Addresses assessment of children in an early childhood classroom during the practicum experience. Focuses on authentic assessment of young children, using anecdotal observations, child work samples, photos, checklists, event samplings, and logs. Emphasizes using child assessment to inform curriculum planning. Prepares participants to create child portfolio assessments for use in parent conferences. Includes creating a professional teaching portfolio assessment.

EDEC 3820
Assessment in the PreK-K classroom
3:3:0  Fall, Spring
* Prerequisite(s): University Advanced Standing
* Prerequisite(s) or Corequisite(s): EDEC 2620
Addresses assessment with children in pre-k or kindergarten classrooms. Focuses on authentic assessment of young children using anecdotal observations, child work samples, checklists, event samplings, and logs. Emphasizes assessment to inform curriculum planning. Addresses the connection between daily child assessment to Utah Early Childhood Core Standards or Utah State Kindergarten Core standards. Prepares participants to create child portfolio assessments for use in conference with parents. Includes personal professional portfolio assessment.

Edu Elementary Education (EDEL)

EDEL 1010
Introduction to Education
2:2:0  Fall, Spring, Summer
Facilitates matriculation into professional education programs. Examines the relationships of teaching, learning, motivating, and instructing in classroom settings. Includes observation in public schools to help students understand these relationships and appreciate the role of professional educators in today's society. Requires substantial commitment of time to off-campus field experiences.

EDEL 2200
Computer Technology in Education
2:2:0  Fall, Spring, Summer
Explores the evaluation, selection, and use of technology for children. Develops students' confidence in the use of a variety of technologies. Includes authentic hands-on experiences with digital tools. May be delivered online.

EDEL 2330
Childrens Literature
3:3:0  Fall, Spring, Summer

EDEL 3000
Educational Psychology
3:3:0  Fall, Spring
* Prerequisite(s): University Advanced Standing and admission to Professional Education Program or permission of department chair
Stresses research-based teaching/learning principles used in a classroom setting to enhance learning. Includes study of parent education, involvement, and support strategies, and collaboration with community agencies and professionals. Emphasizes the application of theory to practice with emphasis on teacher-student instructional interaction and teacher/student community agency interactions. Designed to help students understand how children develop and learn and how that knowledge should influence classroom teaching.

EDEL 3050
Foundations of American Education
2:2:0  Fall, Spring
* Prerequisite(s): University Advanced Standing and Admission to Professional Education Program or permission of department chair
Provides a broad and comprehensive overview of American education. Facilitates the understanding of current educational practices in America as a result of the social, historical, economic, and political forces that have had influence on the education system. Provides opportunities for students to evaluate their own belief system concerning education.

EDEL 3100
Kindergarten Classroom
2:2:0  Fall, Spring
* Prerequisite(s): University Advanced Standing and admission to Professional Education Program or permission of department chair
Examines the philosophy of Developmentally Appropriate Practice in connection to interactions with kindergarten children, preparing the classroom environment, and planning/implementing instruction. Addresses the role of play to support learning in all areas of development. Includes strategies for supporting children's social, emotional, and cognitive development. Introduces the principles of intentional teaching. Emphasizes lesson planning in all content areas. Addresses the teacher's responsibility in creating a child-centered environment that supports creativity, critical thinking, communication, and collaboration.

EDEL 3250
Instructional Media
2:2:0  Fall, Spring
* Prerequisite(s): University Advanced Standing and admission to Professional Education Program or permission of department chair
Integrates technologies into classroom instruction. Prepares future teachers to use technologies to differentiate their instruction to meet the needs of all students. Explores ways technology can be used to revitalize pedagogy. Provides future teachers with the ability to develop lesson activities that empower students to make meaningful connections and develop 21st Century skills.

EDEL 330G
Multicultural Understanding
3:3:0  Fall, Spring
* Prerequisite(s): University Advanced Standing and admission to Professional Education Program or permission of department chair

EDEL 3350
Curriculum Design and Assessment
3:3:0  Fall, Spring
* Prerequisite(s): University Advanced Standing and admission to Professional Education Program or permission of department chair
Covers curriculum design and assessment for program effectiveness and student achievement. Discusses instructional models, skills and techniques for engaging students in course content and assessing learning. Teaches beginning lesson plan design.
EDEL 4200
Classroom Management I
1:1:0 Fall, Spring
* Prerequisite(s): University Advanced Standing and admission to Professional Education Program or permission of department chair
Introduces students to basic classroom management ideas. Provides learning strategies for managing students and materials in the classroom environment. Explores basic classroom management theories and practices.

EDEL 4210
Classroom Management II
1:1:0 Fall, Spring
* Prerequisite(s): EDEL 4200 and University Advanced Standing
* Corequisite(s): Admission to Professional Education Program or permission of department chair
Establishes a foundation for selecting a model to follow for the development of a classroom management plan. Considers the role of the teacher and students in developing rules and establishing habits in a classroom setting.

EDEL 4230
Classroom Management III
1:1:0 Fall, Spring, Summer
* Prerequisite(s): University Advanced Standing and admission to Professional Education Program or permission of department chair
Presents strategies for routine management of the classroom environment and materials, and the initial set up of a classroom and management plans.

EDEL 4240
Classroom Management IV
1:1:0 Fall, Spring
* Prerequisite(s): University Advanced Standing, EDEL 4230, admission to Professional Education Program or permission of department chair
* Corequisite(s): EDEL 4880, EDEL 4980, and EDEL 4990
Mentors teacher candidates through school-based collaboration with cooperating teacher or intern coach to determine best practices for classroom management. Includes developing a resume, tips on interviewing for a teaching position, and assistance with a teacher performance assessment.

EDEL 4400
Literacy Methods I
3:3:0 Fall, Spring
* Prerequisite(s): University Advanced Standing and admission to Professional Education Program or permission of department chair
Presents practical and theoretical foundations for fostering reading competence in children, kindergarten through grade 3. Addresses literacy models, research-based reading instruction, and literacy assessments. Includes collaborative activities and public school field experience with children. Emphasizes findings of the National Reading Panel, International Reading Association standards and positions in literacy instruction, as well as Utah Common Core curriculum requirements.

EDEL 4410
Literacy Methods II
3:3:0 Fall, Spring, Summer
* Prerequisite(s): University Advanced Standing and admission to Professional Education Program or permission of department chair
Presents practical and theoretical foundations for fostering reading competence in children, grade 3 to 6. Surveys three essential components of learning to read: fluency, vocabulary, and comprehension as well as reading motivation and academic reading. Addresses the explicit gradual release of responsibility model and think-alouds. Provides collaborative activities and public school field experience where original lesson plans are taught. Emphasizes findings of the National Reading Panel, International Reading Association standards and positions in literacy instruction, as well as Utah Common Core curriculum requirements.

EDEL 4420
Language Arts Methods
3:3:0 Fall, Spring
* Prerequisite(s): (Admission to Professional Education Program or department chair permission) and University Advanced Standing
Presents methods for teaching reading and language art concepts to children, grades K-6. Includes classroom instruction and field experiences with children.

EDEL 443G
Teaching English as a Second Language
3:3:0 Fall, Spring, Summer
* Prerequisite(s): University Advanced Standing and admission to Professional Education Program or permission of department chair
Introduces teachers to the teaching of English as a second language not only for linguistic development, but for cognitive, academic and social development. Includes classroom instruction and field experiences with children. Presents methods for promoting reading competence and fostering literacy in limited English-speaking children, grades K-6. Prepares teachers to teach English as a second language in U.S. public schools. Covers both theoretical and applied aspects of second language learning and teaching and provides techniques, activities, strategies and resources to plan instruction for English language learners (ELLs).

EDEL 4510
Elementary Math Methods I
3:3:0 Fall, Spring
* Prerequisite(s): University Advanced Standing and admission to Professional Education Program or permission of department chair
Introduces methods for teaching math concepts to children, grades K-6. Focuses on developing a mathematical mindset, choosing worthwhile mathematical tasks, and planning lessons. Includes classroom instruction and field experiences with children.

EDEL 4520
Elementary Science Methods
3:3:0 Fall, Spring, Summer
* Prerequisite(s): University Advanced Standing and admission to Professional Education Program or permission of department chair
Presents methods for teaching science concepts to children, grades K-6. Includes classroom instruction and field experiences with children. Includes hands-on laboratory experiences.

EDEL 4530
Elementary Social Studies Methods
3:3:0 Fall, Spring
* Prerequisite(s): University Advanced Standing and admission to Professional Education Program or permission of department chair
Presents methods of teaching social studies concepts to children, grades K-6. Includes classroom instruction and field experiences with children.

EDEL 4540
Elementary Creative Arts Methods
3:3:0 Fall, Spring
* Prerequisite(s): University Advanced Standing and admission to Professional Education Program or permission of department chair
Presents methods for integrating music, art, dance, and drama experiences across the curriculum in grades K-6. Includes classroom instruction and field experiences with children.

EDEL 4550
Elementary Math Methods II
3:3:0 Fall, Spring, Summer
* Prerequisite(s): University Advanced Standing, EDEL 4510, and admission to Professional Education Program or permission of department chair
Presents methods for teaching math concepts through the contexts of specific mathematical content to children, grades K-6. Includes classroom instruction and field experiences with children.

EDEL 4620
Differentiation for Special Populations
2:2:0 Fall, Spring, Summer
* Prerequisite(s): University Advanced Standing and admission to Professional Education Program or permission of department chair
Includes theory and philosophy for teachers working with diverse populations, grades K-6. Outlines critical need for knowing students’ personal, cultural, and community assets, as well as academic strengths and needs. Addresses strategies for pre- and formative assessment determining instruction that differentiates content, learning processes, and products for students’ readiness, interests, and learning profiles.

EDEL 4880
Student Teaching--Grades K-6
9:9:0 Fall, Spring
* Prerequisite(s): University Advanced Standing, admission to Professional Education Program or permission of department chair, and successful completion of all other professional coursework.
* Corequisite(s): EDEL 4240, EDEL 4980, and EDEL 4990
Provides a culminating 12-week teaching experience in an elementary classroom, grades K-6. Enhances knowledge, skills, and attitudes in preparation for a teacher preparation assessment. Course Lab fee of $200 for practical experience applies.
Course Descriptions

EDEL 491R
Independent Study
2 to 4:0 to 4:0 to 12 On Sufficient Demand
* Prerequisite(s): Department Chair Approval and University Advanced Standing

For Bachelor Degree seeking students and other interested persons. Offers independent study as directed at the discretion and approval of the department chairperson. May be repeated for a maximum of 3 credits toward graduation.

EDEL 4980 (Cross-listed with: EDEC 4980)
Elementary Education Capstone Seminar
1:1:0 Fall, Spring
* Prerequisite(s): University Advanced Standing, admission to Professional Education Program or permission of department chair, and successful completion of all other professional coursework.
* Corequisite(s): EDEL 4240, EDEL 4980, and EDEL 4990

Integrates previous coursework and current student teaching or internship experience. Includes designing, teaching and assessing a comprehensive learning segment in both literacy and math. Engages preservice teachers in professional analysis and reflection.

EDEL 4990
Teacher Performance Assessment Project
2:2:0 Fall, Spring
* Prerequisite(s): University Advanced Standing, admission to Professional Education Program or permission of department chair, and successful completion of all other professional coursework.
* Corequisite(s): EDEL 4240, EDEL 4880, and EDEL 4990

Introduces the teaching and learning cycle: planning, instruction, and assessment. Assists students in completing an authentic assessment tool that shows how they develop and evaluate student learning. Documents authentic practices from the student’s teaching experience that address planning, instruction, assessment, analyzing teaching, and academic language to reveal the impact of a candidate’s teaching performance on student learning. Course Lab fee of $300 applies.

EDSC 4000
Teacher Education in the Latino Culture
2:2:0 Not Offered
* Prerequisite(s): Departmental Approval

Introduces LET students to the teacher education system. Explores what it means to be a teacher in the Latino culture with emphasis on being a teacher in Utah. Examines general education classes along with teacher education classes in order to help students understand their importance in the education system. Demonstrates the importance of culture and ancestry in teacher education.

EDSC 2010
Content Area Tutoring
2 to 6:1 to 25 Not Offered
* Prerequisite(s): Instructor Approval

For those interested in working for tutorial programs on campus. Includes methodology, theory and practice of tutoring and completers will have met the requirements for CRLA tutor certification. Features experience tutoring students who have a variety of learning styles. Prepares teachers to appropriately train and use tutors for all students under their direction.

EDSC 3000
Educational Psychology
3:3:0 Fall, Spring
* Prerequisite(s): Admission to Professional Education Program and University Advanced Standing

Stresses research-based teaching and learning principles used in secondary classroom settings to enhance student learning and motivation. Emphasizes the application of theory to practice. Designed to help students in the professional secondary teacher preparation program prepare for state teacher licensing requirements. Requires service learning.

EDSC 3050
Foundations of American Education
2:2:0 Fall, Spring
* Prerequisite(s): University Advanced Standing and admission to Professional Education Program or permission of department chair

Provides a broad and comprehensive overview of American education. Facilitates the understanding of current educational practices in America as a result of the social, historical, economic, and political forces that have had influence on the education system. Provides opportunities for students to evaluate their own belief system concerning education.

EDSC 3250
Instructional Media
2:2:0 Fall, Spring, Summer
* Prerequisite(s): Admission to Professional Education Program and University Advanced Standing

Focuses on using technology in 7-12th grade and addresses the integration of technology in all curricular areas for all students. Investigates theoretical and practical issues surrounding the use of multimedia, Internet resources, Web 2.0 functionality, educational software, and social networking within the curriculum. Examines applications and processes of Educational Technology, 21st Century learning skills, and the impact of national educational technology standards for content areas to teacher pedagogy and development in the classroom.

EDSC 4250
Classroom Management I
2:2:0 Fall, Spring
* Prerequisite(s): University Advanced Standing and admission to Professional Education Program or permission of department chair

Provides effective classroom management procedures (including classroom setup). Develops strategies to build strong student-teacher relationships and classroom management philosophy, rules, and consequences. Identifies strategies for 1st day success and strategies to handle behavior problems encountered in the classroom.

EDSC 4250
Classroom Management II
2:2:0 Fall, Spring
* Prerequisite(s): University Advanced Standing and admission to Professional Education Program or permission of department chair
* Corequisite(s): (EDSC 4850 and EDSC 4990) or (EDSP 4990 and EDSP 4885 or EDSP 4895)

Develops strategies for planning and conducting instruction. Establishes appropriate strategies for handling chronic misbehavior and students with behavioral or emotional disorders. Explores practical and appropriate responses, including internal control and behavior modification strategies with an emphasis on self-monitoring. Prepares preservice secondary teachers to interact well with parents.

EDSC 4440
Content Area Literacies
3:3:0 Fall, Spring
* Prerequisite(s): University Advanced Standing and admission to Professional Education Program or permission of department chair

Prepares preservice secondary teachers to facilitate reading, writing and study skills achievement in the content areas at the secondary school level. Includes field experience in public schools.

EDSC 445G
Multicultural Instruction ESL
3:3:0 Fall, Spring
* Prerequisite(s): University Advanced Standing and admission to Professional Education Program or permission of department chair

Prepares pre-service secondary teachers to understand and facilitate achievement in the content areas for ethnically and linguistically diverse students at the middle school and high school level. Covers foundations of multicultural education and instructional methodology for adaptations for ethnically and linguistically diverse students. Emphasizes inclusive, anti-bias classroom strategies for supporting learning and development of diverse students. Encourages examination of personal beliefs and attitudes about diversity. Introduces teachers to the teaching of English as a second language not only for linguistic development, but for cognitive, academic and social development. Covers both theoretical and applied aspects of second language learning and teaching and provides techniques, activities, strategies and resources to plan instruction for English language learners (ELLs).

EDSC 4500
Secondary Teaching Methods
3:3:0 Fall, Spring
* Prerequisite(s): Acceptance to Professional Secondary Education, EDSC 3000, EDSC 4550, Department Chair Approval, and University Advanced Standing

For students majoring in Secondary Education. Examines teaching methodology as related to teaching and learning. Teaches strategies to prepare teacher candidates for secondary education licensure in relation to a student’s major. Utilizes group projects, classroom exercises and teaching projects. Evaluated by participation, teacher evaluation, exams, portfolio, reflective journal and final teaching project.
EDSC 4550  
Secondary Curriculum Instruction and Assessment  
3:3:0  Fall, Spring  
* Prerequisite(s): University Advanced Standing and admission to Professional Education Program or permission of department chair  
Examines state standards to prepare preservice secondary teachers to write objectives, lesson plans, and units using appropriate models of instruction and assessment. Includes a field experience component.

EDSC 4850  
Student Teaching Secondary  
4 to 10:4 to 10:0  Fall, Spring  
* Prerequisite(s): University Advanced Standing, admission to Professional Education Program or permission of department chair, and successful completion of all other professional coursework  
* Corequisite(s): EDSC 4250 and EDSC 4990  
Provides a thirteen-week teaching experience in a secondary classroom, grades 7-12. Includes application of knowledge, skills, and attitudes derived in previous coursework and program experience. Requires students to be recommended for a secondary education license from the Utah State Board of Education. Course Lab fee of $200 for practical experience applies.

EDSC 491R  
Independent Study  
2 to 4:0 to 4:0 to 12  On Sufficient Demand  
* Prerequisite(s): Department Chair Approval and University Advanced Standing  
For Bachelor Degree seeking students and other interested persons. Offers independent study as directed at the discretion and approval of the department chairperson. May be repeated for a maximum of 4 credits toward graduation.

EDSC 4990  
Teacher Performance Assessment Project  
2:2:0  Fall, Spring  
* Prerequisite(s): University Advanced Standing, admission to Professional Education Program or permission of department chair, and successful completion of all other professional coursework  
* Corequisite(s): EDSC 4250 and EDSC 4850  
Introduces the teaching and learning cycle: planning, instruction, and assessment. Assists students in completing an authentic assessment tool that shows how they develop and evaluate student learning. Documents authentic practices from the student’s teaching experience that address planning, instruction, assessment, analyzing teaching, and academic language to reveal the impact of a candidate’s teaching performance on student learning. Course Lab fee of $300 applies.

EDSP 2840  
Instruction and Assistive Technology  
2:2:0  Fall, Spring, Summer  
Provides students with an overview of the field of instructional and assistive technology (IT and AT) and an understanding of how to successfully integrate varied uses of technology into their specific learning environment. Develops students’ proficiencies for evaluating technology needs and teaching technology-enhanced learning activities to support students with diverse needs in the classroom.

EDSP 340G  
Exceptional Students  
2:2:0  Fall, Spring, Summer  
Covers the role of teachers in the inclusion of exceptional children, working with parents and specialists, and in developing individual educational plans for exceptional children. Introduces characteristics and special needs of exceptional children who have physical, emotional, social, mental, or health exceptionalities. Stresses curriculum modification planning necessary for special needs students. Addresses ethical behaviors specific to teaching exceptional children. Requires ten hours of field work.

EDSP 4100  
Instructional Strategies and Program Management for Students with Mild/Moderate Disabilities  
3:3:0  Fall  
* Prerequisite(s): University Advanced Standing and admission to Professional Education Program or permission of department chair  
Provides an overview of the individual education plan (IEP), service delivery patterns, assessment and programming variables, organizational variables, and instruction and classroom management models necessary for teaching students with mild and moderate disabilities. Provides strategies in how to select, adapt, and use a repertoire of evidence-based instructional strategies to advance learning.

EDSP 4110  
Special Education Law/Policies/Procedures  
3:3:0  Fall  
* Prerequisite(s): University Advanced Standing and admission to Professional Education Program or permission of department chair  
Provides overview of the role of the federal, state, and local government in special education issues with special emphasis on case and regulatory law, including Utah regulation. Focuses on six major principles of the Individuals with Disabilities Education Act as they relate to the free and appropriate public education for all students.

EDSP 4120  
School to Post-School Transition Planning  
2:2:0  Spring  
* Prerequisite(s): University Advanced Standing and admission to Professional Education Program or permission of department chair  
Provides students with knowledge, strategies, and resources necessary to prepare students with disabilities for the transition from school to postsecondary education, employment, community participation, and independent living. Provides skills for transition planning and helping students access services necessary to reach their desired outcomes and become as independent as possible. Emphasizes the person-centered planning process, which embeds decisions based on students’ preferences, interests, and abilities.

EDSP 4130  
Math Instruction for Students with Mild/Moderate Disabilities  
2:2:0  Fall, Spring  
* Prerequisite(s): University Advanced Standing and admission to Professional Education Program or permission of department chair  
* Corequisite(s): EDSP 4131  
Provides specific strategies and techniques to use in teaching students with learning difficulties both in pull-out special educational settings and in more inclusive general education settings. Provides math curricula aligned with the Utah Core standards using Utah Effective Teaching standards. Emphasizes how to implement targeted interventions in Math at the Tier 3 level for students who are not making progress at the Tier 1 and Tier 2 interventions.

EDSP 4131  
Math Practicum  
1:1:0  Fall, Spring  
* Prerequisite(s): University Advanced Standing and admission to Professional Education Program or permission of department chair  
* Corequisite(s): EDSP 4130  
Provides students the opportunity spend time in practicum placements to practice applying skills, competencies, and techniques to teach math to students with mild or moderate disabilities. Provides students with an opportunity to work with practicum coordinators to analyze and solve instructional and management problems by making data-based decisions.

EDSP 4135  
Reading and Writing Instruction for Students with Mild/Moderate Disabilities  
K-12  
2:2:0  Fall  
* Prerequisite(s): University Advanced Standing and admission to Professional Education Program or permission of department chair  
* Corequisite(s): EDSP 4136  
Provides specific strategies and techniques to use in teaching students with learning difficulties both in pull-out special educational settings and in more inclusive general education settings. Features reading and writing curricula aligned with the Utah Core standards using Utah Effective Teaching standards. Emphasizes evidence-based practices and empirically supported instruction for teaching reading and writing to students with disabilities combined with data based decision making.
Course Descriptions

EDSP 4136  
Reading Practicum  
1:1:0  
Fall  
* Prerequisite(s): University Advanced Standing and admission to Professional Education Program or permission of department chair  
* Corequisite(s): EDSP 4135

Provides students practicum placements to practice applying skills, competencies, and techniques to teach reading and writing to students with mild or moderate disabilities. Provides students with practicum coordinators to analyze and solve instructional and management problems by making data-based decisions.

EDSP 4140  
Collaboration and Consultation with Parents and School Staff  
3:3:0  
Fall  
* Prerequisite(s): University Advanced Standing and admission to Professional Education Program or permission of department chair

Provides strategies for collaborating and communicating with families, other educators, related service providers, individuals with exceptionalities, and personnel from community agencies in culturally responsive ways. Provides a review of interagency collaboration and consultation for life skills. Emphasizes creating multidisciplinary teams and professional learning communities who are prepared to assist parents and other teachers in collaborative problem solving.

EDSP 4160  
Assessment and Evaluation in Special Education  
3:3:0  
Fall, Spring  
* Prerequisite(s): University Advanced Standing and admission to Professional Education Program or permission of department chair

Provides an overview of multiple methods of assessment. Presents the connection between gathering assessment information and applying results to decisions regarding students’ eligibility for special education services. Includes administering eligibility assessment tests, interpreting results, and communicating results of assessment tools.

EDSP 4885  
Special Education Student Teaching--Grades K-6  
4 to 10:4 to 10:0  
Fall, Spring  
* Prerequisite(s): Admission to Professional Education Program, Successful completion of all professional education courses, and University Advanced Standing  
* Corequisite(s): EDSC 4250 and EDSP 4990

Provides a 13-week teaching experience in a special education classroom setting, grades K-6. Provides consultation and feedback through observation forms administered by their university consultant and student teaching mentor. Monitors application of knowledge, skills, and attitudes derived in previous course work and program experience. May be graded Credit/No Credit. Course Lab fee of $200 for practical experience applies.

EDSP 4895  
Special Education Student Teaching--7-12  
8:8:0  
Fall, Spring  
* Prerequisite(s): Admission to Professional Education Program or permission of department chair, successful completion of all other professional coursework, and University Advanced Standing  
* Corequisite(s): EDSC 4250 and EDSP 4990

Provides a 13-week teaching experience in a special education classroom setting, grades 7-12. Provides consultation and feedback through observation forms administered by their university consultant and student teaching mentor. Monitors application of knowledge, skills, and attitudes derived in previous course work and program experience. Course Lab fee of $200 for practical experience applies.

EDSP 4990  
Teacher Performance Assessment Project  
2:2:0  
Fall, Spring  
* Prerequisite(s): University Advanced Standing, admission to Professional Education Program or permission of department chair, and successful completion of all other professional coursework  
* Corequisite(s): EDSC 4250 and EDSP 4885 or EDSP 4895

Introduces the teaching and learning cycle: planning, instruction, and assessment. Assists students in completing an authentic assessment tool that shows how they develop and evaluate student learning. Documents authentic practices from the student’s teaching experience that address planning, instruction, assessment, analyzing teaching, and academic language to reveal the impact of a candidate’s teaching performance on student learning. May be graded credit/no credit. Course Lab fee of $300 applies.

EDUC 5100  
Personal Finance in Education  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): Professional educator license or permission of the Dean of the School of Education

Focuses on teaching how to better manage personal finances. Requires students to develop lesson plans on personal financial planning, including goal setting, time value of money, personal financial statements, cash management, credit cards, credit, loans, buying skills, insurance, taxes, housing, investment alternatives, estate and retirement plans.

EDUC 520R  
Special Topics in Education  
.5 to 3:0 to 3:0  
On Sufficient Demand  
* Prerequisite(s): University Advanced Standing

Provides professional educators, administrators, policy makers, and interested members of the public with increased understanding of the latest research affecting K-12 education. Focuses on helping participants keep abreast of effective teaching strategies and curriculum design, alternative learning structures, innovative teaching technologies, educational policies and legislation, etc. May be repeated as many times as desired.

EDUC 5300  
Content-based Curriculum and Instruction and Assessment  
3:3:0  
Summer  
* Prerequisite(s): Professional educator license or permission of the Dean of the School of Education

Provides a foundation in curriculum theory and practice. Introduces instructional design theories, principles and models. Outlines the historical development, current processes and practices of curriculum development, instructional design, implementation, and assessment. Examines applications and processes of curriculum decision making and the impact of national standards on curriculum design and development at the classroom, district, state, and national levels. Requires 15 field experience/practicum hours in addition to class time.

EDUC 5340  
Methods of Second Language Acquisition for Practitioners  
3:3:0  
Summer  
* Prerequisite(s): Professional educator license or permission of the Dean of the School of Education

Prepares teachers to teach content in students’ second language in U.S. public schools. Includes applied aspects of second language learning and teaching. Provides general and special educators, and dual language or second language specialists the techniques, activities, strategies, and resources needed to plan instruction for second language learners. Emphasizes the development of teaching skills in language development, literacy, and content-area instruction for K-12 students. Requires 15 hours of field experience/practicum hours as part of course assignments.

EDUC 5350  
Theories of Second Language Acquisition for Practitioners  
3:3:0  
Summer  
* Prerequisite(s): Professional educator license or permission of the Dean of the School of Education

Examines the intricate web of variables that interact in the second language learning process, including linguistic, cognitive, social, cultural, and political factors. Examines each of these factors in turn and develops understanding of how they work together to foster or inhibit successful second language learning and acquisition. Requires 15 hours of field experience/practicum hours as part of course assignments. Course fee of $15 applies.

EDUC 5360  
Multicultural Education for Practitioners  
3:3:0  
Spring  
* Prerequisite(s): Professional educator license or permission of the Dean of the School of Education

Identifies the connections between language, culture, and identity. Examines multicultural education in the classroom through a focus on the historical, sociological, and philosophical foundations of education in the development of the United States and its education system. Outlines methods to create multicultural/multilingual curricula with a special focus on culturally/linguistically-responsive instruction and assessment techniques.
EDUC 5370  
Assessment for Second Language Learners for Practitioners  
3:3:0  
* Prerequisite(s): Professional educator license or permission of the Dean of the School of Education  

Summer  
Examines methods and practice for the testing of bilingual students at the classroom level. Focuses on assessment of language proficiency in English language learners (ELL) and the assessment of academic achievement of bilingual students in specific content areas. Develops and reviews tasks (test items), response formats, scoring systems, and test administration procedures as critical to attaining validity and fairness. Examines major current testing policies for linguistic minority students. Practicum required. Course fee of $15 applies.

EDUC 5380  
Second Language Literacy Development for Practitioners  
3:3:0  
* Prerequisite(s): Professional educator license or permission of the Dean of the School of Education  

Fall  
Provides teachers with a theoretical framework for understanding literacy and linguistic development of students learning in a second language. Provides an understanding of the literacy instructional needs of these students. Increases knowledge and skill in instructional practices that support second language literacy learning.

EDUC 5390  
Family and Community Involvement for Practitioners  
3:3:0  
* Prerequisite(s): Professional educator license or permission of the Dean of the School of Education  

Spring  
Provides strategies classroom teachers may use for facilitating community participation in the education of minorities. Examines how the teacher's role impacts the adjustment of students to the classroom environment. Studies the techniques of family-school collaboration as well as constructive methods of evaluation. Practicum required. Course fee of $15 applies.

EDUC 5500  
Teaching K-6 Numbers and Operations for Practitioners  
3:3:0  
* Prerequisite(s): Professional educator license or permission of the Dean of the School of Education  

Practitioners  
3:3:0  
On Sufficient Demand  
Provides practicing teachers a deeper understanding of rational numbers, operations with rational numbers, proportionality, and instructional strategies to facilitate the instruction of this content for elementary students. Course fee of $15 applies.

EDUC 5510  
Teaching K-6 Rational Numbers and Proportional Reasoning for Practitioners  
3:3:0  
* Prerequisite(s): Professional educator license or permission of the Dean of the School of Education  

On Sufficient Demand  
Provides practicing teachers a deeper understanding of proportional relationships, ratios, and proportional reasoning. Special attention will be given to the application of mathematical content understandings to planning for classroom instruction and assessment of student learning that is consistent with NCTM process standards and Utah instructional learning outcomes.

EDUC 5520  
Teaching K-6 Algebraic Reasoning for Practitioners  
3:3:0  
* Prerequisite(s): Professional educator license or permission of the Dean of the School of Education  

On Sufficient Demand  
Provides practicing teachers a deeper understanding of algebraic expressions, equations, functions, real numbers, and instructional strategies to facilitate the instruction of this content for elementary students. Course fee of $15 applies.

EDUC 5530  
Teaching K-6 Geometry and Measurement for Practitioners  
3:3:0  
* Prerequisite(s): Professional educator license or permission of the Dean of the School of Education  

On Sufficient Demand  
Provides practicing teachers a deeper understanding of the geometry and measurement content that exists in the state core and instructional strategies to facilitate the instruction of this content. Special attention in this course will be given to applying content understanding in geometry and measurement to classroom practice, interpreting and assessing students’ work and learning, and to integrating NCTM process standards and the Utah Intended Learning Outcomes (ILOs) into instruction. Course fee of $15 applies.

EDUC 5540  
Teaching K-6 Data Analysis and Problem Solving for Practitioners  
3:3:0  
* Prerequisite(s): Professional educator license or permission of the Dean of the School of Education  

On Sufficient Demand  
Provides practicing teachers a deeper understanding of probability and data representation and analysis. Special attention in this course will be given to applying content understandings to classroom practice, to interpreting and assessing students’ work and learning, and to integrating NCTM process standards and the Utah Intended Learning Outcomes (ILOs) into instruction.

EDUC 5550  
Teaching K-6 Assessment and Intervention for Practitioners  
3:3:0  
* Prerequisite(s): Professional educator license or permission of the Dean of the School of Education  

On Sufficient Demand  
Provides practicing teachers a deeper understanding of the various types of assessment and their appropriate use for guiding instruction, intervention, and evaluation of student learning of mathematics content. Special attention will be given to the application of mathematical content understandings to planning for classroom instruction and assessment of student learning that is consistent with NCTM process standards and Utah instructional learning outcomes.

EDUC 5560  
Education of the Gifted and Talented  
3:3:0  
* Prerequisite(s): Professional educator license or permission of the Dean of the School of Education  

On Sufficient Demand  
Prepares teachers of GT learners to better understand the field as an evolving and changing discipline influenced by philosophies, research-based principles and theories, relevant laws and policies, cultural and historical points of view, and human issues that influence professional practice, including assessment, instructional planning, delivery, and program evaluation. Explores characteristics of gifted individuals with emphasis on identifying needs and a general overview of possible services for gifted learners. Prepares teachers to advocate for GT students and their programs in schools and school districts.

EDUC 5610  
Social and Emotional Needs of the Gifted  
3:3:0  
* Prerequisite(s): Professional educator license or permission of the Dean of the School of Education  

On Sufficient Demand  
Explores current research and material relevant to the social and emotional issues that may arise for gifted and talented students. Develops a deeper understanding of social and emotional issues that students with gifts and talents experience in K-12 classrooms. Prepares teachers of GT learners and their families to advocate for GT services. Requires 15 hours of field experience/practicum hours in addition to class time.

EDUC 5620  
Identification/Evaluation in Gifted Education  
3:3:0  
* Prerequisite(s): Professional educator license or permission of the Dean of the School of Education  

On Sufficient Demand  
Prepares teachers to use the results of a variety of assessment tools for both identification and learning progress decisions. Defines the processes of identification, legal policies, and ethical principles of measurement and assessment related to referral, eligibility, program planning, instruction, and placement. Requires 15 field experience/practicum hours in addition to class time.
EDUC 5630  
Theory into Practice in Gifted and Talented Education  
2:2:0  
On Sufficient Demand  
* Prerequisite(s): Professional educator license or permission of the Dean of the School of Education  

Prepares teachers to understand societal influences on the development of curricula. Helps teachers to develop long- and short-range units of instruction anchored in both general and special curricula for gifted and talented students, taking into consideration each individual's abilities and needs, the learning environment, and cultural and linguistic factors.

EDUC 5635  
Methods and Materials in Gifted Education for Practitioners  
2:2:0  
On Sufficient Demand  
* Prerequisite(s): Utah Teaching License or permission from the Dean of the School of Education  

Requires teacher-participants to locate, create, and adapt curricular materials needed to implement differentiated instruction for gifted and talented learners. Helps teachers develop materials and methods of instruction that will encourage creative problem-solving and should be adaptable for a variety of student abilities and needs, the learning environment, and cultural and linguistic factors that may influence instruction.

EDUC 5640  
Improvement of Curriculum Instruction in the Content Areas  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): Professional educator license or permission of the Dean of the School of Education  

Prepares teachers of gifted and talented students with the selection, adaptation, creation, and implementation of differentiated instructional models and strategies, especially those related to fostering creativity. Requires 15 field experience/practicum hours in addition to class time.

EDUC 5650  
Leadership in Gifted and Talented Education  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): Professional educator license or permission of the Dean of the School of Education  

Prepares teachers to effectively use leadership principles to collaborate with students and their families, other educators, and related service providers to advocate for individuals with gifts and talents as they promote the learning and well-being of individuals with gifts and talents across settings and diverse learning experiences.

EDUC 5660  
Reading Assessments and Instructional Interventions for Practitioners  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): Professional educator license or permission of the Dean of the School of Education  

Helps practicing teachers become proficient in developing and using a variety of formal and informal assessments and instructional procedures to increase or accelerate students' reading achievement as appropriate. Prepares teachers to screen for reading problems, diagnose reading strengths and needs, and monitor progress to ensure students achieve optimal growth in reading within the context of a Multi-Tiered System of Supports. Develops procedures for gathering, analyzing, and interpreting data to inform instruction, and presents an overview of methods for communicating findings to stakeholders.

EDUC 5661  
Foundations of Literacy  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): Professional educator license or permission of the Dean of the School of Education  

Helps practicing teachers acquire foundational and declarative knowledge about literacy instruction, including historical perspectives on reading instruction, an introduction to theories and models of literacy acquisition, and discussions of research related to lifelong literacy and its instructional implications. Requires students to examine the history of the field of literacy, including the debates and various stances of reading researchers and the instructional directives developed as a result of the research.

EDUC 5662  
Instruction with Literature and Informational Texts for Children and Young Adults  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): Professional educator license or permission of the Dean of the School of Education  

Provides an overview of literary and informational texts for children and young adults, with emphasis on classic and recent publications, and their appropriate use in the classroom. Discusses important authors, historical context, and background, and considers current trends and classroom applications in literacy.

EDUC 5663  
Content Area Reading and Writing Instruction for Practitioners  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): Professional educator license or permission of the Dean of the School of Education  

Helps practicing teachers develop an in-depth understanding of the research findings, issues, principles, and practices related to exemplary, research-based literacy instruction in the content areas. Prepares teachers to provide every student with meaningful and engaging opportunities to learn high-level skills through reading, writing, and speaking while working with graphics and texts, including images, video, and audio, in the K-12 curriculum. Teaches how to evaluate texts in various content areas or topics to identify the qualitative and quantitative features of a text and address reader and task considerations.

EDUC 5664  
Instructional Implications of Literacy Development for Practitioners  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): Professional educator license or permission of the Dean of the School of Education  

Focuses on emergent literacy development for students in grades K-12 and how that development is well-designed for appropriate literacy learning environments, experiences, and instructional interventions for emergent language learners. Covers the history, major perspectives, and theories about how students understand and develop literacy. Develops understandings of developmentally appropriate instruction, reading behaviors, and literacy development within the larger framework of the communicative arts, i.e., oracy, written expression, reading, spelling, handwriting, listening, the visual and performing arts, and the social community, i.e., family, socio-economic conditions, culture, ethnicity, language, etc.

EDUC 5665  
Reading Comprehension Instruction for Practitioners  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): Professional educator license or permission of the Dean of the School of Education  

Helps practicing teachers acquire knowledge and understanding of current theories and models that impact reading comprehension and apply that knowledge in instruction. Focuses on understanding reading comprehension, increasing the range, quality and complexity of reading materials used by students, and supporting student responses to text. Builds teachers' ability to help their students use texts efficiently and effectively to develop and express complex, critical thinking.

EDUC 5666  
Effective Writing Instruction for Practitioners  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): Professional educator license or permission of the Dean of the School of Education  

Examines theories, concepts, and methodologies that promote the development of strategic writers. Prepares teachers to provide research-based methods for teaching K-12 students to develop a range of writing skills and applications including how to compose opinion/argumentation, informational/expository, and narrative writing. Facilitates teachers' ability to assess K-12 student writing.

EDUC 5700  
Foundations of Dual Language Immersion Education  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): Professional educator license or permission of the Dean of the School of Education  

Presents a historical overview and the theoretical and research foundations for dual language and immersion education. Emphasizes the practical application of theory and research in immersion programs.
EDUC 5710 Instructional Strategies and Curriculum and Classroom Management for the Elementary Classroom
3:3:0 On Sufficient Demand
* Prerequisite(s): Professional educator license or permission of the Dean of the School of Education

Designed to acquaint secondary teachers seeking a K-12 Dual Language Immersion (DLI) endorsement with instructional strategies and classroom management for the elementary classroom. Focuses on helping students to understand the elementary curriculum and plan units of instruction, and to build a repertoire of teaching strategies, tasks, and resources for use in the elementary classroom. Requires 15 hours of field experience/practicum hours in a DLI classroom in addition to class time.

EDUC 5750 Energy in STEM for Elementary Teachers
3:3:0 On Sufficient Demand
* Prerequisite(s): Recommended: Education Majors or Licensed Educators

Provides teachers with a deep and useful understanding of energy and the nature of how students use concepts of energy to make sense of phenomena across life, earth, and physical science. Enhances teacher insights into: 1) how matter and energy interact, 2) the relationships of energy to forces and interactions within fields, and 3) pedagogical content knowledge around teaching and learning about energy. Also connects knowledge of energy concepts to practices in technology, engineering, and mathematics.

EDUC 5760 Force in STEM for Elementary Teachers
3:3:0 On Sufficient Demand
* Prerequisite(s): Recommended: Education Majors or Licensed Educators

Provides teachers with a deep and useful understanding of force and the nature of how students use concepts of force to make sense of phenomena across life, earth, and physical science. Enhances teacher insights into: 1) how force, matter and energy interact, 2) the relationship of force to energy and interactions within fields, and 3) pedagogical content knowledge around teaching and learning about force. Also connects knowledge of concepts of force to practices in technology, engineering and mathematics.

EDUC 5770 Matter in STEM for Elementary Teachers
3:3:0 On Sufficient Demand
* Prerequisite(s): Recommended: Education Majors or Licensed Educators

Provides teachers with a deep and useful understanding of matter and the nature of how students use concepts of matter to make sense of phenomena across life, earth, and physical science. This understanding enhances teacher insights into: 1) how matter and energy interact, 2) the relationships of matter to forces and interactions within fields, and 3) pedagogical content knowledge around teaching and learning about matter. Also connects knowledge of concepts of matter to practices in technology, engineering and mathematics.

EDUC 5780 Nature of Science and Engineering
3:3:0 On Sufficient Demand
* Prerequisite(s): Recommended: Education Majors or Licensed Educators

Explores the nature of science using science and engineering principles, practices, and processes. Explores applications to Science, Technology, Engineering and Mathematics using learner-based pedagogy. Develops teaching practices to assist participants in educating K-6 students in selected Life and Earth Science Standards.

EDUC 5790 STEM Practices with a Focus on Technology and Problem-Based Learning
3:3:0 On Sufficient Demand
* Prerequisite(s): Recommended: Education Majors or Licensed Educators

Engages participants in developing meaningful understandings of problem-based approaches to teaching, learning, and the integration of STEM practices across the curriculum using appropriate technology. Requires the development and creation of problem-based, hands-on experiences.

EDUC 5800 Cognition Education and Technology for Practitioners
3:3:0 Spring
* Prerequisite(s): Professional educator license or permission of the Dean of the School of Education

Examines the increasingly pervasive role of electronic media in educating and socializing young students, especially as it affects the K-12 classroom. Explores the range of content available to these students, their families, and their classrooms and reviews research on the role of media in shaping individual identity and affecting school performance; analyzes public policies that affect teachers and students.

EDUC 5810 Instruction Curriculum & Educational Leadership in the Digital Age for Practitioners
3:3:0 Summer
* Prerequisite(s): Professional educator license or permission of the Dean of the School of Education

Examines issues surrounding the use of technology in curricular and instructional design, especially in designing coursework for an online learning environment. Requires students to incorporate appropriate digital media formats to create an online learning environment. Addresses issues of school leadership, as participants may become mentors in the area of educational technology.

EDUC 5820 Designing and Producing Media for Instruction for Practitioners
3:3:0 Summer
* Prerequisite(s): Professional educator license or permission of the Dean of the School of Education

Helps students produce educational media materials for their particular classroom. Requires students to collaborate with others to design, produce, test, and revise a unique project tailored for their instructional practice. Requires students to use a variety of digital tools to conceptualize, design, fashion, and evaluate media projects.

EDUC 5830 Digital Models of Instruction for Practitioners
3:3:0 Summer
* Prerequisite(s): Professional educator license or permission of the Dean of the School of Education

Focuses on the use of instructional design and Web page design principles for specific classroom populations. Examines the best instructional use of online options, including flipped and hybrid course design, and gaming. Requires completion of an instructional design plan for an instructional unit of the participants’ choice for a learner group of their choice.

EDUC 5840 Universal Design for Learning for Practitioners
3:3:0 Fall
* Prerequisite(s): Professional educator license or permission of the Dean of the School of Education

Focuses on universal design for learning (UDL) that differentiates curricula and learning environments for a wide range of student abilities and disabilities. Requires students to learn to apply the UDL approach in designing differentiated learning experiences for their classrooms using educational technology.

EDUC 5850 Digital Course Design Capstone for Practitioners
3:3:0 Spring
* Prerequisite(s): Professional educator license or permission of the Dean of the School of Education

Teaches students to design and create media for content-specific units of instruction. Requires students to use technology specific to a given discipline, and to incorporate instructional design and digital media to create an online unit of study.

EDUC 6010 ABA Concepts and Principles
3:3:0 Fall
* Prerequisite(s): Admission to the Master of Education program or permission of the Dean of the School of Education

Provides students with a strong foundation in the basic concepts and principles of ABA, including the history and philosophical assumptions of behavior analysis and autism spectrum disorder. Graduate fee of $640 applies.

EDUC 6020 Ethics and Professional Competencies in Applied Behavioral Analysis
3:3:0 Fall
* Prerequisite(s): Admission to the Master of Education program or permission of the Dean of the School of Education

Defines ethical responsibilities required in the field of applied behavior analysis. Introduces policy and practice related to informed consent, protection of confidentiality, selection of least intrusive and least restrictive behavior change procedures within the context of case methodology. Emphasizes legal issues and ethical decision making processes. Covers professional, disciplinary, and ethical standards for Board Certified Behavior Analyst certification in depth. Course fee of $640 applies.
Course Descriptions

EDUC 6030
Developing and Changing Behaviors
3:3:0
Spring
* Prerequisite(s): Admission to the Master of Education program or permission of the Dean of the School of Education

Explains various behavioral assessments and intervention strategies. Focuses on single subject designs and procedures for measuring behavior, displaying data, and interpreting results. Examines ways to evaluate and analyze behavior change. Course fee of $640 applies.

EDUC 6040
Measurement in Single Subject Design
3:3:0
Spring
* Prerequisite(s): Admission to the Master of Education program or permission of the Dean of the School of Education

Introduces methods for collection and interpretation of various types of data. Focuses on the importance of making data-driven decisions for behavior change procedures based on functional relationships. Course fee of $640 applies.

EDUC 6050
Functional Behavior Assessment and Treatment
3:3:0
Fall
* Prerequisite(s): Admission to the Master of Education program or permission of the Dean of the School of Education

Focuses on using methods and tools for selecting and defining target behaviors and for behavior measurement. Provides experience in methods to develop new behavior using imitation, modeling, shaping, and chaining and methods to decrease behaviors using extinction, differential reinforcement and antecedent interventions. Reviews and extends the study of functional behavior assessment, verbal behavior, generalization and maintenance of behavior change. Course fee of $640 applies.

EDUC 6060
Advanced Topics in Applied Behavior Analysis
3:3:0
Fall
* Prerequisite(s): Admission to the Master of Education program or permission of the Dean of the School of Education

Focuses on advanced topics in behavior analysis, including current research, changes in relevant legislation, emerging areas of behavior analysis, measurement technology, school applications, teaching methodology, innovative interventions, and ethics. Course fee of $640 applies.

EDUC 6070
Training Supervision and Performance Monitoring in Applied Behavior Analysis
3:3:0
Spring
* Prerequisite(s): Admission to graduate status, admission to the Master of Education program, or permission of the Dean

Examines the training, supervision, and performance monitoring from an applied Behavior Analytic perspective. Provides students with a strong foundation in effective training as it applies to parents, staff, and supervisees. Develops competency in supervision of ABA interns. Provides an overview of systems-level analysis, including organizational assessment, quality assurance, performance, and outcome monitoring.

EDUC 6080
Cognition, Education, and Technology
3:3:0
Spring
* Prerequisite(s): Admission to Graduate Status, Admission to the School of Education Masters Degree Program, Or permission of the Dean

Focuses on using methods and tools for selecting and defining target behaviors and for behavior measurement. Provides experience in methods to develop new behavior using imitation, modeling, shaping, and chaining and methods to decrease behaviors using extinction, differential reinforcement and antecedent interventions. Reviews and extends the study of functional behavior assessment, verbal behavior, generalization and maintenance of behavior change. Course fee of $640 applies.

EDUC 6081
Instruction, Curriculum and Educational Leadership in the Digital Age
3:3:0
Summer
* Prerequisite(s): Admission to Graduate Status, Admission to the School of Education Masters Degree Program, Or permission of the Dean

Focuses on using instructional design and Web page design principles. Examines the best instructional use of online options, including flipped and hybrid course design, and gaming. Requires completion of an instructional design plan for an instructional unit of the participants' choice for a learner group of their choice.

EDUC 6082
Designing and Producing Media for Instruction
3:3:0
Summer
* Prerequisite(s): Admission to Graduate Status, Admission to the School of Education Masters Degree Program, Or permission of the Dean

Focuses on universal design for learning (UDL) that creates curricula and learning environments that are designed to achieve success for a wide range of student abilities and disabilities. Covers the UDL approach, which takes advantage of advances in the fields of cognitive neuroscience of learning, educational technologies, and multimedia. Teaches how to apply the UDL approach in designing differentiated learning experiences using educational technology.

EDUC 6083
Digital Models of Instruction
3:3:0
Summer
* Prerequisite(s): Admission to Graduate Status, Admission to the School of Education Masters Degree Program, Or permission of the Dean

Focuses on using instructional design and Web page design principles. Examines the best instructional use of online options, including flipped and hybrid course design, and gaming. Requires completion of an instructional design plan for an instructional unit of the participants' choice for a learner group of their choice.

EDUC 6084
Universal Design for Learning
3:3:0
Spring
* Prerequisite(s): Admission to Graduate Status, Admission to the School of Education Masters Degree Program, Or permission of the Dean

Focuses on using instructional design and Web page design principles. Examines the best instructional use of online options, including flipped and hybrid course design, and gaming. Requires completion of an instructional design plan for an instructional unit of the participants' choice for a learner group of their choice.

EDUC 6085
Digital Course Design Capstone
3:3:0
Spring
* Prerequisite(s): Admission to Graduate Status, Admission to the School of Education Masters Degree Program, Or permission of the Dean

Focuses on using instructional design and Web page design principles. Examines the best instructional use of online options, including flipped and hybrid course design, and gaming. Requires completion of an instructional design plan for an instructional unit of the participants' choice for a learner group of their choice.

Teaches students to design and create media for content-specific units of instruction. Covers the use of technology specific to a given discipline, and teaches how to incorporate instructional design and digital media to create an online unit of study.
EDUC 6100  
**Research Methodology**  
*Prerequisite(s): Admission to Graduate Status  
Admission to the School of Education Masters Degree Program Or permission of the Dean  
Introduces the principal methodologies used in research in education. Presents basic information about the purposes of research, the scientific method, and basic qualitative and quantitative research. Identifies methods for locating, reading, interpreting and using research reports and in applying measurement issues and research methods to classroom problems. Investigates teacher research practices and ways it can be used to study teaching and teacher education.

EDUC 6110  
**Applied Statistics for Education**  
*Prerequisite(s): Admission to Graduate Status  
Admission to the School of Education Masters Degree Program Or permission of the Dean  
Introduces elementary statistics in educational settings and includes descriptive statistics, sampling, central tendency, and inferential methods. Emphasizes reading, understanding and evaluating statistics in research reports.

EDUC 6120  
**Personal Leadership and Organizational Design**  
*Prerequisite(s): Admission to Master of Education: Educational Leadership Emphasis leading to USBE Education Leadership License Area of Concentration or Admission to Educational Leadership, Graduate Certificate leading to USBE Education Leadership License Area of Concentration  
Introduces students to critical concepts about leadership theories and practice. Provides both historical perspective and current understanding to approaches, methods, and practices of leaders. Provides insight into how leadership skills and organization strategies produce increased productivity and better learning/working environments for P-12 students' academic success and well-being. Provides opportunity for class members to examine their own beliefs and develop a personal model of leadership. Emphasizes attributes that promote integrity, fairness, transparency and trust.

EDUC 6130  
**School Operations and Management-Finance/Law/Safety**  
*Prerequisite(s): Admission to Master of Education: Educational Leadership Emphasis leading to USBE Education Leadership License Area of Concentration or Admission to Educational Leadership, Graduate Certificate leading to USBE Education Leadership License Area of Concentration  
Explores school finance, law, and safety as primary themes in school management and operations. Provides an overview of current K-12 management conditions and theory. Discusses these themes 1) best management theories and practices for not-for-profit organizations, 2) rules and regulations that govern school finance, 3) court rulings in areas of student speech, discipline, and other points of tension in public schools, and 4) school organization to keep students physically and emotionally safe.

EDUC 6140  
**Instructional Leadership and Data-based Decision Making**  
*Prerequisite(s): Admission to Master of Education: Educational Leadership Emphasis leading to USBE Education Leadership License Area of Concentration or Admission to Educational Leadership, Graduate Certificate leading to USBE Education Leadership License Area of Concentration  
Advances student understanding, skill, and capacity to facilitate coherent systems of curriculum development, impactful instruction, valid assessment. Builds professional capacity for data interpretation and decision making for the success and well-being of students and faculty.

EDUC 6150  
**School Operations and Management-Communication/Planning/HR/Evaluation**  
*Prerequisite(s): Admission to Master of Education: Educational Leadership Emphasis leading to USBE Education Leadership License Area of Concentration or Admission to Educational Leadership, Graduate Certificate leading to USBE Education Leadership License Area of Concentration  
Explores school communication, planning, human resources, and evaluation as primary themes in school management and operations. Provides an overview of current K-12 management conditions and theory. Reviews the role of legislation, policy, and leadership on the primary themes. Prepares students to communicate with stakeholders, strategically plan for school improvement, know best practices in the hiring and retention of public school staff.

EDUC 6160  
**Leading Professional Learning Communities**  
*Prerequisite(s): Admission to Master of Education: Educational Leadership Emphasis leading to USBE Education Leadership License Area of Concentration or Admission to Educational Leadership, Graduate Certificate leading to USBE Education Leadership License Area of Concentration  
Introduces students to critical concepts about building a school culture that leverages the strengths of collective solutions. Provides background information on the development of professional learning communities (PLCs) and how they can impact high student performance. Scaffolds student knowledge on how to organize and implement PLCs. Identifies leadership skills required to effectively manage change within the school setting. Introduces assessments to use in identifying challenges and summarizing impact of PLC fairness, transparency and trust.

EDUC 6170  
**Leading Change/Innovation/Educational Entrepreneurship**  
*Prerequisite(s): Admission to Master of Education: Educational Leadership Emphasis leading to USBE Education Leadership License Area of Concentration or Admission to Educational Leadership, Graduate Certificate leading to USBE Education Leadership License Area of Concentration  
Introduces critical concepts of school change. Addresses strategies to encourage and manage innovation and entrepreneurship. Prepares students to aid learners in developing deeper abilities to create, critique, and collaborate to solve complex challenges facing society. Prepares students to successfully manage change and innovation in teaching and learning in the 21st century. Guides students in learning to anticipate needed changes and to develop skills to effectively lead innovation in their school settings.

EDUC 6200  
**Masters Project**  
*Prerequisite(s): Admission to Graduate Status  
Admission to the School of Education Masters Degree Program Or permission of the Dean  
Provides working knowledge of action research methods in the public schools. Sets the standards for the professional M.Ed. action research-based project. Utilizes APA guidelines. Establishes techniques and strategies for successful project completion.

EDUC 6201  
**Teacher Performance Assessment Project**  
*Prerequisite(s): Admission to Secondary Teaching, Graduate Certificate Program  
*Corequisite(s): EDUC 6203  
Introduces the teaching and learning cycle: planning, instruction, and assessment. Assists students in completing an authentic assessment tool that shows how they develop and evaluate student learning. Documents authentic practices from the student's teaching experience that address planning, instruction, assessment, analyzing teaching, and academic language to reveal the impact of a candidate's teaching performance on student learning.

EDUC 6202  
**Classroom Management Practicum**  
*Prerequisite(s): Admission to Secondary Teaching, Graduate Certificate Program  
Provides first-hand, supervised, clinical experience in observing and implementing effective class management practices.

EDUC 6203  
**Student Teaching Graduate Licensure**  
*Prerequisite(s): Admission to Secondary Teaching, Graduate Certificate Program  
*Corequisite(s): EDUC 6201  
Includes 400 hours of student teaching experience in a secondary classroom, grades 7-12. Includes application of knowledge, skills, and attitudes derived in previous course work and program experience. Is required for students to be recommended for a secondary education license from the Utah State Office of Education. May be Graded Credit/No Credit.
### Course Descriptions

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<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
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<td>EDUC 6300</td>
<td>Curriculum Design</td>
<td>Provides a foundation in curriculum theory and practice. Introduces instructional design theories principles and models. Outlines the historical development, current processes and practices of curriculum development, instructional design, implementation, and assessment. Investigates research and theory about educational contexts, motivation, curriculum, learning, and development as they relate to models of instruction. Examines applications and processes of curriculum decision making and the impact of national standards for content areas to curriculum design and development in classroom and district settings.</td>
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<tr>
<td>EDUC 6310</td>
<td>Assessing Educational Practices</td>
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<td>EDUC 6320</td>
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<td>EDUC 6330</td>
<td>Diversity and Differentiation in the Classroom</td>
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<td>EDUC 6340</td>
<td>English as a Second Language Methods</td>
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<tr>
<td>EDUC 6350</td>
<td>Theories of Second Language Acquisition</td>
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<td>EDUC 6360</td>
<td>Multicultural Education</td>
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<td>EDUC 6370</td>
<td>Assessment of Second Language Learners</td>
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<tr>
<td>EDUC 6380</td>
<td>Literacy and Linguistics in English as a Second Language</td>
<td>Focuses on how teachers can best meet the literacy and language needs of students from a variety of cultural, socioeconomic and language groups. Explores frameworks for providing high-quality literacy instruction to all students. Analyses classrooms and schools that have been successful in accomplishing this. Examines ethnic identities and personal conceptions of diversity, and how these may impact instructional decisions. Analyzes students and families represented in their classrooms. Discusses ways to build bridges between home and school cultures.</td>
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<tr>
<td>EDUC 6390</td>
<td>Family and Community Involvement</td>
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<td>EDUC 6400</td>
<td>Teachers as Leaders</td>
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<td>EDUC 6410</td>
<td>Contemporary Issues</td>
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</tbody>
</table>
EDUC 6420  
**Diversity in Higher Education**  
3:3:0  
Fall  
* Prerequisite(s): Admission to graduate status, admission to Master of Education program, or permission of the Dean  
Examines multiple critical lenses informing the higher education landscape on issues related to marginalization, identity, silence, under-representation and other factors that American higher education has historically been inadequate at addressing. Guides students to develop a personal framework based in reflexivity around biases. Synthesizes collegial, institutional, historical and contextual nuances to provide foundational knowledge. Develops a dispositional and interdisciplinary approach to facilitate inclusion within particular higher education roles and activities.

EDUC 6430  
**Law-Policy-Ethics in Higher Education**  
3:3:0  
Fall  
* Prerequisite(s): Admission to graduate status, admission to the Master of Education Program, or permission of the Dean  
Examines legal frameworks, liability, compliance, constitutional and civil rights, competing rights of institutions, faculty, staff, and students, and contractual obligations in higher education. Explores the legal, ethical, institutional, and political processes that influence higher education and the relationship between law and the system of higher education. Critiques legal issues as a way to define the role and meaning of higher education in today’s society.

EDUC 6440  
**Leadership in Higher Education**  
3:3:0  
Spring  
* Prerequisite(s): Admission to graduate status, admission to the Master of Education Program, or permission of the Dean  
Examines organizational theory, models, governance, and management processes in higher education, leadership perspectives and leadership theory. Explores leadership as a discipline that transcends functional area, serving as a framework to lead and guide within higher education. Investigates leadership theories and formulates personal approach as an educational leader.

EDUC 6450  
**Planning-Budget-Organizational Effectiveness**  
3:3:0  
Fall  
* Prerequisite(s): Admission to graduate status, admission to the Master of Education Program, or permission of the Dean  
Examines the principles and practices of strategic planning, evaluation, accountability, and financial management in higher education institutions, operating units, and academic programs.

EDUC 6460  
**Student Success and Development**  
3:3:0  
Spring  
* Prerequisite(s): Admission to graduate status, admission to the Master of Education Program, or permission of the Dean  
Prepares students to develop the major theories of learning, development, and retention, and connects them with current practice.

EDUC 6470  
**Foundations and Contexts of Higher Education**  
3:3:0  
Summer  
* Prerequisite(s): Admission to graduate status, admission to the Master of Education Program, or permission of the Dean  
Examines diverse models and systems of higher education in an effort to provide contexts for effective work and leadership in higher education environments. Explores the nuances of higher education institutions in terms of political dynamics, shared governance, technology, innovation, organizational culture, and external/intermediate constituent expectations and perceptions. Discusses U.S. and international models of higher education and future possibilities.

EDUC 6500  
**Teaching K-6 Numbers and Operations**  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): Admission to School of Education graduate program; professional educator license; or permission of the Dean of the School of Education  
Designed for K-6 teachers. Covers the content of Number and Operations to develop a comprehensive understanding of our number system and relate its structure to computation, arithmetic, algebra, and problem solving. Includes number, number sense, computation, and estimation through a coordinated program of activities that develop number concepts and skills. Special attention in this course will be given to how children learn and connect the fundamental concepts of number systems, children's developmental trajectories in the mathematical content of number and operations, how children construct their understanding of various geometric concepts, children's typical error patterns, problem solving strategies, interpreting and assessing students' work and learning, and integration of the NCTM process standards and the Utah Intended Learning Outcomes (ILOs).

EDUC 6510  
**Teaching K-6 Rational Numbers and Proportional Reasoning**  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): Admission to School of Education graduate program; professional educator license;  
EDUC 6500, or permission of the Dean of the School of Education  
Provides practicing teachers a deeper understanding of rational numbers, operations with rational numbers, proportionality, and instructional strategies to facilitate the instruction of this content for elementary students.

EDUC 6520  
**Teaching K-6 Algebraic Reasoning**  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): Admission to School of Education graduate programs; professional educator license; or permission of the Dean of the School of Education  
Provides practicing teachers a deeper understanding of algebraic expressions, equations, functions, real numbers, and instructional strategies to facilitate the instruction of this content for elementary students.

EDUC 6530  
**Teaching K-6 Geometry and Measurement**  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): Acceptance to graduate studies in the School of Education; professional educator license, or permission of the Dean of the School of Education  
Provides practicing teachers a deeper understanding of the geometry and measurement content that exists in the state core and instructional strategies to facilitate the instruction of this content. Special attention in this course will be given to how children learn and connect the fundamental concepts of geometry and measurement, children's developmental trajectories in this mathematical content, how children construct their understanding of various geometric concepts, children's typical error patterns, problem solving strategies, interpreting and assessing students' work and learning, and integration of the NCTM process standards and the Utah Intended Learning Outcomes (ILOs).

EDUC 6540  
**Teaching K-6 Data Analysis and Problem Solving**  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): Professional educator license; admission to graduate program in the School of Education; or permission of the Dean of the School of Education  
Develops a firm problem-solving foundation. Using skills and strategies applied in mathematical contexts practicing teachers will learn to think, work with others, present solutions orally to the whole class, and write up detailed solutions. Provides practicing teachers a deeper understanding of probability and data representation and analysis. Special attention in this course will be given to children's typical error patterns, problem solving strategies, interpreting and assessing students' work and learning, and integration of the NCTM process standards and the Utah Intended Learning Outcomes (ILOs).

EDUC 6550  
**Teaching K-6 Assessment and Intervention**  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): Professional educator license; admission to graduate level in the School of Education; or permission of the Dean of the School of Education  
Provides practicing teachers a deeper understanding of the various types of assessment and their appropriate use for guiding instruction, intervention, and evaluation of student learning of mathematics content. Teaches how to screen students for mathematics problems or potential mathematics problems, diagnose students' mathematics strengths and needs, and monitor students' progress to ensure students will make optimal progress in mathematics. Teaches procedures for managing and analyzing assessment data.
EDUC 6600
High Ability Education
3:3:0 On Sufficient Demand
* Prerequisite(s): Admission into the Master of Education program
Prepares teachers of GT learners to better understand the field as an evolving and changing discipline influenced by history, philosophies, research-based principles and theories, relevant laws and policies, cultural and historical points of view, and human issues that influence professional practice, including assessment, instructional planning, delivery, and program evaluation. Explores characteristics of gifted individuals with emphasis on identifying needs and a general overview of possible services for gifted learners. Prepares teachers to advocate for GT students and their programs in schools and school districts. Emphasizes discussing and finding applications from current research in gifted, talented, and advanced education.

EDUC 6610
Social and Emotional Needs of High Ability Learners
3:3:0 On Sufficient Demand
* Prerequisite(s): Admission to the Master of Education program
Explores current research and material relevant to the social and emotional issues that may arise for gifted and talented students. Foci on current research through discussions, projects, and classroom observation. Develops a deeper understanding of social and emotional issues that students with gifts and talents experience in K-12 classrooms. Applies findings from current and seminal literature in the field. Includes classroom observations of connections between cognitive development and affective domain. Includes 15 hours of field experience/practicum in addition to class time.

EDUC 6620
Identification/Evaluation of High Ability Learners
3:3:0 On Sufficient Demand
* Prerequisite(s): Admission to Master of Education program
Prepares teachers to use the results of a variety of assessment tools for both identification and learning progress decisions. Defines the processes of identification, legal policies, and ethical principles of measurement and assessment related to referral, eligibility, program planning, instruction, and placement. Includes current and historic documents and research to contrast ideas of determining “giftedness” throughout history with modern conceptions underlying gifted and talented education. Includes 15 field experience/practicum hours in addition to class time.

EDUC 6630
Theory into Practice for High Ability Education
3:3:0 On Sufficient Demand
* Prerequisite(s): Admission to Master of Education program
Prepares teachers to understand societal influences on the development of curricula. Focuses on long- and short-range units of instruction anchored in both general and special curricula for gifted and talented students. Addresses individual’s abilities and needs, the learning environment, and cultural and linguistic factors. Includes current research-based classroom practices.

EDUC 6635
Methods and Materials for High Ability Learners
3:3:0 On Sufficient Demand
* Prerequisite(s): Admission to Master of Education program
Requires teacher-participants to locate, create, and adapt curricular materials and methods of instruction needed to implement differentiated instruction for gifted and talented learners. Encourages creative problem-solving for a variety of student abilities and needs, the learning environment, and cultural and linguistic factors that may influence instruction. Requires application of current findings from the literature to the evaluation of methods and materials for gifted and talented instruction.

EDUC 6640
High Ability Curriculum and Instruction in the Content Areas
3:3:0 On Sufficient Demand
* Prerequisite(s): Admission to Master of Education program
Prepares teachers of gifted and talented students with the selection, adaptation, creation, and implementation of differentiated instructional models and strategies, especially those related to fostering creativity. Evaluates current research on outcomes from instruction based on creative processes that are designed to foster creative, critical, and analytic thinking. Requires 15 field experience/practicum hours in addition to class time.

EDUC 6660
Reading Assessments and Instructional Interventions
3:3:0 On Sufficient Demand
* Prerequisite(s): Admission to Graduate Status, Admission to the School of Education Masters Degree Program, Or permission of the Dean
Focuses on curricular-based measurement, the assessment/instructional cycle, and how to use assessment data to design and implement instructional interventions to increase students' reading achievement. Studies the four federal assessment categories: screening, progress monitoring, diagnosis, and outcomes, as well as assessment instruments within the various categories and the 3-tiered model. Focuses on building students' oral language and background knowledge, teaching alphabet knowledge and phonemic awareness, teaching students to use and recognize and use common phonic spelling patterns, building vocabulary, increasing fluency, teaching students to apply comprehension strategies, and fostering students reading engagement. Describes reading assessments and interventions that are appropriate at the primary, intermediate, and secondary levels.

EDUC 6661
Literacy and Cognition of Reading
3:3:0 On Sufficient Demand
* Prerequisite(s): Admission to Graduate Status, Admission to the School of Education Masters Degree Program, Or permission of the Dean
Provides foundational knowledge about literacy instruction, including an historical perspective on reading instruction, an introduction to theories and models of literacy acquisition, a study of language systems and language acquisition, and theories related to the literacy development of people across the lifespan and their instructional implications. Includes the debates and various stances of reading researchers, and the instructional directives that grew out of the research.

EDUC 6662
Early Literacy Instruction
3:3:0 On Sufficient Demand
* Prerequisite(s): Admission to Graduate Status, Admission to the School of Education Masters Degree Program, Or permission of the Dean
Designed to help students understand the history, major perspectives and theories about how young children understand literacy. Focuses on developmentally appropriate instruction and the value of play relating to oral and print literacy in kindergarten and the primary grades. Examines literacy development within the larger framework of the communicative arts, i.e., oracy, written expression, reading, spelling, handwriting, listening, the visual and performing arts, and the social community, i.e., family, socioeconomic conditions, culture, ethnicity, language, etc.

EDUC 6663
Content Area Reading
3:3:0 On Sufficient Demand
* Prerequisite(s): Admission to Graduate Status, Admission to the School of Education Masters Degree Program, Or permission of the Dean
Designed to help practicing teachers develop an in-depth understanding of the research findings, issues, principles and practices related to exemplary, research-based reading and writing instruction in the content areas. Covers the use of textbooks and nonfiction reading materials for young students who are beginning readers and writers. Focuses on how to assist all learners to read, understand and learn from nonfiction reading materials. Covers assisting students at all grade levels in their reading of materials and writing of text related to science, social studies, history, math art, music, etc.

EDUC 6664
Adolescent Literacy
3:3:0 On Sufficient Demand
* Prerequisite(s): Admission to Graduate Status, Admission to the School of Education Masters Degree Program, Or permission of the Dean
Provides practicing secondary teachers with concepts, models, and strategies to support adolescent literacy instruction. Familiarizes teachers with practical constructs for understanding adolescent literacy, its importance, how it can be fostered and employed for student learning, how the challenges of adolescent literacy differ from the challenges of early reading instruction, and how systematic interventions can help remediate chronic failure in literacy and learning. Teaches effective literacy improvement practices that can be realistically implemented in the context of secondary teachers' many demands.
EDUC 6665
Reading Comprehension Instruction
3:3:0 On Sufficient Demand
* Prerequisite(s): Admission to Graduate Status, Admission to the School of Education Masters Degree Program, Or permission of the Dean
Focuses on reading comprehension instruction as the essence of reading. Emphasizes the theoretical foundations that support comprehension such as schema theory and the construction-integration theory. Includes the following five research-supported strategies: activating prior knowledge, questioning, analyzing text structure, creating mental or visual images and summarizing. Teaches how to offer explicit teacher-led comprehension strategy instruction that will lead to helping their students coordinate a set of comprehension strategies. Teaches how to help students construct meaning through rich discussions and interactions around a variety of text structures and genres. Prepares teachers to provide scaffolded support including demonstrations, pictures, diagrams, and collaboration with other students.

EDUC 6666
Effective Writing Instruction
3:3:0 On Sufficient Demand
* Prerequisite(s): Admission to Graduate Status, Admission to the School of Education Masters Degree Program, Or permission of the Dean
Focuses on using effective strategies for teaching writing across the curriculum and for diverse populations. Teaches application of the writing process, writing workshop, and interactive writing procedures in the classroom. Covers the development of orthographic knowledge and how to assess student work using the Qualitative Spelling Inventory and the Six-Trait Writing Model.

EDUC 6750
Energy in Elementary STEM Education
3:3:0 On Sufficient Demand
* Prerequisite(s): Admission to Graduate Status; Admission to the School of Education Masters Degree Program; Or permission of the Dean or the instructor
Prepares teachers to teach English as a second language in U.S. public schools. Includes both theoretical and applied aspects of second language learning and teaching. Provides general and special educators and second language specialists techniques, activities, strategies and resources to plan instruction for English language learners (ELLs). Emphasizes oral language development, literacy and content-area instruction for teaching K-12 students.

EDUC 6760
Force in Elementary STEM Education
3:3:0 On Sufficient Demand
Provides teachers with a deep and useful understanding of force and the nature of how students use concepts of force to make sense of phenomena across life, earth, and physical science. Explores the theory of and enhances teacher insights into: 1) how force, matter and energy interact, 2) the relationship of force to energy and interactions within fields, and 3) pedagogical content knowledge around teaching and learning about force. Also connects knowledge of concepts of force to practices in technology, engineering and mathematics, and engages participants in evaluating technology appropriate to elementary STEM instruction. Requires participants to make connections between current learning theories and methods of STEM instruction.

EDUC 6770
Matter in Elementary STEM Education
3:3:0 On Sufficient Demand
Models effective and engaging instructional practices for teaching about matter in the elementary classroom, and connects knowledge of concepts of matter to practices in technology, engineering and mathematics. Requires participants to design and implement STEM lessons that will help elementary students use content knowledge about matter to make sense of phenomena across life, earth, and physical science. Designed to help participants gain insights into: 1) how matter and energy interact, 2) the relationships of matter to forces and interactions within fields, and 3) pedagogical content knowledge for teaching about matter. Involves participants in active instructional strategies and pedagogical theories. Focuses on designing learning environments that support collaborative learning and engagement in STEM lessons.

EDUC 6780
Science and Engineering in Elementary STEM Education
3:3:0 On Sufficient Demand
Explores the nature of science using science and engineering principles, practices, and processes. Investigates applications of learning theory to Science, Technology, Engineering and Mathematics using problem-based learning experiences. Requires participants to develop teaching practices to assist them in integrating engineering practices across disciplines as they apply Utah Science Standards to elementary STEM instruction.

EDUC 6790
Technology and Problem-Based Learning in Elementary STEM Education
3:3:0 On Sufficient Demand
Engages participants in developing meaningful understandings of problem-based approaches to teaching, learning, and the integration of STEM practices across the curriculum using appropriate technology. Requires participants to demonstrate their skills through the development of problem-based, hands-on learning experiences for elementary students, based on findings from current research and theory of cognitive development. Critically evaluates technology for STEM education, based on current national guidelines.

EDUC 6910
Project I
1:0:3 Fall
* Prerequisite(s): Admission to Graduate Status Admission to the School of Education Masters Degree Program Or permission of the Dean and completion of EDUC 6200 Provides instruction regarding writing a formal classroom-based research project proposal to present to the School of Education Graduate Board. Obtain human subject clearance. Course will be graded credit/no credit.

EDUC 6920
Project II
1:0:3 Spring
* Prerequisite(s): Admission to Graduate Status Admission to the School of Education Masters Degree Program Or permission of the Dean and completion of EDUC 6910 Provides support regarding Implementation of the classroom-based applied research project. Course will be graded credit/no credit.

EDUC 693R
Directed Individual Study
5 to 3:5 to 3:0 On Sufficient Demand
* Prerequisite(s): Admission to Graduate Status; Admission to the School of Education Masters Degree Program or permission of the Dean
Provides individual instruction for Master of Education students wishing to further their understanding of the field of education. Focuses on individual research regarding instructional methods and/or assessment. May be repeated for a maximum of 6 credits. Graded Credit/No Credit.

Engineering Graphics and Design Technology (EGDT)

EGDT 1000
Introduction to Engineering Drawing and Technical Design
2:2:0 Fall, Spring
Covers basic sketching, instruments and their use, lettering, geometric construction, dimensioning, multi-view drawings, and section views, using CAD (computer-aided drafting) and traditional hand tools. Teaches introductory skills required in several first-year drafting technology courses. Software fee of $18 applies. Lab access fee of $45 for computers applies.

EGDT 1010
Electrical Electronic Drafting
3:3:0 Fall, Spring
* Prerequisite(s): EGDT 1000 or equivalent and EGDT 1040 both with a grade of C- or higher
Introduction to several types of electrical-electronic drawings such as Block, Connection, Logic, Schematic, Wiring, and Panel Diagrams. Introduction to basic DC theory, electricity and electrical terms, including Ohm’s law, Watt’s law, Logic Truth Tables, Series and Parallel Circuits, and Printed Circuit Board Design, using lectures, projects, worksheets, labs, and drawing assignments. Prepares students for advancement to EGDT 2010. Software fee of $18 applies. Lab access fee of $45 for computers applies.
Course Descriptions

EGDT 1020 3D Architectural Modeling 3:3:0 Fall, Spring, Summer
For Engineering Graphics and Design Technology and Construction Management majors. Utilizes a Building Information Modeling system (BIM) to design 3D architectural models. Covers model design theory, parametric modeling methods, generation of residential and commercial construction plans and details, building components and systems, and manipulation of model information. Software fee of $18 applies. Lab access fee of $45 for computers applies.

EGDT 1040 Fundamentals of Technical Engineering Drawing 3:3:0 Fall, Spring, Summer
Introduces fundamental technical engineering drawings, practices, and standards used by various engineering disciplines. Provides basic sketching, computer-aided drafting (CAD) tools, geometric construction, drawing layout, standard dimensioning, multi-view drawings, sectioning, plotting, checking, correcting, and other CAD and drafting skills. Software fee of $18 applies. Lab access fee of $45 for computers applies.

EGDT 1050 Introduction to 3D Printing 2:2:0 Spring
Introduces basic knowledge and skills related to 3D printing. Covers the acquisition of 3D print files and teaches basic 3D computer modeling skills using common 3D modeling software. Introduces 3D printing software and the use of 3D printers to produce prototype or functional models. Requires students to create and print projects given as class assignments and model and print a project of their choosing. Lab access fee of $45 for computers applies.

EGDT 1060 MicroStation Infrastructure Design 3:3:0 Spring
Teaches the MicroStation Open Roads drafting software system used to draw and plot various types of infrastructure projects. Demonstrates civil design skills needed in an infrastructure design workflow for a typical UDOT or civil engineering transportation project. Includes Digital Terrain Models (DTMs), horizontal and vertical alignments, plan and profiles, grading design, and utilities/ piping design and drafting. Focuses on the development of a civil engineering infrastructure plan set for a typical state highway or freeway. Software fee of $18 applies. Lab access fee of $45 for computers applies.

EGDT 1070 3 Dimensional Modeling Inventor 3:3:0 Fall, Spring
Teaches basic 3D computer modeling course which emphasizes the development of 3D machine parts, assemblies, and drawings in a constraint-based modeling environment using AutoDesk Inventor. Emphasizes the feature based design process, which simulates actual manufacturing processes with 2D sketching tools and with 3D modeling tools including extrusions, revolutions, sweeps, lofts, shells, placed features, patterns, and many others. Also teaches creation of basic multi-part assemblies, constraint-driven assembly animation, and generation of detailed production drawings. Software fee of $18 applies. Lab access fee of $45 for computers applies.

EGDT 1071 3 Dimensional Modeling--Solidworks 3:3:0 Fall, Spring, Summer
Teaches basic 3D computer modeling, which emphasizes the development of 3D machine parts, assemblies, and drawings in a constraint-based modeling environment using Solidworks. Emphasizes the feature based design process, which simulates actual manufacturing processes with 2D sketching tools and with 3D modeling tools including extrusions, revolutions, sweeps, loft, shell, placed features, patterns, and many others. Also teaches creation of basic multi-part assemblies, constraint-driven assembly animation, and generation of detailed production drawings. Software fee of $18 applies. Lab access fee of $45 for computers applies.

EGDT 1080 AutoLisp 2:2:0 On Sufficient Demand
* Prerequisite(s): EGDT 1040 with a grade of C- or higher
Covers creating and storing AutoLisp files and programs. Includes customizing the AutoCAD menu for personal and drafting use. Teaches creating new macros for speeding up repetitive drafting tasks. Software fee of $18 applies. Lab access fee of $45 for computers applies.

EGDT 1090 Introduction to Architectural Drafting and Design 2:2:0 On Sufficient Demand
Covers basic procedures used in the development of residential plans. Includes architectural drafting standards, symbols, and techniques. Uses lectures and text reading assignments related to the drawings and worksheets. Introduces students to the architectural profession and related fields. Software fee of $18 applies. Lab access fee of $45 for computers applies.

EGDT 1100 Architectural Drafting 3:3:0 Fall, Spring
* Prerequisite(s): EGDT 1020 with a grade of C- or higher
For Engineering Graphics and Design Technology majors and other students who wish to broaden their basic drafting skills in the field of residential architectural drafting. Covers procedures used in developing a complete set of residential plans. Includes architectural drafting standards and code requirements. Reinforces math skills using dimensioning and estimating exercises. Uses lectures and text reading assignments with related worksheets and drawings. Prepares students for advancement into EGDT 2100 and for entry-level employment in related fields. Software fee of $18 applies. Lab access fee of $45 for computers applies.

EGDT 1105 Electrical Drafting 3:3:0 Fall, Spring
* Prerequisite(s): EGDT 1020 with a grade of C- or higher
Covers more advanced principles of electrical drafting and design. Includes systems of equations, powers and roots, trigonometry functions, vectors, polynomials, quadratic equations, exponents and radicals, and circle concepts.

EGDT 1110 Mechanical Drafting 3:3:0 Fall, Spring
* Prerequisite(s): EGDT 1070 or EGDT 1071, both with a grade of C- or higher

EGDT 1200 Technical Math Algebra 3:3:0 Fall, Spring
* Prerequisite(s): MAT 0920 or equivalent with "C-" grade or better or appropriate test scores
Covers the basic principles of algebra, geometry, and trigonometry as they relate to problem solving on the job. Includes solving equations, percent, proportion, variation, calculator operations, measurements, formula rearrangement, functions and graphs, and solving right and oblique triangles.

EGDT 1600 Technical Math Geometry Trig 3:3:0 Fall, Spring
* Prerequisite(s): MAT 0920 or equivalent course with a grade of C- or higher
Covers more advanced principles of algebra, geometry, and trigonometry as they relate to problem solving on the job. Includes systems of equations, powers and roots, trigonometry functions, vectors, polynomials, quadratic equations, exponents and radicals, and circle concepts.

EGDT 1600 Technical Math Algebra 3:3:0 Fall, Spring
* Prerequisite(s): MAT 0920 or equivalent with "C-" grade or better or appropriate test scores
Covers the basic principles of algebra, geometry, and trigonometry as they relate to problem solving on the job. Includes solving equations, percent, proportion, variation, calculator operations, measurements, formula rearrangement, functions and graphs, and solving right and oblique triangles.
EGDT 1720 Architectural Rendering
3:3:0 Fall, Spring, Summer
Discusses how Architectural Rendering plays an important role in the way we view and present the world around us, including: elements in the physical and natural world, as well as how the influences human cultures have on our society through the construction of buildings, structures, and other works of man. Introduces the necessary skills and practices required in architectural rendering theory and presentation. Develops skills in perspective, layout, shading, color theory and presentations of interior and exterior architectural rendering projects. Course fee of $10 applies.

EGDT 2010 Advanced Electrical CAD
2:2:0 On Sufficient Demand
* Prerequisite(s): EGDT 1010 and EGDT 1040, with "C-" grade or higher
For second year Drafting Technology majors. Concentrates on the completion of electrical-electronic diagrams using CAD procedures. Those layout procedures studied will include logic and schematic diagrams. Printed wiring board and AC motor control wiring diagram layout from reference schematics will also be covered. Includes a basic introduction to AC electrical theory including inductance and capacitance and their relationship to AC motors and motor controls. Completers should have entry-level skills for an electrical-electronic drafting position. Software fee of $18 applies. Lab access fee of $45 for computers applies.

EGDT 2020 Descriptive Geometry
3:3:0 Fall
* Prerequisite(s): EGDT 1000 or equivalent and EGDT 1040 both with a grade of C- or higher
Required for Engineering Graphics and Design Technology majors. Elective for engineering majors or others interested in graphical problem solving. Teaches advanced orthographic projection principles used to render view of objects from any conceivable direction. Instructs students in the creation of views needed to solve problems graphically rather than mathematically. Solutions include true length and angle, true size and shape, clearance, bearing, slope and grade, intersections, shortest distance, dihedral angle, and revolution. Use of accurate scaling techniques is reinforced. Problems are completed either manually or using CAD. Software fee of $18 applies. Lab access fee of $45 for computers applies.

EGDT 2040 Piping Drafting
2:2:0 Fall, Spring
* Prerequisite(s): EGDT 1040 with a grade of C- or higher
Includes single-line and double-line pipe symbols. Covers both isometric and orthographic projection. Studies piping connections such as welded, screwed, soldered, flanged, and bell and spigot. Uses manufacturer’s and reference materials specifications. Includes information on copper tubing and brass fittings. Uses hydraulic theory and formulas. Also uses computer (CAD) to develop drawings. Software fee of $18 applies. Lab access fee of $45 for computers applies.

EGDT 2050 Plates Layout
2:2:0 Spring
* Prerequisite(s): EGDT 2020 with a grade of C- or higher
A continuation of Descriptive Geometry (EGDT 2020). Patterns are made of rolled or folded surfaces such as bins, hoppers, duct work, vent pipes, tanks, storage containers, etc. Patterns are also made for pipe end cuts, pipe intersections, transition pieces and twist angles. Emphasizes three types of pattern development: (1) parallel line, (2) radial line, (3) triangulation. Includes practical problems in finding the line of intersection between surfaces and drawing patterns. Software fee of $18 applies. Lab access fee of $45 for computers applies.

EGDT 2100 Advanced Architectural
3:3:0 Fall, Spring
* Prerequisite(s): EGDT 1100 and EGDT 1020 both with a grade of C- or higher
Covers the layout, detailing, dimensioning, and room identification of a commercial floor plan in 3D Architectural software. Includes completing a door and window schedule, a furnishing plan, a reflected ceiling plan, building sections, a roof plan, and exterior elevations. Covers the sketching of common details along with discussions on the various methods and materials used in commercial construction. Software fee of $18 applies. Lab access fee of $45 for computers applies.

EGDT 2200 Advanced Mechanical
3:3:0 Spring
* Prerequisite(s): EGDT 1200 and (EGDT 1070 or EGDT 1071) all with a grade of C- or higher
Employs 3D modeling software to enhance design processes, including sketching, parametric modeling, 3D assemblies, and producing 2D working drawings. Included are sheet metal, structural parts, mass property, and stress analysis. Software fee of $18 applies. Lab access fee of $45 computers applies.

EGDT 2300 Advanced Structural CAD
3:3:0 Spring
* Prerequisite(s): EGDT 1300 and (MATH 1060 or EGDT 1610) both with a grade of C- or higher
A second year class for students who have completed first year structural drafting and want to enhance their knowledge of structural steel detailing. Includes the proper views and dimensioning practices for columns, stairways, handrails, cross-bracing, anchor bolt layout, erection drawing, and field bolt lists. Completers should be ready for entry-level employment as a structural steel detailer for small detailing companies or large construction companies. Software fee of $18 applies. Lab access fee of $45 computers applies.

EGDT 2310 Structural Steel Modeling
3:3:0 Spring
* Prerequisite(s): EGDT 1040 and EGDT 1300 both with a grade of C- or higher
Teaches Tekla Structures modeling software. Includes modeling of structural steel buildings, hoppers, stairs, piping, and miscellaneous steel projects. Prepares students for detail and erection drawings which are produced for fabrication and erection of structural steel projects. Software fee of $18 applies. Lab access fee of $45 computers applies.

EGDT 2400 Surveying Applications and Field Techniques II
3:3:0 Fall
* Prerequisite(s): EGDT 1040 or equivalent, EGDT 1400 and (EGDT 1600 or MATH 1060) both with a grade of C- or higher
Covers advanced concepts in the U.S. Public Land and State Plane Coordinate systems. Utilizes advanced surveying instruments such as total station, automatic level, GPS equipment, and data collectors. Covers advanced leveling procedures, volume computations, monumentation, mapping, boundary surveys, and route surveys. Features the writing of legal property descriptions. Builds upon knowledge of safe surveying procedures. Includes use of surveying calculation softwares. Covers horizontal curve calculations and highway staking. Completers should be able to work as an instrument person on survey crews and also prepare the drawings related to the surveys. Lab access fee of $45 for computers applies Software fee of $18 applies. Course fee of $12 for materials applies.

EGDT 2500 3 Dimensional Modeling--Civil 3D
3:3:0 Fall
* Prerequisite(s): EGDT 1040, EGDT 1400
Describes design workflows of typical civil engineering firms. Employed functions of Autodesk Civil 3D application software for civil design and modeling. Includes Digital Terrain Models (DTM’s), street alignments, plan and profiles, grading, and utilities/piping design and drafting. Develops a full set of civil engineering improvement plans for a residential subdivision. Software fee of $18 applies. Lab access fee of $45 for computers applies.

EGDT 2600 Statics
3:3:0 Fall, Spring
* Prerequisite(s): MATH 1060 or EGDT 1610 both with a grade of C- or higher
For students preparing for the second year design classes. Covers the basic principles of statics, coplanar force systems, coplanar-concurrent force systems, and noncoplanar-concurrent force systems. Prepares students for entry-level employment as a design drafter in structural, architectural, and mechanical drafting.
Course Descriptions

EGDT 2610
Strength of Materials
3:3:0  Fall, Spring

* Prerequisite(s): EGDT 2600 with a grade of C- or higher

Studies strength of materials dealing with direct stress in compression, tension, and shear. Also covers engineering materials and their properties dealing with stress and deformation, centroids, moments of inertia, section modules, tension and the calculations of beams, girders and columns under various loading conditions. Includes calculations to determine the deflection in beams and girders under various load conditions.

EGDT 2710
Special Problems Mechanical
2:2:0  On Sufficient Demand

* Prerequisite(s): EGDT 2200 with a grade of C- or higher

An advanced course in mechanical layout and design using solid modeling techniques. Students, with approval, may design and layout projects of their choice. Final details are fabricated in the machine shop. Lab access fee of $45 for computers applies.

EGDT 2720
Special Problems Surveying
2:2:0  On Sufficient Demand

* Prerequisite(s): EGDT 2400 and (MATH 1060 or EGDT 1610) both with a grade of C- or higher

For people seeking a surveyor's license, civil engineering, drafting and construction management majors. Covers instrument maintenance and calibration, basic photogrammetry and surveying for photogrammetry, mine surveying, construction surveying, resection, and legal aspects of land surveying. Completers should have job skills for surveying and civil technology. Software fee of $18 applies. Lab access fee of $45 for computers applies.

EGDT 2730
Special Problems Civil Drafting
2:2:0  On Sufficient Demand

* Prerequisite(s): EGDT 1400 with a grade of C- or higher

For people seeking a surveyor's license or intended Civil Engineering and Engineering Graphics and Design majors desiring a civil drafting emphasis. Covers preparation of drawings associated with surveying and civil engineering and design. Projects include: property surveys and subdivision design, geotechnical investigations, wastewater treatment, storm drains, highway design, topographic mapping, earthen and concrete dams, and NICET certifications. Software fee of $18 applies. Lab access fee of $45 for computers applies.

EGDT 2740
Special Problems Architectural
2:2:0  On Sufficient Demand

* Prerequisite(s): EGDT 1100 with a grade of C- or higher

A special problems course in architectural drafting. Teaches how to layout and detail a floor plan using a 3D modeling package. Software fee of $18 applies. Lab access fee of $45 for computers applies.

EGDT 2750
Special Problems Architectural Rendering
2:2:0  On Sufficient Demand

* Prerequisite(s): EGDT 2600 with a grade of C- or higher

For students who wish to develop additional architectural rendering skills to enhance their job performance. Covers theory of perspective, laying out a building perspective from blueprints, inking techniques to develop a finished rendering, and quick coloring methods for ink renderings. Course fee of $10 for materials applies.

EGDT 2760
Special Problems Structural
2:2:0  On Sufficient Demand

* Prerequisite(s): EGDT 1000 with a grade of C- or higher

Provides opportunities for in-depth study in structural steel drafting. Teaches beam sizing and selection for design drawing. Requires a special class project with complete objectives and goals outlined and presented to the instructor for approval. Emphasizes project documentation. Computer graphics are an important part of this course. Software fee of $18 applies. Lab access fee of $45 for computers applies.

EGDT 2780
Special Problems Electrical
2:2:0  On Sufficient Demand

* Prerequisite(s): EGDT 1010 with a grade of C- or higher

For students who wish to advance beyond EGDT 2010 through the development of an outside project which incorporates advanced theory and drawing procedures. The instructor will review project outline to ensure that it meets course objectives and will monitor student progress, establishing progressive goals. Software fee of $18 applies. Lab access fee of $45 for computers applies.

EGDT 281R
Cooperative Work Experience
1 to 8:1 to 8:0  Fall, Spring, Summer

* Prerequisite(s): EGDT 1010, EGDT 1040, EGDT 1070 or EGDT 1071, EGDT 1020, EGDT 1100, EGDT 1200, EGDT 1300, and EGDT 1400, all with a C- or higher

For drafting students to receive actual on-the-job work experience. Requires work assignments to be set up with businesses and industries who are involved in drafting and design, construction, or manufacturing. Eight credits may apply toward graduation. May be graded credit/no-credit.

EGDT 285R
AEC Design Lecture Series
5.5:0  Fall

Provides student opportunities to network and collaborate with industry professionals. Provides exposure to career options within the architecture and other related design industries. Emphasizes the importance of professional ethics and communicating with others.

EGDT 2860
Cooperative Correlated Instruction
5.5:0  Spring

SkillsUSA is a first year class for Engineering Graphics and Design Technology majors. Includes leadership training, parliamentary procedure, job interview skills, prepared speaking, extemporaneous speaking, and organizational skills. Upon completion, the student should understand the SkillsUSA organization and how it helps to build leadership skills.

EGDT 2870
Portfolio and Career Preparation
1:1:0  Fall, Spring

Required for Engineering Graphics and Design Technology majors. Teaches necessary job acquisition skills. Instructs students in the job search process, including production of typical types of correspondence, job interview techniques, and creation of presentation-quality portfolios. Correspondence includes letters of application, resumes, follow-up letters, letters of acceptance and rejection, and references. Interview techniques include interview preparation, appearance, and question/answer techniques. Final project is portfolio of samples of work in all areas of Engineering Graphics & Design Technology learned for the degree. Software fee of $18 applies. Lab access fee of $45 for computers applies.

EGDT 3450
Civil Design Systems
3:3:0  Spring

* Prerequisite(s): EGDT 2500, EGDT 3500, and University Advanced Standing

Teaches theories, principles, and practices of traffic systems design, gravity and pressure piping systems design, surface grading systems, and hydrology. Explores various computational and design software used to develop finished construction drawings for public and private infrastructure projects.

EGDT 3500
Advanced Civil Drafting and Design
3:3:0  Spring

* Prerequisite(s): [(EGDT 1040 or EGDT 1060) and EGDT 1400 each with a grade of C- or higher] and University Advanced Standing

Covers the analysis, design and preparation of drawings associated with the surveying and civil engineering fields. Exposes the student to the NICET certification process. Focuses on GPS and GIS technologies to acquire design data. Develops a working knowledge of the Utah Department of Transportation Standard Plans and Specifications. Projects include: property surveys, topographic mapping, subdivision design, geotechnical investigations, Water and Wastewater Treatment Plants, storm drainage, highway design, traffic flow diagrams, and earthen and concrete dams. Lab access fee of $45 for computers applies.

English Basic Composition (ENGH)

ENGH 0890
Literacies and Composition Across the University
5:5:0  Fall, Spring, Summer

* Prerequisite(s): Appropriate placement scores

Teaches reading-based writing (reading-to-write). Helps students bridge the gap between personal and academic writing and practice ways their personal literacies, experiences, opinions, and observations extend to particular academic conversations. Emphasizes extensive reading throughout the semester using models for organization, style and primary sources for classroom discussions and essay content. Lab access fee of $15 for computers, software applies.
ENGL 1010	CC	Introduction to Academic Writing	3:3:0	Fall, Spring, Summer
* Prerequisite(s): Appropriate test scores taken within the last five years.
Teaches rhetorical knowledge and skills, focusing on critical reading, writing, and thinking. Introduces writing for specific academic audiences and situations. Emphasizes writing as a process through multiple drafts and revisions. May be delivered hybrid and/or online. Lab access fee of $7 for computers applies.

ENGL 101H	CC	Intermediate Writing Academic Writing and Research	3:3:0	Fall, Spring, Summer
* Prerequisite(s): Appropriate ACT test scores taken within the last three years or completion of ENGL 1010 or ENGL 101H with a grade of C- or higher, or ENGL 1005 with a grade of C or higher.
Emphasizes academic inquiry and research. Explores issues from multiple perspectives. Teaches careful reasoning, argumentation, and rhetorical awareness of purpose, audience, and genre. Focuses on critically evaluating, effectively integrating, and properly documenting sources. May be delivered hybrid and/or online. Lab access fee of $7 for computers applies.

ENGL 201H	CC	Intermediate Writing Humanities/Social Sciences	3:3:0	Fall, Spring
* Prerequisite(s): Appropriate ACT test scores taken within the last three years or completion of ENGL 1010 or ENGL 101H with a grade of C- or higher, or ENGL 1005 with a grade of C or higher.
Emphasizes academic inquiry and research in the humanities and social sciences. Explores issues from multiple perspectives. Teaches careful reasoning, argumentation, and rhetorical awareness of purpose, audience, and genre. Focuses on critically evaluating, effectively integrating, and properly documenting sources. In addition to major essay assignments, may include in-class writing and collaboration, an annotated bibliography, oral presentations, and portfolios. Honors sections challenge the student to take more qualitatively substantive and/or advanced approaches to course content and assignments. Lab access fee of $7 for computers applies.

ENGL 2030	HH	Writing for Social Change	3:3:0	Fall
* Prerequisite(s): ENGL 2010 with a grade of C- or higher
Introduces theories and strategies of persuasion to help students understand and use basic tools of civic literacy, including critical thinking, reading, and writing. Uses writing to engage with complex social issues. Includes analysis and production of texts such as letters to the editor, opinion-editorials, writing for non-profit organizations, and political speeches.

ENGL 2050	HH	Editing	3:3:0	Fall, Spring
* Prerequisite(s): ENGL 1010 or ENGL 1005
Covers the essentials of editing manuscripts for publication. Provides students with the necessary knowledge of punctuation, grammar and usage as well as the symbols and conventions of editing. Lab access fee of $12 for computers applies.

ENGL 2120	HH	Fantasy Literature	3:3:0	Fall
* Prerequisite(s) or Corequisite(s): ENGL 1010 or ENGL 1005
Surveys major fantasy authors from the 19th century to the present. Teaches key elements of the genre, including world building, character, and significant themes. May include a creative writing component.

ENGL 2130	HH	Science Fiction	3:3:0	Spring
* Prerequisite(s) or Corequisite(s): ENGL 1010 or ENGL 1005
Provides a chronological survey of major Science Fiction authors from Mary Shelley (1818) to the present. Emphasizes the importance of character, setting, plot, and scientific ideas in analyzing literature. Uses discussion, lectures, videos, and films to help students increase appreciation for the literary genre and its works. Completers will have a better understanding of science fiction, plus enhanced writing skills.
ENGL 2250  
Creative Process and Imaginative Writing  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): ENGL 1010 or ENGH 1005 with a grade of C- or higher

Introduces students to the basic literary elements of writing short fiction, drama, creative non-fiction, poetry, or combinations of these. Uses readings from a wide range of contemporary authors, guest speakers, workshops, and student writing to enhance the techniques and aesthetics of creative writing. Lab access fee of $7 for computers applies.

ENGL 225H  
Creative Process and Imaginative Writing  
3:3:0  
Fall, Spring  
* Prerequisite(s): ENGL 1010 or ENGH 1005 with a grade of C- or higher

Introduces students to the basic literary elements of writing short fiction, drama, creative nonfiction, poetry, or combinations of these. Uses readings from a wide range of contemporary authors, guest speakers, workshops, and student writing to enhance the techniques and aesthetics of creative writing. Smaller class size to facilitate increased student interaction and inquiry. Lab access fee of $7 for computers applies.

ENGL 2300  
Shakespeare  
3:3:0  
Fall  
* Prerequisite(s) or Corequisite(s): ENGL 1010 or ENGH 1005

For General Education students and English majors. Introduces several Shakespeare plays with particular attention to analysis and critical review of Shakespeare's works. Teaches comprehension of Shakespeare's works and their continued cultural stature. Explores aspects of dramatic performance and a selection of Shakespeare's poetry. May include discussion, lectures, films, papers, examinations, and attending or performing in plays or scenes from plays. Complexes should be able to interpret Shakespearean literature and explain the relationship of Shakespeare's works to the world of today.

ENGL 230H  
Shakespeare  
3:3:0  
Fall  
* Prerequisite(s): ENGL 1010 or ENGH 1005

For General Education students and English majors. Introduces several Shakespeare plays with particular attention to analysis and critical evaluation of Shakespeare's works. Teaches comprehension of Shakespeare's works and their continued cultural stature. Explores aspects of dramatic performance and a selection of Shakespeare's poetry. May include discussion, lectures, films, papers, examinations, and attending or performing in plays or scenes from plays. Complexes should be able to interpret Shakespearean literature and explain the relationship of Shakespeare's works to the world of today.

ENGL 2510  
American Literature before 1865  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s) or Corequisite(s): ENGL 1010 or ENGH 1005

Surveys American essays, letters, biographies, fiction, and poetry up to 1865. Studies literature as a reaction to American and world events and to the general condition of the American people through discussion, lecture, videos, and writing.

ENGL 2520  
American Literature after 1865  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s) or Corequisite(s): ENGL 1010 or ENGH 1005

Surveys American essays, letters, biographies, fiction, drama, and poetry from 1865 to the present. Studies literature as a reaction to American and world events and to the general condition of the American people through discussion, lecture, videos, and writing.

ENGL 2600  
Critical Introduction to Literature  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): Completion of ENGL 2010 with a grade of C- or higher

Introduces key literary terms and engages close reading techniques. Includes lectures, screenings, student presentations, analyses and written reports, exams, and a final essay in MLA format and documentation.

ENGL 2610  
British Literature before 1800  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s) or Corequisite(s): ENGL 1010 or ENGH 1005

Presents a survey of British literature with emphasis on the most important works of the best writers from 450-1800 A.D. Introduces Old English, Middle English, Renaissance, and Neo-Classical British literature. Uses discussion, lecture, films, videos, tests, and papers.

ENGL 2620  
British Literature after 1800  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s) or Corequisite(s): ENGL 1010 or ENGH 1005

Introduces British Romanticism, Victorianism, Modernism, and post-Modernism. Emphasizes important works of the best writers from approximately 1800 to the present. May include discussion, lecture, readings, films, videos, tests, and papers.

ENGL 2730  
Introduction to Gender Studies  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): ENGL 2010

Analyzes gender from an interdisciplinary model. Explores such issues as the definition of masculinity and femininity, the function of gender roles and stereotypes, and what it means to have sexed bodies and minds. Analyzes questions of gender through the different frameworks of literature, anthropology, sociology, history, biology, psychology, philosophy, and theoretical perspectives.

ENGL 276R  
Themes in Literature  
3:3:0  
Fall  
* Prerequisite(s): ENGL 1010 or ENGH 1005

Analyzes specific themes/topics in literature (generic or other). Requires reading and study of representative works. Includes short papers, tests and presentations. Possible course themes are: horror, fantasy, nonfiction, detective fiction, and western American literature, among others. May be repeated for up to 6 credits toward graduation.

ENGL 281R  
Internship  
1 to 8:1 to 8:0  
Fall, Spring, Summer  
* Prerequisite(s): Approval of Cooperative Coordinator

Designed for English majors. Provides experience in the student's major. Students who receive credit for an internship must establish learning objectives with their Faculty Sponsor at the beginning of their internship and reflect on their learning through academic work (i.e. papers, journals, etc.). Students are required to submit an evaluation of their experience at the end of the semester. Credit is determined by the number of hours a student works during the semester. May be repeated for a maximum of 8 credits toward graduation. May be graded credit/no credit.

ENGL 290R  
English Scholarly Forum  
1:1:0  
On Sufficient Demand  
* Prerequisite(s): ENGL 2010

Requires attendance at academic campus events of student's choice (conferences, lectures, colloquia, symposia, workshops, reading groups, etc.) and composing reflective, written assignments. Includes informal meetings with instructor at the beginning and end of the course. May be taken three times for credit.

ENGL 299R  
Independent Study  
.5 to 3:3:0 to 12  
On Sufficient Demand

Provides independent study as directed in reading and individual projects at the discretion and approval of the Dean and/or Department Chair. Limited to three credits toward graduation with an AS/AA degree.

ENGL 3000  
Professional Considerations for the English Major  
1:1:0  
Fall, Spring  
* Prerequisite(s): Completion of ENGL 2010 with a grade of C- or higher and University Advanced Standing

Discusses various career choices for English majors. Familiarizes students with curricular emphases and department faculty. Emphasizes internships and other available activities. Features a regular rotation of English faculty guest speakers.

ENGL 3010  
Rhetorical Theory  
3:3:0  
Fall, Spring  
* Prerequisite(s): ENGL 2010 with a grade of C- or higher and University Advanced Standing

Considers prominent theories of rhetoric and accompanying methods for the production of texts in various contexts, encouraging adopting, amending, and/or developing hybrid theories of rhetoric.
ENGL 3020  
Modern English Grammars  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): ENGL 2010 with a grade of C- or higher and University Advanced Standing  
Explores language structures, discovering connections between grammar (linguistic structure) and language uses (discourse and/or rhetoric). Includes the study of and practice in informed decision-making in the process of developing language structures (grammatical choices) appropriate to a particular rhetorical aim.

ENGL 3030  
Writing in the Disciplines  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): ENGL 2010 with a grade of C- or higher and University Advanced Standing  
Focuses on analysis and production of discipline-specific texts. Teaches rhetorical knowledge and skills and emphasizes summarizing, paraphrasing, quoting, critical analysis, synthesizing ideas, and interrogating multiple perspectives. Includes written, oral, visual, and other modes of communication. Lab access fee of $7 for computers applies.

ENGL 3040  
History of the English Language  
3:3:0  
Fall  
* Prerequisite(s): ENGL 2010 with a grade of C- or higher and University Advanced Standing  
Focuses on the origins of our language and how it has grown and continues to change. Introduces historical origins of the English language and changes that produced our present speech in its many dialects, creoles, and pidgins. Combines linguistic and rhetorical histories.

ENGL 3050  
Advanced Editing and Design for Print  
Media  
3:3:0  
Fall, Spring  
* Prerequisite(s): ENGL 2010 with a grade of C- or higher and University Advanced Standing; ENGL 2050 recommended  
Refines student editing, design, and publishing skills. Provides students with the opportunity to take manuscripts from editing to press-ready. Teaches industry standards for current publishing tools. Includes projects such as designing books, marketing literature, and corporate identities. Covers design, typography, and pre-press issues as they relate to writing and editing documents. Recommended for students involved with student publications, including journals and campus newspaper.

ENGL 3060  
(Cross-listed with: HUM 3060)  
Visual Rhetoric  
3:3:0  
Fall  
* Prerequisite(s): ENGL 2010 with a grade of C- or higher and University Advanced Standing  
Investigates the growing academic and cultural interest in the rhetorical nature of visual texts. Teaches critical thinking about the consumption and productions of images and multimodal texts. Explores visual grammars and other theories of visual rhetoric as articulated by contemporary image, language, and scholars of rhetoric. Encourages the development of theoretical and practical knowledge through reading, discussion, and analysis as well as through the production of visual texts and written work.

ENGL 3070  
Public Rhetorics  
3:3:0  
Fall, Spring  
* Prerequisite(s): ENGL 2010 with a grade of C- or higher and University Advanced Standing  
Prerequisite(s) or Corequisite(s): ENGL 3010  
Investigates the structure and nature of rhetorical identities and arguments in public discourse. Introduces genres of public discourse to examine their rhetorical construction and circulation to mass audiences. Explores and critiques theories of democratic deliberation. Studies texts in media such as advertising, blogs, film, social networking venues, television, and websites through specific theories of public rhetoric. Examines arguments regarding the complex nature of public ethos. Includes reading, discussion, analysis, research, and production of public rhetorics through a variety of media and methods.

ENGL 3085  
Rhetorical Approaches to Popular Culture  
3:3:0  
Spring  
* Prerequisite(s): ENGL 2010 with a grade of C- or higher and University Advanced Standing  
Prerequisite(s) or Corequisite(s): ENGL 3010  
Explores popular culture as a contested site of meaning-making, identity-formation, and shared experiences. Reviews historical theories that construct the status of the popular or the mainstream versus the comparative labels of the "highbrow" and the "subcultural." Analyzes how media access, socioeconomic context, cultural movements, and generational differences formulate taste preferences and different styles of engagement with popular texts. Focuses on the rhetorical practices of pop culture creation and consumption with an emphasis on personal and political ramifications. Examines texts that are industry-produced and texts created through the practices of fans, critics, and theorists.

ENGL 3090  
Academic Writing for English Majors WE  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): ENGL 2600 with a grade of C- or higher and University Advanced Standing  
Corequisite(s): ENGL 3000 Recommended  
Centers on scholarly research and writing in fields related to English Studies, drawing on students’ areas of focus. Emphasizes analysis, rhetorical theories of writing, development, style, oral presentations, and primary and secondary research techniques. Prepares students to extend their abilities with researched writing in other upper-division courses and teaches students advanced scholarly attitudes toward researched writing. Lab access fee of $7 for computers applies.

ENGL 3110  
(Cross-listed with: COMM 3110, THEA 3110)  
Non Fiction Cinema History  
3:2:3  
On Sufficient Demand  
* Prerequisite(s): ENGL 2150 and University Advanced Standing  
Surveys the history of non-fiction/documentary film from 1896 to the present. Includes study of early pioneers from Flaherty's NANOOK OF THE NORTH to the current trend of reality television and popular documentaries. Some films screened may carry an "R" rating.

ENGL 314G  
(Cross-listed with: COMM 314G, THEA 314G)  
Global Cinema History  
3:2:3  
On Sufficient Demand  
* Prerequisite(s): (ENGL 2150 or THEA 1023) and University Advanced Standing  
Studies the evolution of global film styles, movements, stars, and genres with a focus on international cinema chronologies outside the United States. Some films screened may be considered controversial and carry an "R" rating.

ENGL 3150  
(Cross-listed with: CINE 3150, COMM 3150)  
Cinema and Television Theory  
3:3:0  
Spring  
* Prerequisite(s): CINE 2150 or ENGL 2150 and University Advanced Standing  
Examines major theoretical approaches to the screen arts. Explores how cinema and television reflect and are created by historical and contemporary cultural contexts. Includes the study of various approaches such as fan studies, spectatorship, stars, authorship, genre, long-form narrative and production. Includes lecture, film and media screenings, and critical discussions of assigned readings.

ENGL 3300  
Collaborative Communication for Technology Professions  
3:3:0  
Fall  
* Prerequisite(s): ENGL 2010 with a grade of C- or higher and University Advanced Standing  
Teaches technical communication skills and methodologies in demand by business and industry. Provides collaborative experience in the development of a professional, team-oriented project, using suitable technology. Integrates textual and visual rhetorics through effective design practices. Emphasizes primary and secondary research as well as usability testing. Lab access fee of $12 for computers applies.

ENGL 3320  
Grant and Proposal Writing  
3:3:0  
Fall  
* Prerequisite(s): ENGL 2010 with a grade of C- or higher and University Advanced Standing  
Introduces students to private and governmental funding sources. Demonstrates successful proposal and grant writing strategies. For interested upper-division students and Technical Writing emphases and minors. Lab access fee of $12 for computers applies.

ENGL 3340  
Digital Document Design  
3:3:0  
Fall  
* Prerequisite(s): ENGL 2010 with a grade of C- or higher and University Advanced Standing  
Teaches web-based document design and other digital genres. Introduces HTML, CSS, and industry standard tools. Emphasizes rhetorical differences between digital and print documents and focuses on the collaborative and viral nature of web texts. Lab access fee of $12 for computers applies.
Course Descriptions

ENGL 3420
Intermediate Fiction Writing
3:3:0 Fall, Spring
* Prerequisite(s): [(ENGL 2250 or ENGL 225H) and ENGL 2600 each with a C- or higher] and University Advanced Standing

Implements a variety of intermediate techniques for generating, writing, and revising stories for publication and public readings, along with readings in theory and fiction. Lab access fee of $7 for computers applies.

ENGL 3430
Play Writing for Creative Writers
3:3:0 Spring Even Year
* Prerequisite(s): [(ENGL 2250 or ENGL 225H) and ENGL 2600 each with a C- or higher] and University Advanced Standing

Teaches the skills and processes of a variety of styles of playwriting presented through textual analysis of written plays and play attendance. Includes workshops, lectures, discussions, and a final revised portfolio of original dramatic works.

ENGL 3440
Intermediate Poetry Writing
3:3:0 Fall, Spring
* Prerequisite(s): [(ENGL 2250 or ENGL 225H) and ENGL 2600 each with a C- or higher] and University Advanced Standing

Provides practices and techniques for generating, writing, and revising original poetry. Includes poetry readings, memorizations, and submission of original poetry to literary journals. Focuses on contemporary poetry and critical theories associated with contemporary poetry.

ENGL 3450
Intermediate Creative Nonfiction Writing
3:3:0 Fall, Spring
* Prerequisite(s): [(ENGL 2250 or ENGL 225H) and ENGL 2600 each with a C- or higher] and University Advanced Standing

Provides intermediate instruction for writing nonfiction prose. Explores and provides practice in various categories of nonfiction, including, for example, narrative, memoir, interpretive reporting, found text, and experimental forms. Addresses the stylistic and compositional challenges of transforming experience into writing.

ENGL 3460
Wilderness and Environmental Writing
3:3:0 Fall Even Year
* Prerequisite(s): ENGL 2010 with a grade of C- or higher and University Advanced Standing

Introduces students to the literary conversation of appreciation and responsibility for our natural world and teaches them how to engage meaningfully in that conversation. Requires (1) extensive readings in literature of the natural world, including scientific, polemic, creative non-fiction, and fiction writing modes bearing on environmental stewardship and (2) a writing portfolio that includes polemic, creative non-fiction, fiction, and poetry. Includes discussion of assigned readings and workshop reading of student manuscripts. Requires overnight wilderness field trips; students with disabilities will be accommodated on field trips.

ENGL 3510
Early American Literature
3:3:0 Fall
* Prerequisite(s): ENGL 2010 and (ENGL 2510 or ENGL 2520), both with a grade of C- or higher and University Advanced Standing

Examines selected authors and themes in American literature from its beginnings through the 1820s. Identifies texts within their cultural and historical contexts. Explores multiple genres, including autobiography, essay, poetry, drama, and fiction.

ENGL 3520
Literature of the American Renaissance
3:3:0 Fall, Spring
* Prerequisite(s): ENGL 2010 and (ENGL 2510 or ENGL 2520), both with a grade of C- or higher and University Advanced Standing

Studies American literary works during the Romantic period, roughly 1830-1870. Includes study of authors such as Hawthorne, Melville, Poe, Emerson, Thoreau, Douglass, Jacobs, Stowe, Whitman, and Dickinson. Identifies the contribution of both canonical and lesser-known authors within cultural and historical contexts.

ENGL 3525
American Literary Realism and Naturalism
3:3:0 Spring
* Prerequisite(s): ENGL 2010 and (ENGL 2510 or ENGL 2520), both with a grade of C- or higher and University Advanced Standing

Studies literature associated with the American realist and naturalist movements between the Civil War and the early twentieth century, by authors such as Mark Twain, Henry James, Kate Chopin, Theodore Dreiser, and Edith Wharton. Explores aesthetic and philosophical issues encountered by authors who attempt to depict social and natural environments realistically.

ENGL 3530
Modern American Literature
3:3:0 Fall, Spring
* Prerequisite(s): ENGL 2010 and (ENGL 2510 or ENGL 2520), both with a grade of C- or higher and University Advanced Standing

Studies modern American literature (c. 1900-1945) in relation to intellectual and historical developments. Emphasizes important works by major writers responding to radical changes in America brought on by shifting demographics, artistic experimentation, and world war.

ENGL 3540
Contemporary American Literature
3:3:0 Fall, Spring
* Prerequisite(s): ENGL 2010 and (ENGL 2510 or ENGL 2520), both with a grade of C- or higher and University Advanced Standing

Studies significant authors, themes, and topics in American literature (c. 1945 to present) in relation to historical and intellectual developments and contemporary literary theory. Explores multiple genres, including fiction, poetry, drama, and film.

ENGL 357G
Native American Literature
3:3:0 Fall
* Prerequisite(s): ENGL 2010 and University Advanced Standing

Surveys a wide range of Native American literature. Examines the cultures and identities of Native Americans through the study of literary texts including mythology and works by contemporary writers such as N. Scott Momaday, Leslie Marmon Silko, Louise Erdrich, and Sherman Alexie, among others.

ENGL 3610
Medieval Literature
3:3:0 Spring
* Prerequisite(s): ENGL 2010 and (ENGL 2610 or ENGL 2620), both with a grade of C- or higher and University Advanced Standing

Covers major authors, works, and themes from Anglo Saxon, Middle English, up to the Tudor period (750 to 1485 AD). Studies selected authors such as “Beowulf” poet, Julian of Norwich, Langland, Margery Kempe, Malory, Marie De France, the “Pearl” poet, and the Wakefield Master. Includes brief discussion of Chaucer. Analyzes relevant cultural, philosophical, and historical aspects of the period.

ENGL 3620
Tudor British Literature
3:3:0 Fall
* Prerequisite(s): ENGL 2010 and (ENGL 2610 or ENGL 2620), both with a grade of C- or higher and University Advanced Standing

Explores major authors, works, and themes from the Tudor period (1485-1603). Includes works by authors such as Surrey, Wyatt, Skelton, Moore, Marlowe, Sydney, Spenser, Queen Elizabeth I, Raleigh, Mary Herbert, Shakespeare, Drayton, Campion, Nashe, and others. Analyzes relevant cultural, philosophical, and historical aspects of the period.

ENGL 3630
Stuart British Literature
3:3:0 Spring
* Prerequisite(s): ENGL 2010 and (ENGL 2610 or ENGL 2620), both with a grade of C- or higher and University Advanced Standing

Explores major authors, works, and themes from the Stuart period (Jacobean, English Civil War, and Restoration eras). Studies selected authors such as Shakespeare, Jonson, Lanyer, Donne, Wroth, Herbert, Herrick, Vaughan, Marvell, Cavendish, Philips, Milton, Behn, and Dryden. Discusses relevant cultural, philosophical, and historical aspects of the period.

ENGL 3640
Restoration and 18th Century British Literature
3:3:0 Fall
* Prerequisite(s): ENGL 2010 and (ENGL 2610 or ENGL 2620), both with a grade of C- or higher and University Advanced Standing

Surveys major authors and works from the Augustan and Johnsonian eras of British literature, including literary, political, historical, religious, and social trends and ideas. Explores selected authors such as Defoe, Swift, Pope, Johnson, Thompson, Gray, Collins, Goldsmith, Montague, Burney, and others.
ENGL 3650
Romantic British Literature
3:3:0  Spring
* Prerequisite(s): ENGL 2010 and (ENGL 2610 or ENGL 2620), both with a grade of C- or higher and University Advanced Standing
Explores British poetry, fiction, and nonfiction of the Romantic era (approx. 1780-1830) by authors including Blake, Wordsworth, Coleridge, Byron, Keats, the Shelleys, and Austen. Examines historical and philosophical trends that shaped the era's literature and were shaped by it.

ENGL 3655
Victorian British Literature
3:3:0  Fall
* Prerequisite(s): ENGL 2010 and (ENGL 2610 or ENGL 2620), both with a grade of C- or higher, and University Advanced Standing
Explores British poetry, drama, fiction, and nonfiction of the Victorian age (approx. 1830-1900) by authors including Dickens, Tennyson, Eliot, the Brownings and Rossettis, Hardy, and Wilde. Examines historical and philosophical trends that shaped the era's literature and were shaped by it.

ENGL 3660
Modern British Literature
3:3:0  Spring
* Prerequisite(s): ENGL 2010 and (ENGL 2610 or ENGL 2620), both with a grade of C- or higher and University Advanced Standing
Explores modern British literature (c. 1900-1945) in relation to intellectual and historical developments. Emphasizes the literature of empire and of the world wars, modernist experimental writing, and reactions against modernism.

ENGL 3670
Contemporary British Literature
3:3:0  Fall
* Prerequisite(s): ENGL 2010 and (ENGL 2610 or ENGL 2620), both with a grade of C- or higher and University Advanced Standing
Explores contemporary British literature (1945-present) in relation to intellectual and historical developments. Emphasizes postmodern and postcolonial writing alongside traditional forms that, together, characterize recent British literature.

ENGL 3710
Literature by Women
3:3:0  Spring
* Prerequisite(s): ENGL 2010 and University Advanced Standing
Provides a substantive framework of important critical issues regarding literature by or about women. Applies feminist critical theory to fiction, poetry, personal essays, or drama written by women.

ENGL 373R
Literature of Cultures and Places
3:3:0  Fall, Spring
* Prerequisite(s): ENGL 2010 and University Advanced Standing
Studies literature written in English by authors from outside the United States and Britain or by authors in the United States and Britain defined by regional or cultural traditions (e.g. Southern US, Welsh, urban working-class). May be repeated twice with different designations.

ENGL 374G
Literature of the Sacred
3:3:0  Fall
* Prerequisite(s): ENGL 2010 and University Advanced Standing
Focuses on reading and interpreting primary texts of Hinduism, Buddhism, Judaism, Christianity, Islam, and others emphasizing resonances of these texts in later works of literature. Discusses texts from a literary standpoint within the genre of "religious writings."

ENGL 376G
World Literature
3:3:0  Spring
* Prerequisite(s): ENGL 2010 and University Advanced Standing
Studies literature from outside of Britain and the United States. Focuses on texts selected by region, culture, time period, or author (or closely related group of authors).

ENGL 377G
Latina/o Literature in America
3:3:0  Spring
* Prerequisite(s): University Advanced Standing
Studies Latina/o literature written in and about the United States and North America through close readings of novels, poetry, and other media from a variety of national, ethnic, and cultural traditions and perspectives including Mexico, the Caribbean, and the Brazuca/a/o experience. Examines issues such as identity, language, culture, race, ethnicity, and national borders, alongside questions of style, form, symbolism, and narrative. Integrates active class discussions, film screenings, student presentations, examinations, and papers. All texts are either written in English or taught in translation.

ENGL 3780
Mormon Literature
3:3:0  Spring
* Prerequisite(s): ENGL 2010 with a grade of C- or higher and University Advanced Standing
Surveys the foundations of Mormon literature as expressed through short fiction, novels, personal essays, drama, history, and criticism.

ENGL 3790
Contemporary LGBTQ Literature
3:3:0  Fall Even Year
* Prerequisite(s): ENGL 2010 and University Advanced Standing
Surveys literary, historical, critical, and cultural texts that reflect the diversity inherent among sexually marginal communities in the United States. Includes, but is not limited to novels, short stories, drama, poetry, film, and visual art.

ENGL 3820
History of Literary Criticism
3:3:0  Spring Odd Year
* Prerequisite(s): ENGL 2010 and University Advanced Standing
Explores strategies and theories influencing the reading and writing of literary texts from classical antiquity to the present.

ENGL 3890
Contemporary Critical Approaches to Literature WE
3:3:0  Fall, Spring, Summer
* Prerequisite(s): Completion of ENGL 2600 with a grade of C- or higher and University Advanced Standing
* Prerequisite(s) or Corequisite(s): ENGL 3090
Provides in-depth study of one contemporary theoretical and critical approach to literature using primary texts. Explores how interpretive techniques function within the discipline of English Studies. Required for English majors. Should be taken beginning of junior year.

ENGL 401R
Topics in Rhetoric
3:3:0  Fall, Spring
* Prerequisite(s): ENGL 2010 with a grade of C- or higher and University Advanced Standing
Examines various literary genres, with a different focus each semester. May be repeated for a maximum of 9 credits toward graduation.

ENGL 4020
Multicultural Rhetorics
3:3:0  Spring
* Prerequisite(s): University Advanced Standing
* Prerequisite(s) or Corequisite(s): ENGL 3010
Investigates the history and structure of rhetorical identities and arguments in multicultural, multi-ethnic, disability, and/or feminist discourses. Examines and critiques public discourses centered around race, class, gender, sexuality, disability, and other issues. Uses specific rhetorical theories to examine various texts and popular media, such as advertisements, film, television, etc.

ENGL 412R
Studies in Literary Genres
3:3:0  Fall, Spring
* Prerequisite(s): [(ENGL 2250 or ENGL 225H) and ENGL 2600 each with a C- or higher] and University Advanced Standing
Examines various literary genres, with a different focus each semester. May be repeated with different topics for a maximum of 9 credits toward graduation.

ENGL 414R
Special Topics in Cinema History
3:2:3  On Sufficient Demand
* Prerequisite(s): ENGL 2150 and University Advanced Standing
Focuses study on a specific U.S. or International period or movement. Representative topics may include German Expressionism, Italian Neorealism, New Hollywood Cinema, and etc. May be repeated for a maximum of 9 credits toward graduation. Some films screened may carry an "R" rating.
Course Descriptions

ENGL 416R (Cross-listed with: CINE 416R, THEA 416R)
Special Topics in Film Studies
3:3:0 On Sufficient Demand
* Prerequisite(s): ENGL 2150 or CINE 2150 or THEA 1023 and University Advanced Standing

Covers cinema directors, genre, theory, and social change on a rotating basis. Explains course focus, defines terminology involved, then studies evolution and/or specific texts or contexts, and considers theoretical discourse. May be repeated for a maximum of 9 credits toward graduation. Some films screened may carry an "R" rating. Course fee of $40 for support applies.

ENGL 4210
Methods in Teaching Literacy I
3:3:0 Fall, Spring
* Prerequisite(s): ENGL 2600 and (ENGL 3010 or ENGL 3020 or ENGL 3040) and University Advanced Standing

Explores issues related to teaching English in secondary schools. Focuses on using the Common Core State Standards (CCSS) to design engaging units in each of the core strands: Reading, Writing, Speaking and Listening, and Language. Focuses on current research and resources, and on student teaching. Prepares students for teaching in secondary classrooms. Includes teaching methods and assessment. Emphasizes classroom discussion, field observations, and creation of teaching materials.

ENGL 4220
Methods in Teaching Literacy II
3:3:0 Fall, Spring
* Prerequisite(s): ENGL 4210 and University Advanced Standing
* Prerequisite(s) or Corequisite(s): EDSC 4550

Explores issues related to adolescent literacy through reading and discussion. Requires students to create teaching materials, including unit and lesson plans, and participate in teaching demonstrations. Prepares student teaching for English Secondary Education students.

ENGL 4230
Methods in Teaching Literacy III Teaching the Conventions of Writing
3:3:0 Fall, Spring
* Prerequisite(s): ENGL 4210 and University Advanced Standing
* Prerequisite(s) or Corequisite(s): EDSC 4550

Explores the conventions of writing in the secondary English classroom, including assigning and assessing student writing. Presents strategies for teaching writing to secondary students, as outlined in the Common Core State Standards (CCSS), which have been adopted by the Utah Office of Education. Includes designing lessons for each of the modes specified in the CCSS: Argument, Expository/Explanatory, and Narrative writing. Integrates the six-trait model, with specific focus on teaching Conventions. Emphasizes discussion, micro-teaching, and creation of teaching materials.

ENGL 4250
Adolescent Literature
3:3:0 Fall, Spring
* Prerequisite(s): ENGL 2010 and University Advanced Standing

Explores attitudes towards adolescence as a distinctive psychological, social, and moral state, using contemporary and time-honored works from various cultures. Pays particular attention to contemporary adolescent issues, history of young adult literature, significant trends in young adult literature, and the role of young adult literature in the literacy development process.

ENGL 4340
Advanced Technical Communication
3:3:0 Spring Odd Year
* Prerequisite(s): ENGL 2010 with a grade of C- or higher and ENGL 2310 and University Advanced Standing

Introduces advanced theory to critically reflect upon workplace genres and values to situate technical communication in broader political and global contexts. Teaches user-centered document design, including initial proposals and research, drafting, collaboration, usability testing, and document management. Emphasizes designing documents for local and university clients.

ENGL 436R
Topics in Technical Communication
3:3:0 Spring Odd Year
* Prerequisite(s): ENGL 2010 with a grade of C- or higher and ENGL 2310 and University Advanced Standing

Examines key issues and theories in technical communication. May be taken twice with different topics. Lab access fee of $12 for computers applies.

ENGL 4420
Advanced Fiction Writing
3:3:0 Fall
* Prerequisite(s): ENGL 3420 and University Advanced Standing

Applies a variety of advanced techniques for writing, revising, and publishing works, with an emphasis on workshop and writing for publication and public readings. Lab access fee of $7 for computers applies.

ENGL 4425
Advanced Fiction Writing II
3:3:0 Spring
* Prerequisite(s): ENGL 4420 and University Advanced Standing

Addresses the stylistic and compositional challenges of nonfiction, including, for example, narrative, memoir, interpretive reporting, found text, and experimental forms. Teaches user-centered document design, including initial proposals and research, drafting, collaboration, usability testing, and document management. Emphasizes designing documents for local and university clients.

ENGL 4445
Advanced Poetry Writing II
3:3:0 Spring
* Prerequisite(s): ENGL 4440 and University Advanced Standing

Puts into practice a variety of techniques for writing and revising original poetry. Includes poetry readings, memorizations, workshop, and submission of original poetry to literary journals. Focuses on contemporary poetry and critical theories associated with contemporary poetry. Includes workshop methodology.

ENGL 4450
Advanced Creative Nonfiction Writing I
3:3:0 Fall
* Prerequisite(s): ENGL 3450 and University Advanced Standing

Provides advanced instruction for writing nonfiction prose. Explores and provides practice in various categories of nonfiction, including, for example, narrative, memoir, interpretive reporting, found text, and experimental forms. Addresses the stylistic and compositional challenges of transforming experience into writing.

ENGL 4455
Advanced Creative Nonfiction Writing II
3:3:0 Spring
* Prerequisite(s): ENGL 4450 and University Advanced Standing

Provides advanced instruction in revising, editing, and preparing Creative Nonfiction manuscripts for submissions in well-selected quality venues. Provides practice in finishing work previously shaped in ENGL 3450 and ENGL 4450. Addresses challenges of style, balance, compositional complexity, tradition, and experimentation.

ENGL 4570
Studies in the American Novel
3:3:0 Spring Odd Year
* Prerequisite(s): ENGL 2010 and University Advanced Standing

Explores formal and thematic developments in the American novel. Includes historical, regional, cultural, and theoretical perspectives.

ENGL 4620
Chaucer
3:3:0 Spring Even Year
* Prerequisite(s): ENGL 2010 and University Advanced Standing

Studies selected works by Chaucer, including The Canterbury Tales and other poetry. Considers the cultural and historical context of the Middle Ages.

ENGL 463R
Topics in Shakespeare
3:3:0 Fall, Spring
* Prerequisite(s): ENGL 2010 and University Advanced Standing

Examines various topics related to Shakespeare's drama and poetry. Discusses relevant cultural and historical aspects of his times. May be repeated for a maximum of 6 credits for graduation with different topics.
ENGL 4640
Milton
3:3:0  Fall Even Year
* Prerequisite(s): ENGL 2010 and University Advanced Standing
Surveys John Milton's major prose and poetry, including an intensive study of "Paradise Lost," placed in context with the important social, political, and religious trends of his time.

ENGL 471R
Eminent Authors
3:3:0  Fall, Spring
* Prerequisite(s): ENGL 2010 and University Advanced Standing
Introduces important works of eminent authors. Emphasizes forms of literary expression and their place in the historical development of world literature. Examines relevant cultural and historical aspects of the authors' milieu. May be repeated twice with different topics.

ENGL 473R
Topics in Gender Studies
3:3:0  On Sufficient Demand
* Prerequisite(s): ENGL 2010, ENGL 2600, and University Advanced Standing
Focuses student reading, research, and discussion on specific areas of concentration within the field of gender studies. Analyzes how gender affects and is affected by culture, ideology, socio-economic factors, history, etc. May be repeated for up to 6 credits toward graduation.

ENGL 474R
Topics in Folklore
3:3:0  On Sufficient Demand
* Prerequisite(s): (ENGL 2210 or instructor/advisor approval) and University Advanced Standing
Studies one folk genre, one folk group, or one theme which crosses genres and/or groups. Students will collect folklore related to topic under discussion. Uses discussion, readings, folk events, and students' writings. May be repeated twice with different topics.

ENGL 476G
Multi-ethnic Literature in America
3:3:0  Fall Even Year
* Prerequisite(s): ENGL 2010 and University Advanced Standing
Surveys multi-ethnic literature, reflecting the rich diversity inherent in the American experience. Includes but is not limited to works by Native American, Hispanic American, Asian American, and African American authors.

ENGL 481R
Internship
1 to 8:1 to 8:0  Fall, Spring, Summer
* Prerequisite(s): Departmental approval, senior status, and University Advanced Standing
For senior English majors and minors. Internships are intended to offer students opportunities to work with instructors and other professionals on task related to the field of English. Students who receive credit for an internship must establish learning objectives with their Faculty Sponsor at the beginning of their internship and reflect on their learning through academic work (i.e., papers, journal, etc.). Students are required to submit an evaluation of their experience at the end of the semester. May be repeated for a maximum of 8 credits toward graduation. May be graded credit/no credit.

ENGL 486R
Topics in Literature
3:3:0  Fall, Spring
* Prerequisite(s): ENGL 2010 and University Advanced Standing
Studies topics in literature such as ethics, the environment, war, civil rights, families, marriage, death, politics, adolescence, and immigrant narratives.

ENGL 488H
English Honors Seminar
3:3:0  On Sufficient Demand
* Prerequisite(s): (ENGL 3090 and ENGL 3890) and University Advanced Standing
Emphasizes rigorous analysis and synthesis of topics in British and American literature, rhetoric, and writing, with specific content varying by semester. Uses a seminar approach to enable significant participation by students through discussion, presentations, and written analyses.

ENGL 490R
Directed Readings
1 to 3:0:3 to 9  Fall, Spring, Summer
* Prerequisite(s): Department Chair, Instructor Approval, and University Advanced Standing
Reading and writing assignments designed in consultation with a faculty member to meet special needs or interests not available through regular course work. May be repeated two times for a total of up to 9 credits.

ENGL 4950
Senior Seminar
3:3:0  Fall, Spring
* Prerequisite(s): ENGL 3000, ENGL 3090, and ENGL 3890, all with a grade of C- or higher and explores the value and relevance of an English degree. Professionalizes students by assisting them with career or graduate school preparation. Offers students the opportunity to reflect on their major and to optimize writing and communication skills. Includes revision of an existing paper as a scholarly writing sample and creation of a professional portfolio to display knowledge and abilities. Culminates with submission of a reflective portfolio to the department.
Lab access fee of $7 for computers applies.

ENGL 499H
Honors Thesis Preparation
3:3:0  On Sufficient Demand
* Prerequisite(s): University Advanced Standing
* Prerequisite(s) or Corequisite(s): ENGL 488H
Serves as the first half of the thesis experience for Departmental Honors in English. Reviews and improves students' research methodologies. Requires that students initiate collaboration with one or more instructors in a directed research and writing project. Explores and develops thesis topic in consultation with faculty. Builds on skills and knowledge gained in earlier courses, including research skills in primary and secondary sources, critical thinking, and literary analysis.

ENGR 1000
Introduction to Engineering
3:3:0  Fall, Spring
* Prerequisite(s) or Corequisite(s): MATH 1060 or higher
Introduces engineering-problem-solving techniques, design processes, modelling of simple engineering systems using CAD, and systems analysis in Excel. Emphasizes engineering design procedures by incorporating group projects and presentations. Course Lab fee of $11 for computers applies. Lab access fee of $45 for computers applies.

ENGR 1020
Survey of Engineering
1:1:0  Fall, Spring
Introduces the various areas of engineering to pre-engineering majors and others interested in learning more about the contributions engineers make to our modern society. Includes a brief history of engineering and discussions about what engineers really do. Discusses professional ethics, responsibilities, and career opportunities. Includes lectures, guest speakers, and in-class exercises. Lab access fee of $45 for computers applies.
**Course Descriptions**

**ENGR 1030**
Engineering Programming  
3:3:0  Fall, Spring  
* Prerequisite(s): MATH 1210

Involves modeling and analysis of electro-mechanical systems using projects. Applications scientific principles to solve and model engineering problems. Involves developing and writing programs to gather data, guide, and control electro-mechanical devices to achieve predefined objectives. Course fee of $11 for supplies/materials applies. Lab access fee of $45 for computers applies.

**ENGR 2010**
Engineering Statics  
3:3:0  Fall, Spring  
* Prerequisite(s): PHYS 2210

Teaches principles of engineering mechanics as applied to bodies at rest. Discusses the concepts of position and force vectors, free body diagrams, equilibrium, center of gravity, centroids, distributed loading, friction, area and mass moments of inertia. Applications principles learned in the analysis of trusses, frames and machines. Lab access fee of $45 for computers applies. Canvas Course Mats $105/Pearson applies.

**ENGR 2030**
Engineering Dynamics  
3:3:0  Fall, Spring  
* Prerequisite(s): ENGR 2010, MATH 1220, and PHYS 2210

Teaches principles of engineering mechanics as applied to bodies in motion. Studies kinematics and kinetics of particles and rigid bodies. Develops the concepts of force and acceleration, work, energy, impulse, momentum, impact, and vibration. Utilizes theory and methodology developed in the solution of practical engineering problems. Lab access fee of $45 for computers applies.

**ENGR 2140**
Mechanics of Materials  
3:3:0  Fall, Spring  
* Prerequisite(s): ENGR 2010 and PHYS 2210

Studies behavior of materials under axial, torsional, flexural, transverse shear and combined loading conditions. Analyzes nature of stress and strain for ductile and brittle materials, stress and strain diagrams, stress concentration, and failure of materials. Includes analysis of repeated and dynamic loading, and basic design techniques related to above topics. Lab access fee of $45 for computers applies.

**ENGR 2160**
Introduction to Materials Science and Engineering  
3:3:0  Fall, Spring  
* Prerequisite(s): CHEM 1210

Introduces students to properties of materials from macro and micro point of view. Includes failure analysis of materials, altering properties of materials, and fracture mechanics. Introduces properties of solid materials and their behavior as applied to engineering. Lab access fee of $45 applies.

**ENGR 2300**
Engineering Thermodynamics  
3:3:0  Fall  
* Prerequisite(s): MATH 1220, PHYS 2210


**ENGR 2450**
Computational Methods for Engineering Analysis  
3:3:0  Fall, Spring  
* Prerequisite(s) or Corequisite(s): MATH 2250

Discusses computational and symbolic methods for the solution of complex engineering problems. Discusses computer representation of numbers and algorithm error analysis. Covers the solution of algebraic and differential equations. Includes the use of modern software tools. Lab access fee of $45 for computers applies.

**ENGR 2595**
Special Topics  
1 to 3:1 to 3:0  On Sufficient Demand  
* Prerequisite(s): Permission of Department Chair

Presents various engineering topics. Examines current technology, techniques, processes and equipment. Includes oral and written reports. May be repeated for a maximum of 3 credits toward graduation.

**Environmental Studies (ENST)**

**ENST 3000**
Introduction to Environmental Studies  
3:3:0  Fall  
* Prerequisite(s): University Advanced Standing

Explores the complex relationships of culture, technology, and nature within an interdisciplinary framework of the natural sciences, social sciences, business, and humanities. Addresses the integration of humanity and nature in the age of globalization.

**ENST 3520** (Cross-listed with: SOC 3520)  
Environmental Sociology  
3:3:0  On Sufficient Demand  
* Prerequisite(s): SOC 1010 and ENGL 2010 with a C+ grade or higher and University Advanced Standing

Explores in detail several different approaches to understanding the social causes of and solutions to environmental degradation. Discusses the development of a wide variety of theory-based critiques of various social institutions (e.g., economic, political, religious) and how these institutions’ values can create and perpetuate unsustainable practices.

**Entrepreneurship (ENTR)**

**ENTR 2500**
Creativity and Entrepreneurial Thinking  
3:3:0  Fall, Spring, Summer  
* Prerequisite(s): (ENGL 1010 or ENGH 1005) and University Advanced Standing

Introduces the concepts of innovation and entrepreneurial creativity. Draws upon the inspired thinking and entrepreneurial pursuits of leaders in a variety of disciplines in order to understand the process of innovation and appreciate the role of creativity in making innovation possible. Includes topics such as the customer/problem/solution framework, design thinking, prototyping, intellectual property, creative idea development, lead user research methodology, peer feedback, new venture financing, and the lean start-up.

**ENTR 3170**
Entrepreneurship  
3:3:0  Fall, Spring, Summer  
* Prerequisite(s): (ENGL 1010 or ENGH 1005) and University Advanced Standing

Provides an overview of the practice of entrepreneurship and focuses on the role of the entrepreneur in identifying, evaluating and developing opportunities. Considers the application of knowledge of the technical, market, financial and human aspects of a business as they relate to the start-up and development of business opportunities. Lab access fee of $30 for computers applies.

**ENTR 3180**
Developing Small Business  
3:3:0  Fall, Spring  
* Prerequisite(s): (ENGL 1010 or ENGH 1005) and University Advanced Standing

Provides a practical and theoretical foundation for managing SMEs (small and medium enterprises). Emphasizes identifying, evaluating and developing opportunities for growth. Covers the basic elements of the business focusing on best practices in the technical, market, financial, and human resource aspects of existing small business as well as the interaction between these elements. Covers legal aspects of operating a business.

**ENTR 3190**
Early-stage Financing  
3:3:0  Fall  
* Prerequisite(s): University Advanced Standing

Provides non-business students an overview of financial modeling for entrepreneurship and small business, as well as the sources and processes involved in financing new ventures. Course teaches financial management, proforma financial statements, cash flow, bootstrapping, and debt and equity financing in an entrepreneurial environment.
ENTR 3220
Entrepreneurship Law
3:3:0  Fall
* Prerequisite(s): (ENGL 1010 or ENGH 1005) and University Advanced Standing

For entrepreneurship students and others desiring a to start a business. Presents current U.S. legal framework as they concern start-ups and new businesses. Topics include the American legal system, constitutional law, statutory law, common law, and administrative law and alternatives to courts. Discusses crimes, torts, negligence, contracts, negotiable instruments, and contractual relationships.

ENTR 4200
Innovative Opportunity Development
3:3:0  Fall, Spring
* Prerequisite(s): ENTR 3170 and University Advanced Standing

Focuses on the development of both (a) the key value proposition of a product/service offering, and (b) the business entity that provides that offering. Covers the use of client-centered development and design thinking to create, modify and validate business solutions. Emphasizes client feedback from concept through prototype development. Lab access fee of $30 for computers applies.

ENTR 4210
Career Development for Entrepreneurs
3:3:0  Spring
* Prerequisite(s): ENTR 3170 and University Advanced Standing

Considers the personal and interpersonal development of entrepreneurs and other business professionals. Addresses issues and provides specific guidance in areas such as business and personal financial strategies, business and family interpersonal relationships, networking, human resource management, and professional self-image.

ENTR 4300
The Art of the Pitch
3:3:0  Spring
* Prerequisite(s): ENTR 2500 or ENTR 3170 and University Advanced Standing

Teaches entrepreneurial strategic communications skills to help the entrepreneur prepare for and present business ideas to prospective investors, partners, employees and customers. Focuses on skill development in written, verbal and vocal communications to pitch business ideas. Develops confidence and the ability to handle questions regarding presentations. May be delivered hybrid. Lab access fee of $30 for computers applies.

ENTR 4400
New Venture Financing
3:3:0  Spring
* Prerequisite(s): FIN 3100 and Matriculation into the Woodbury School of Business and University Advanced Standing.

Covers advanced concepts and skills in entrepreneurship/ small business management. Emphasizes how new and emerging companies are financed. Applies functional tools to case situations. Lab access fee of $30 for computers applies.

ENTR 4450
Enterprise Formation
3:3:0  Spring
* Prerequisite(s): (ENTR 4200 or ENTR 3170) and Matriculation into the Woodbury School of Business and University Advanced Standing.

Provides an integrated, engaged learning opportunity in entrepreneurship through the development of a business opportunity. Focuses on creating and managing the formation of a business enterprise from the formation of a legal entity to launching a product of service and creating a financial model. Emphasizes documenting the process in a business model and/or a complete business plan.

ENTR 4455
New Venture Consulting
3:3:0  Fall
* Prerequisite(s): ENTR 3170, matriculation into the Woodbury School of Business and University Advanced Standing

Integrates the identification, evaluation, and/or development of the small- and medium-sized business opportunities of community-based entrepreneurs. Makes use of an engaged learning opportunity for business students interested in learning how consultants work by consulting with and assisting entrepreneurs. Includes projects that cover and examine all functional areas of business and the interaction between them. Covers consulting processes and strategies as well as provide tools and techniques for developing business models and assessing opportunities.

ENTR 4500
Venture Capitalist Skills
3:3:0  Fall
* Prerequisite(s): ENTR 3190 with B- or better and University Advanced Standing

Develops an in-depth knowledge about the capital raising process. Applies principles of valuation and selection routines for choosing portfolio firms. Assesses candidate startups with quantitative techniques for evaluating firm performance. Teaches analysis of and practices negotiation with other firms on the major aspects of term sheets. Prepares students to create net-positive deals out of competing term sheets that have been submitted to the startup firm.

ENTR 493R
Entrepreneurship Lecture Series
1:1:0
* Prerequisite(s): University Advanced Standing

Presents lectures by guest speakers on current entrepreneurship issues and topics. Speakers and topics vary each semester. May apply a maximum of 3 credits toward graduation. Lab access fee of $30 for computers applies.

Course Descriptions

Environmental Management (ENVT)

ENVT 1110  PP
Introduction to Environmental Management
3:3:0  Fall, Spring, Summer

Surveys environmental issues and the impact of people on the environment. Covers water, air, and soil pollution. Discusses pollution prevention and remediation methods. For majors and any who have an interest in environmental issues.

ENVT 1200  Fall
Environmental Worker Safety
3:3:0

Discusses safety laws, training requirements, and the use of personal protective equipment. Covers management of a safety program and development of a safety culture.

ENVT 1210  Fall Even Year
Introduction to Water Reclamation
3:3:0

Covers the basic processes used to treat wastewater including primary treatment, biological treatment, and chemical treatment processes. Offers excellent preparation for the state license exam.

ENVT 1270  Spring Even Year
Environmental Microbiology
3:3:0

* Prerequisite(s): MICR 2060 recommended

For water managers, public health workers, and environmental managers. Discusses the role microorganisms in water treatment, wastewater treatment, agriculture, environmental change, and others.

ENVT 1300  Spring Odd Year
Environmental Lab and Sampling
3:2:3

Studies basic laboratory techniques used by labs working on environmental projects. Covers safety, pH, dissolved oxygen, BOD, turbidity, organics, and others. Includes opportunities for undergraduate research. Course Lab fee of $38 for supplies/materials/lab applies.

ENVT 1360  Spring Odd Year
Introduction to Water Treatment
3:3:0

Covers coagulation, sedimentation, filtration, water sources, sampling, disinfection, and regulations. Introduces the equipment used to treat water. Discusses the prevention of disease through effective treatment.

ENVT 1510  Spring
Hazardous Materials Emergency Response
3:3:0

Meets the requirements for the OSHA 40 hour training. Includes personal protection, identifying hazardous materials, spill control, and incident management. Completers may obtain OSHA certification for handling hazardous materials. Course fee of $28 for materials applies.
Course Descriptions

ENVT 2560 Environmental Health 3:3:0 Fall, Spring
* Prerequisite(s): BIOL 1010 and CHEM 1110 recommended

Presents how environmental protection and proper sanitation can protect the public. Covers control of infectious and noninfectious diseases, safe water supplies, housing safety, radiation hazards, and air pollution.

ENVT 2710 Environmental Careers 1:1:0 Fall, Spring
For all students interested in environmental careers. Explores the career opportunities in environmental areas. Covers resumes, letters of inquiry, networking, and other methods of job seeking.

ENVT 2730 Introduction to Soils 4:3:2 Fall Odd Year
* Prerequisite(s): ENGL 1010 or ENGH 1005

An introductory course for majors and non-majors. Covers basic topics such as soil classification, soil-water relations, fertility, soil strength, and soil conservation. Offers important background information for those involved in pollution prevention and remediation, environmental monitoring, and home gardening.

ENVT 2782R Environmental Internship 1 to 5:1 to 5:0 Fall, Spring, Summer
* Prerequisite(s): Instructor permission

Allows students practical experience working at an environmentally related job. May be repeated for a maximum of five credits toward graduation. May be graded credit/no credit.

ENVT 3010 Environmental Toxicology 3:3:0 Fall Even Year
* Prerequisite(s): BIOL 1010 and CHEM 1110 recommended

For environmental managers and safety managers. Discusses safe levels of exposure, safe industrial practices and regulations. Reviews standards for toxic substances. Increases awareness of toxins commonly found on job sites.

ENVT 3280 Environmental Law 3:3:0 Spring
* Prerequisite(s): ENGL 1010 or ENGH 1005 (ENGL 2010 recommended), and University Advanced Standing

Covers the Clean Water Act, the Safe Drinking Water Act, and the Clean Air Act. Reviews the Toxic Substances Control Act, the Resource Conservation and Recovery Act, the Superfund law, DOT regulations, and OSHA regulations.

ENVT 3290 Environmental Permits and Reports 3:3:0 On Sufficient Demand
* Prerequisite(s): ENGL 1010 recommended

For students interested in becoming environmental managers. Covers the permits and reports that are required by the EPA, OSHA, state and local agencies that relate to air, water, and hazardous materials. Includes the preparation of sample permit applications and monthly operational reports.

ENVT 3320 Hydraulics of Water 3:3:0 Spring Even Year
* Prerequisite(s): MAT 1010 and University Advanced Standing

Prepares students to analyze the flow of water. Includes the continuity equation, Hazen-Williams formula, and the Bernoulli Theorem. Completers will be better able to interact with engineers and operate water equipment in a professional manner.

ENVT 3330 Water Resources Management 3:3:0 Fall Even Year
* Prerequisite(s): University Advanced Standing

Examines the broad issues that affect water quality and supply. Covers watershed management, limnology, stormwater management, and wetlands. Discusses the biological and physical processes that occur and the legal constraints that affect management decisions.

ENVT 3530 Environmental Management Systems 3:3:0 Spring
* Prerequisite(s): ENGL 1010 or ENGH 1005 (ENGL 2010 recommended), and University Advanced Standing

For those interested in the interaction between industry and the environment. Covers the systems and organization necessary to effectively manage environmental issues. Discusses the ISO 14000 standard and its effect upon management practices.

ENVT 3550 Site Investigation 3:3:0 Spring Even Year
* Prerequisite(s): University Advanced Standing, CHEM 1110 recommended

Covers the investigation and preliminary cleanup of a contaminated site. Includes planning, training, site characterization, sampling, and site control. Completers should have a basic understanding of the process used to remediate an environmentally damaged site.

ENVT 3600 Appropriate Technology and Sustainable Development for the Developing World 3:3:0 On Sufficient Demand
* Prerequisite(s): ENGL 2010 and University Advanced Standing

Reviews the origins of poverty and the current conditions of people in developing countries. Offers development solutions being pursued around the world. Empowers students to play an active role in international poverty reduction by introducing international development and its challenges. Teaches students how to determine appropriate technologies based on design, physical, and social considerations.

ENVT 3630 Introduction to Geographic Information Systems 4:3:2 On Sufficient Demand
* Prerequisite(s): University Advanced Standing

Introduces the operation of Geographic Information Systems (GIS). Focuses on GIS software and basic theory of geographic information science. Offers valuable preparation for careers in geography, planning, surveying, marketing, environmental technology, biology, engineering, and other related fields. Lab access fee of $30 for computers applies.

ENVT 3700 Current Topics in Environmental Management 3:3:0 Fall
* Prerequisite(s): University Advanced Standing; ENVT 1110 recommended

Studies local environmental issues, new technologies, and the challenges faced by environmental managers. Issues discussed will vary with the semester. Prepares students for a thoughtful discussion of environmental issues.

ENVT 3750 Land Use Planning 3:3:0 Spring Odd Year
* Prerequisite(s): University Advanced Standing; ENVT 3280 recommended

Covers key issues in land use planning and how they affect the environment. Includes multiple use concepts, focused uses, zoning, mapping, and the political processes used in planning. Discusses the importance of strategic planning and public relations.

ENVT 3770 Natural Resources Management 3:3:0 Fall Odd Year
* Prerequisite(s): University Advanced Standing; BIOL 1010 recommended

For students in the Environmental Management program and others interested in natural resource issues. Introduces the management and conservation of natural resources. Discusses forestry, range management, wildlife management, and outdoor recreation.

ENVT 3790 Hydrology I 4:3:2 Fall
* Prerequisite(s): (MATH 1050 or MATH 1055), GEO 1010 and GEO 1015, and University Advanced Standing

Teaches how to solve textbook problems by developing skills in mathematics and understanding of hydrology. Uses hydrology to solve the real problems of real people. Requires that each student carry out a service learning project in the areas of water development, water conservation or water quality. Course fee of $21 applies.
ENVT 3800 (Cross-listed with: CHEM 3800, PHYS 3800)  
Energy Use on Earth  
3:3:0  
Fall  
* Prerequisite(s): (PHYS 1010 or PHSC 1000 or CHEM 1010 or GEO 1010 or GEO 2040 or METO 1010) and (MATH 1050 or MATH 1055) and University Advanced Standing  
Covers the science of energy production and consumption. Quantitatively analyzes various methods of energy production, distribution, and end use in all sectors of our society, including transportation, residential living, and industry. Examines the impacts of our energy consumption on the environment and prospects for alternative energy sources. Intended for science majors interested in energy use in society or in an energy related career, and for students in other majors who feel that a technical understanding of energy use will help them to understand and mitigate its impact in our society.

ENVT 3850  
Environmental Policy  
3:3:0  
Fall  
* Prerequisite(s): ENVT 1110 and ENVT 3280 (recommended)  
For upper-division students with an interest in environmental policy. Discusses the process by which policies are made and the factors that influence policy formation. Includes political factors, economics, international issues, public awareness and others.

ENVT 4790  
Hydrology II  
4:3:3  
Spring  
* Prerequisite(s): ENVT 3790 and University Advanced Standing  
Continuation of ENVT 3790 with an emphasis on contaminant hydrology and computer modeling. Requires students to prepare a case study in the area of contaminant hydrology. Requires that each student carry out a service learning project in the areas of water development, water conservation or water quality. Course fee of $21 applies.

ENVT 482R (Cross-listed with: GEO 482R)  
Geologic Environmental Internship  
1 to 3:1 to 3:0  
Fall, Spring, Summer  
* Prerequisite(s): GEO 1010 or ENVT 1110; 12 credit hours of any GEO, GEOG, or ENVT courses; declared major in any Earth Science program and University Advanced Standing  
Engages students in supervised geologic or environmental work in a professional setting. Requires approval by the Chair of the Department of Earth Science. Includes maintaining a journal of student experiences and preparing a paper summarizing their experience. A maximum of 3 credit hours may be counted toward graduation. May be graded Credit/No Credit.

ENVT 495R  
Special Projects in Environmental Management  
1 to 3:0:3 to 9  
Fall, Spring, Summer  
* Prerequisite(s): Instructor Permission and University Advanced Standing  
Allows students to pursue undergraduate research projects. Includes instructor directed practical research. Students will prepare a report of their findings. May be repeated for a maximum of 6 credits toward graduation.

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**Emerg Serv Aircraft Resc FF (ESAF)**

**ESAF 2100**  
Airport Firefighter  
3:3:0  
On Sufficient Demand  
Explores the theories and fundamentals associated with airport rescue fire fighting. Addresses safety, operations and agents associated with aircraft rescue and firefighting procedures. Provides an overview of communications, apparatus, tools and equipment specific to the aerospace emergency service delivery.

**ESAF 2110**  
Aircraft Related Mass Casualty Incidents  
3:3:0  
On Sufficient Demand  
Involves the planning, response, mitigation and management of a mass casualty incident resulting from a crashed aircraft. Includes issues relating to medical treatment, triage and transportation. Examines how the command structure functions as well as how operations personnel work on the scene of mass casualty incident.

**ESAF 2120**  
Aircraft Mishaps  
3:3:0  
On Sufficient Demand  
Teaches how to locate and use past aircraft accident and mishap data from various government agencies in order to develop relevant lesson plans and training courses for emergency responders. Examines how to research and interpret aircraft mishap data to strengthen emergency service agencies involved in aircraft rescue firefighting. Includes developing or reviewing relevant guidelines, protocols, procedures, and training evolutions based on current mishaps and findings.

**ESAF 2140**  
Airport Operations for the Emergency Responder  
3:3:0  
On Sufficient Demand  
Provides an understanding of ground operations, communications, layout, movements and functions in order to operate effectively within the boundaries of an airport. Discusses the complex, unfamiliar setting responders face associated with daily operations of an airport.

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**Emergency Services Emergency Care (ESEC)**

**ESEC 1013**  
Emergency Medical Response  
3:2:3  
Fall, Spring, Summer  
Focuses on assessment and care for patients of all ages with a variety of medical conditions and traumatic injuries prior to the arrival of professional emergency care providers. Includes introduction to emergency medical services systems, roles and responsibilities of Emergency Medical Responders, anatomy and physiology, medical emergencies, trauma, and special considerations for working in the prehospital setting.

**ESEC 1140**  
Emergency Medical Technician Basic  
9:7:6  
Fall, Spring, Summer  
For first semester Fire Science students. Prepares students for certification as an Emergency Medical Technician-Basic through the Utah Bureau of EMS. Includes CPR, automatic defibrillation, patient assessment and treatment, legal issues, airway support, medical and trauma emergencies, emergency childbirth, pediatric emergencies and patient movement/transport. Course fee of $233 applies.

**ESEC 114A**  
Emergency Medical Technician-Part I  
3:3:0  
Fall, Spring, Summer  
* Corequisite(s): ESEC 114B and ESEC 114C  
Applies fundamental knowledge of the EMS system, safety and well-being of the EMT, medical and legal and ethical issues to the provision of emergency care. Prepares students for certification as an Emergency Medical Technician-Basic through the Utah Bureau of EMS. First of three courses required for EMT- Basic certification. May be delivered online.

**ESEC 114B**  
Emergency Medical Technician-Part II  
4:4:0  
Fall, Spring, Summer  
* Corequisite(s): ESEC 114A and ESEC 114C  
Provides background information and knowledge about EMT kinetiche skills, including medical assessments, trauma assessment, pharmacology, special patient populations, and EMS operations.

**ESEC 114C**  
Emergency Medical Technician-Part III  
2:0:6  
Fall, Spring, Summer  
* Corequisite(s): ESEC 114A and ESEC 114B  
Demonstrates mastery of kinetiche skills, including medical assessments, trauma assessment, pharmacology, special patient populations, and EMS operations. Course lab fee of $71 applies. Course fee of $229 for FISDAP study tools applies.

**ESEC 3060**  
Emergency Medical Technician-Advanced  
9:7:6  
Fall, Spring  
* Prerequisite(s): EMT Level Certification and University Advanced Standing  
Prepares students for certification as an Emergency Medical Technician-Advanced through the Utah Bureau of EMS. Includes Life span development, advanced airway management, intravenous access, medication administration, cardiac rhythm interpretation and other advanced medical skills. Course lab fee of $87 for supplies applies. Course fee of $117 for certification materials applies.

**ESEC 3210**  
Paramedic I-Operations  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): Matriculated into Paramedic Program and University Advanced Standing  
Reinforces concepts and clinical skills students previously learned at the EMT level. Introduces advanced concepts in EMS Systems, illness and injury prevention, medical-legal issues, anatomy, physiology, pathophysiology, scene leadership and incident management for the paramedic. Course fee of $385 applies.
Course Descriptions

ESEC 3220
Paramedic II-Cardiac and Respiratory Patient Care
3:3:0 Fall, Spring, Summer
* Prerequisite(s): Matriculated into the paramedic program and University Advanced Standing
* Corequisite(s): ESEC 3225
* Prerequisite(s) or Corequisite(s): ESEC 3210

Reinforces concepts and clinical skills students previously learned at the EMT level. Introduces advanced concepts in Cardiology, Airway Management, Respiratory Distress and Resuscitation. Identifies patient assessment and management within the paramedic scope of care. Course fee of $7 applies.

ESEC 3225
Paramedic II Lab-Cardiac and Respiratory Emergencies
1:0:3 Fall, Spring, Summer
* Prerequisite(s): University Advanced Standing
* Corequisite(s): ESEC 3220

Reinforces concepts and clinical skills discussed in ESEC 3220. Emphasizes patient assessment, airway management, cardiac care, pathophysiology, pharmacology, critical decision-making skills and appropriate interventions while caring for cardiac, respiratory, or resuscitation emergencies. Assessment based management and evidenced based practices will be applied. Course lab fee of $132 applies.

ESEC 3230
Paramedic III-Trauma Patient Care
3:3:0 Fall, Spring, Summer
* Prerequisite(s): Matriculated into the paramedic program and University Advanced Standing
* Corequisite(s): ESEC 3235
* Prerequisite(s) or Corequisite(s): ESEC 3210

Reinforces and expands upon the materials and clinical skills learned as an EMT. Integrates prior learning with enhanced advanced life support concepts and skills. Emphasizes patient assessment and recognition of significant findings, differential diagnoses and treatment strategies for trauma patients. Course fee of $38 applies.

ESEC 3235
Paramedic III Lab-Trauma Emergencies
1:0:3 Fall, Spring, Summer
* Prerequisite(s): University Advanced Standing
* Corequisite(s): ESEC 3230

Reinforces concepts and clinical skills discussed ESEC 3330. Emphasizes patient assessment, airway management, pathophysiology, pharmacology, critical decision-making skills and appropriate interventions during traumatic emergencies. Assessment based management and evidenced based practices will be applied. Course fee of $72 applies.

ESEC 3240
Paramedic IV-Medical and Geriatric Patient Care
3:3:0 Fall, Spring, Summer
* Prerequisite(s): Matriculated into the paramedic program and University Advanced Standing
* Corequisite(s): ESEC 3245
* Prerequisite(s) or Corequisite(s): ESEC 3210

Reinforces and expands upon the materials and clinical skills learned as an EMT. Integrates prior learning with enhanced advanced life support concepts and skills. Emphasizes patient assessment and recognition of significant findings, pre-hospital diagnosis and differential diagnosis, and treatment strategies for medical and geriatric patients. Course fee of $17 applies.

ESEC 3245
Paramedic IV Lab-Medical Emergencies
1:0:3 Fall, Spring, Summer
* Prerequisite(s): University Advanced Standing
* Corequisite(s): ESEC 3240

Reinforces concepts and clinical skills discussed in the ESEC 3240. Emphasizes patient assessment, airway management, pathophysiology, pharmacology, critical decision-making skills and appropriate interventions while caring for medically emergent patients. Assessment based management and evidenced based practices will be applied. Course lab fee of $32 applies.

ESEC 3250
Paramedic V-Obstetric and Pediatric Patient Care
3:3:0 Fall, Spring, Summer
* Prerequisite(s): Matriculated into the paramedic program and University Advanced Standing
* Corequisite(s): ESEC 3255
* Prerequisite(s) or Corequisite(s): ESEC 3210

Reinforces and expands upon the materials and clinical skills learned as an EMT. Integrates prior learning with enhanced advanced life support concepts and skills. Emphasizes patient assessment and recognition of significant findings, pre-hospital diagnosis and differential diagnosis, and treatment strategies for obstetric and pediatric patients. Course fee of $23 applies.

ESEC 3255
Paramedic V Lab-Obstetric and Pediatric Emergencies
1:0:3 Fall, Spring, Summer
* Prerequisite(s): University Advanced Standing
* Corequisite(s): ESEC 3250

Reinforces concepts and clinical skills discussed in the ESEC 3250. Emphasizes patient assessment, airway management, pathophysiology, pharmacology, critical decision-making skills and appropriate interventions while caring for patients with obstetrics and pediatric emergencies. Assessment based management and evidenced based practices will be applied. Course fee of $56 applies.

ESEC 4150
Critical Care Emergency Medical Transport Program
6:4:6 On Sufficient Demand
* Prerequisite(s): Department Approval and University Advanced Standing

Brings paramedics and nurses together in an effort to bridge the gap between pre-hospital and hospital care. Prepares specialized care providers to have an understanding of both aspects of patient care, and to use that understanding to provide a higher level of care to critical patients during transport. Designed to prepare paramedics and nurses to function as members of a critical care transport team. Offers an understanding of the special needs of critical patients during transport, become familiar with the purpose and mechanisms of hospital procedures and equipment, and develop the skills to maintain the stability of hospital equipment and procedures during transport.

ESEC 4210
Paramedic VI-Research
2:2:0 Fall, Spring, Summer
* Prerequisite(s): University Advanced Standing
* Prerequisite(s) or Corequisite(s): ESEC 3240, ESEC 3245

Provides opportunity to apply previously learned knowledge and skills in on-line scenario activities, research current EMS trends, as well as recognition assignments for clinical site preceptors.

ESEC 4220
Paramedic VII-Clinical Internship Hospital and Field Phase I and II
4:0:12 Fall, Spring, Summer
* Prerequisite(s): ESEC 3250, ESEC 3255 and University Advanced Standing

Provides the paramedic student with an opportunity to apply previously learned knowledge and skills while in a supervised clinical setting. Rotations include: Emergency Departments, Medical/Surgical Intensive Care Units, Labor and Delivery, Psychiatric, and Prehospital experiences with field-based internships. Course fee of $57 applies. Course lab fee of $18 applies.

ESEC 4230
Paramedic VIII-Practical Preparation and Testing
3:3:0 Fall, Spring, Summer
* Prerequisite(s): ESEC 3210, ESEC 3220, ESEC 3225, ESEC 3230, ESEC 3235, ESEC 3240, ESEC 3245, ESEC 3250, ESEC 3255, and University Advanced Standing
* Prerequisite(s) or Corequisite(s): ESEC 4210, ESEC 4220

Provides practical and small group lecture activities using current assessment and treatment techniques for cardiac, multiple system trauma, medical, and pediatric victims. Reinforces patient priority assessment and management concepts needed for successful patient outcomes. National Registry psychomotor preparation and testing included. Course fee of $139 applies.
Emergency Services (ES)

ES 1150 Community Emergency Preparedness 3:3:0 Fall, Spring, Summer
Examines emergency and crisis preparedness for the individual, family, and community as practiced at the state, national and international levels. Explores prevention and disaster recovery strategies against all hazards threats to home, neighborhood and community whether natural or human caused. May be delivered online. Course fee of $51 for equipment/supplies applies.

ES 1160 Responders Role in Emergencies and Disasters 3:3:0 On Sufficient Demand
* Prerequisite(s) or Corequisite(s): ENGL 1010 or ENGH 1005 or department permission
Prepares emergency services students to respond effectively in both day-to-day emergency circumstances as well as extreme disasters. Examines the theory and skills to effectively handle emergency operations and deal with people in the context of emergencies. This course will be offered as a hybrid or online course.

ES 1170 Citizen Role in Emergencies and Disasters 3:3:0 On Sufficient Demand
* Prerequisite(s): ENGL 1010 or ENGH 1005 recommended
Designed for students of emergency management and volunteer private agencies. Discusses disaster preparedness, planning, and mitigation. Extends the discussion of the public role in emergencies and disasters to disaster response and recovery. Describes the variety of actions taken by individuals, private and voluntary organizations, first responders, and government agencies in response to a disaster and to assist in recovery.

ES 2130 Terrorism and the Emergency Services 3:3:0 Fall, Spring, Summer
* Prerequisite(s): ENGL 1010 or ENGH 1005
Deals with the threats associated with terrorism as they relate to emergency service response. Examines past acts of terror along with present and future threats and their connection to emergency services planning and response. Identifies various aspects of security and control in correlation to the emergency response operations.

ES 2210 Community Mitigation Response and Recovery 3:3:0 On Sufficient Demand
* Prerequisite(s): ENGL1010 recommended
Provides an introduction to emergency management for community members, emergency service volunteers, and future disaster relief workers. Prepares them with the knowledge and the skills to allow them to work in emergency services in government or non-profit agencies. Introduces emergency management principles, doctrines and authorities, emergency management functions and capabilities, and the integrated emergency management system. Addresses the coordination of various systems, networks, and agreements among various governmental and other organizations under the National Incident Management System (NIMS).

ES 2220 Resiliency and Vulnerability in Crises 3:3:0 On Sufficient Demand
* Prerequisite(s): ENGL 1010 or ENGH 1005 recommended
Expands the knowledge of disasters so that students of emergency management, volunteers, and community members understand the nature of multiple hazards, both man-made and natural, and are aware of their impact on vulnerable populations. Presents risk management tools to assist in mitigating, planning and preparing for disasters.

ES 2230 Non-profit Organizations and Volunteerism 3:3:0 On Sufficient Demand
* Prerequisite(s): ENGL1010 recommended
Improves participant abilities to deal with a broad range of issues in the management of volunteers. Covers publicity and recruitment, skill development and maintenance, and motivation strategies to promote continued involvement and quality performance. Addresses the planning and operations of an effective donations management system, and explores the coordination of state and local government and representatives of Volunteer Organizations Active in Disaster (VOAD) when working with undesignated and spontaneous volunteers during a disaster.

ES 290R Special Topics in Emergency Services 1 to 3:1 to 3:0 On Sufficient Demand
* Prerequisite(s): ESFF 1000

ESFF 1120 Principles of Fire and Emergency Services Safety and Survival 3:3:0 Fall, Spring, Summer
Introduces the basic principles and history related to the national firefighter life safety initiatives. Focuses on the need for cultural and behavior change throughout the emergency services.
Course Descriptions

ESFF 1210 Firefighting Skills I 4:0:12 On Sufficient Demand
* Corequisite(s): ESFF 1010
Teaches basic manipulative skills according to NFPA 1001 Firefighter Professional Standards, Level I. Includes using forcible entry tools, using self-contained breathing apparatus, tying knots and using ropes, handling salvage covers, utilizing hose nozzles and appliances, manipulating ladders, ventilation practices, search for and removal of victims, sprinkler operations, initiating emergency response, and safety procedures. Students are required to furnish their own approved firefighter safety clothing as follows: gloves, boots, helmet, and hood. Course fee of $95 for specialized clothing and materials applies.

ESFF 1220 Firefighting Fundamentals and Skills II 3:1:6 On Sufficient Demand
* Prerequisite(s): ESFF 1010 or Departmental approval
Teaches intermediate skills as described in NFPA 1001 Level II. Builds upon the basic skills taught in ESFF 1010 and introduces new skills and knowledge in water supplies, portable extinguisher practices, inspection techniques, and rescue operations. Course fee of $100 for specialized clothing and materials applies.

ESFF 1340 Hazardous Materials First Responder 3:3:0 On Sufficient Demand
* Prerequisite(s) or Corequisite(s): ESFF 1000 or department approval
For first year Fire Science students. Addresses the Hazardous Materials First Responder requirements of NFPA 472 and 29 CFR 1910.120. Includes definitions and classes of hazardous materials; physiological and toxicological considerations; DOT, UN and NFPA 704 labeling and placarding systems; container types and container identification. Completers should be able to conduct an incident size-up using the North American Emergency Response Guide, use personal protective equipment and conduct a decontamination procedure. Completers should be prepared to certify at both the Hazardous Materials Awareness and Operations levels. Course fee of $119 for materials, state services & testing applies.

ESFF 1360 Recruit Candidate Academy Internship 3:3:0 Fall, Spring, Summer
* Prerequisite(s): ESFF 1330, ESFF 1340, instructor's recommendation, and internship coordinator's approval.
For students who have completed the Recruit Candidate Academy courses and desire an opportunity to apply the knowledge, skills, and abilities learned in a realistic environment. Student interns will experience the fire service as a fully integrated member of a fire company in a career fire department. Additionally, the internship will emphasize the student's work ethic, attitude, and ability to adapt to highly stressful and sometimes dangerous situations. May be graded credit/no credit. Course lab fee of $200 for specialized clothing and materials applies.

ESFF 1370 Fundamentals of Apparatus Operation 3:3:0 On Sufficient Demand
Provides basic information on driving and operating a variety of fire apparatus by meeting the knowledge requirements as listed in NFPA 1000 Professional Qualifications for Fire Apparatus Driver Operator. Includes fire pump operation, emergency driving techniques, regulations and laws, fire ground operations, apparatus maintenance and testing procedures.

ESFF 1380 Fire Apparatus Skill 3:0:9 On Sufficient Demand
* Prerequisite(s): ESFF 1220 or ESFF 1330
Teaches manipulative skills as described in Firefighter Professional Qualification Standard NFPA 1002. Includes fire apparatus operation, defensive driving, emergency driving techniques, and equipment care and maintenance. Emphasizes hands-on lab activities. Course fee of $55 for transportation, state services & testing applies.

ESFF 2100 Introduction to Emergency Services Leadership 3:3:0 Fall, Spring, Summer
* Prerequisite(s): ENGL 1010 or ENGH 1005
Explores the aspiring and current emergency services learner's desire to serve and relates it to the theoretical constructs and characteristics of servant leadership. Discusses the roles and responsibilities of leadership/ followership, internal and external, associated with the emergency services. Develops basic leadership/ followership traits, based upon the theory of servant leadership.

ESFF 2410 Hazardous Materials Technician Fundamentals 3:3:0 On Sufficient Demand
* Prerequisite(s): ESFF 1340
Teaches the knowledge requirements of NFPA 471, 472, and CFR 1910.120 regulation for a Hazardous Materials Technician. Includes emergency response plans, classification of materials, ICS roles, personnel protective equipment needs, masks, containment and confinement concepts, decon requirements, termination concepts, toxicological and chemical terms and definitions.

ESFF 2420 Hazardous Materials Technician Skills 2:0:6 On Sufficient Demand
* Prerequisite(s): ESFF 2410
Presents the manipulative skill requirements of NFPA 471, 472, and CFR 1910.120 regulation for a Hazardous Materials Technician. Teaches handling simulated incidents, classifying materials, performing in ICS roles, using personnel protective equipment, containment and confinement operations, setting up and operating decon, diking, plugging, and patching operations. Course fee of $55 for specialized clothing, state services & testing applies.

ESFF 2430 Hazardous Materials Chemistry 3:2:3 On Sufficient Demand
Presents in-depth chemical information for hazardous materials responders. Teaches basic knowledge of how to evaluate potential hazards and behaviors of hazardous materials. Provides the underlying reasons for chemical reactions of hazardous materials. Includes decision-making abilities, safe operations, and handling. Course fee of $40 for specialized clothing, materials applies.

ESFF 250A Firefighter Recruit Candidate Academy I 8:6:6 Fall, Spring
* Prerequisite(s): Matriculated into the Recruit Candidate Academy or Department approval
Addresses the first part of the cognitive and psychomotor requirements of Firefighter I and Firefighter II certification. Includes basic firefighting topics and related skills, including fire behavior, building construction, personal protective equipment, tools, appliances, firefighter safety, forcible entry, and apparatus. Prepares students to certify at the Fire Fighter I and Fire Fighter II levels.

ESFF 250B Firefighter Recruit Candidate Academy II 8:6:6 Fall, Spring
* Prerequisite(s): Matriculated into the Recruit Candidate Academy or Department approval
Addresses the second part of the cognitive and psychomotor requirements of Firefighter I, Firefighter II, and Hazardous Materials Awareness and Operations certification. Includes basic firefighting topics and related skills. Addresses the Hazardous Materials First Responder requirements of NFPA 472 and 29 CFR 1910.120. Includes definitions, classes of hazardous materials, physiological and toxicological considerations, and labeling and placarding systems. Prepares students to certify at the Fire Fighter I, Fire Fighter II, and Hazardous Materials Awareness and Operations levels.

ESFF 2700 Technical Rescue Principles 3:2:3 On Sufficient Demand
For those with limited fire and emergency services training. Addresses the prerequisite knowledge and skills for technical rescue job performance. Applies the Incident Command System to the management of technical rescue operations, resources and hazards. Includes search and rescue techniques, victim care and extrication, and the use of ropes and rigging. Course fee of $70 for equipment, materials applies.

ESFF 2710 Environmental Rescue 3:2:3 On Sufficient Demand
* Prerequisite(s): ESFF 1220
Includes analysis and simulation of problems such as wilderness search and rescue, still and swift water rescue, avalanche and mountain rescue. Discusses disaster planning and management as well as rescues from the work place and industrial settings. Course fee of $70 for specialized clothing, materials, and transportation applies.
esff 2730
rope rescue
3:2:3  on sufficient demand
* prerequisite(s): esff 1330 and esff 1340; or departmental approval

designed to meet the rope rescue job performance requirements of nfpa 1006, standard for rescue technician professional qualifications. addresses various types and configurations of rope rescue systems. includes compound mechanical advantage systems, rescuer suspension systems, high-angle and vertical victim rescue systems, construction and operation of highline systems, and ascent/ decent procedures. course fee of $70 for equipment, materials applies.

esff 281r
emergency services internship
1 to 8:1 to 8:0  fall, spring, summer
* prerequisite(s): esff 1000 or sufficient emergency services work experience, or instructor approval.

designed for emergency services majors. provides paid, on-the-job work experience. work experience and the correlated class are coordinated by the coordinator and director who must approve enrollment. includes student, employer, and coordinator evaluations, on-site work visits, written assignments, and oral presentations. gives experience in writing and completing individualized work objectives that improve present work performance. may be repeated for a maximum of 8 credits towards graduation. may be graded credit/no credit.

efso 1100
fire behavior and combustion
3:3:0  fall
explores the theories and fundamentals of how and why fires start, spread, and how they are controlled. addresses the fire problem in america, background of research, and how to approach the study of fire. provides an overview of various flames, smoldering, and spontaneous combustion.

esff 1110
fire prevention
3:3:0  fall
provides fundamental information regarding the history and philosophy of fire prevention. introduces the organization and operation of a fire prevention bureau. covers the use of fire codes, identification and correction of fire hazards. discusses the relationships of fire prevention with built-in fire protection systems, fire investigation, and fire and life-safety education.

esff 1350
fire protection hydraulics and water supply
3:3:0  on sufficient demand
introduces basic mathematical operations, including fractions, decimals, percentages, measurements, statistics, graphs, formulas and equations. completers should be able to apply mathematical skills in solving basic fire service hydraulic and water supply problems.

esff 2020
incident command
3:3:0  on sufficient demand
* prerequisite(s): esff 1000 or sufficient emergency services work experiences.

presents the basic principles of managing an emergency scene through the utilization of an incident command system for simple single unit, to complex multi unit response. requires use of personnel, equipment, and additional resources to manage an incident by completing a size-up, analyze, develop and implement an action plan, maintain on scene accountability of personnel and resources by following ims principles. meets the incident command requirements for fire officer i, fire officer ii, nfpa 1021, presidential directive #5, and nims compliance.

esff 2030
fire inspector i
3:3:0  on sufficient demand
* prerequisite(s): esff 1000 or sufficient emergency services work experiences.

for fire science and building inspection technology students. addresses the principles of fire inspection and application of the international fire code. topics include identification of fire hazards, fire prevention measures, inspection techniques, and pre-fire planning. includes classroom discussion and actual inspections of both under-construction and occupied buildings. successful completers should be prepared to attain fire inspector i certification. course fee of $90 for state services & testing, materials applies.

esff 2050
fire protection and detection systems
3:3:0  spring
* prerequisite(s): esff 1000 or sufficient emergency services work experiences.

teaches students to become familiar with the various types of fire protection and detection systems. explains how each type of system functions, where such systems are required by code and how the various systems are serviced and maintained. course fee of $17 for materials applies.

esff 2080
building construction for the fire services
3:3:0  spring
* prerequisite(s): esff 1000 or sufficient emergency services work experiences.

for second year fire science students. explores components of building construction that relate to fire and life safety. explains construction and design factors to be considered during fire inspections, pre-fire planning and fire fighting operations. emphasis is placed on firefighter safety.

esff 2100
fire officer i supervision and leadership
3:3:0  on sufficient demand
* prerequisite(s): esff 1000 or sufficient emergency services work experiences.

for second year fire science students and experienced firefighters. addresses the nfpa requirements for fire officer i. discusses human resource management, community and government relations, application of fire department policies, fire investigation procedures, emergency service delivery and safety considerations. completers should be prepared to certify as fire officer i. course fee of $40 for state services & testing applies.

esff 2110
fire officer i and ii
3:3:0  on sufficient demand
* prerequisite(s): esff 1000 or sufficient emergency services work experiences.

teaches the nfpa 1041 requirements for instructor i and ii. includes job factors that influence teaching, developing behavior objectives and lesson plans, organizing the learning environment, methods of instruction, training aids, and principles of testing and evaluations. lab activities include classroom presentations, preparing audiovisuals, and developing objectives. course fee of $83 for state services & testing, materials applies.

esff 211a
fire service instructor i
1:1:0  on sufficient demand
* prerequisite(s): esff 1000 or sufficient emergency services work experiences.

for second year fire science students. addresses the knowledge and skills required to deliver a training lesson from a prepared outline and instructor’s guide. includes psychology of learning, instructional techniques, instructional media, evaluation techniques, and legal considerations. completers should be prepared to instruct a fire service audience and certify as fire service instructor i. course fee of $43 for state services & testing, materials applies.

esff 211b
fire service instructor ii
2:2:0  on sufficient demand
* prerequisite(s): esff 211a or departmental permission

for those who have already completed esff 211a or attained fire service instructor i certification. explores job factors that influence teaching, developing behavior objectives and lesson plans, organizing the learning environment, methods of instruction, training aids, and principles of testing and evaluations. completers should be able to prepare and conduct classroom presentations, prepare audiovisual materials and equipment, and be prepared to certify as fire service instructor ii. course fee of $40 for state services & testing applies.

esff 2200
fire officer ii
3:3:0  on sufficient demand
* prerequisite(s): esff 1000 or sufficient emergency services work experiences.

addresses the administrative skills and abilities required for fire officer ii certification. includes occupational health and safety concepts, injury prevention, risk management, application of departmental policies and procedures, preparation of budget requests, preparation of news releases, and preparation and maintenance of departmental records and reports.

esff 2310
fire investigator i
3:3:0  on sufficient demand
* prerequisite(s): esff 1000 or sufficient emergency services work experiences.

presents basic requirements for fire investigators as found in nfpa 1033. includes scene examination, documenting the scene, evidence collection and preservation, interviewing techniques, post incident investigation and presenting investigation findings.
ESFO 2320
Fire Investigator II
3:3:0  On Sufficient Demand
* Prerequisite(s): ESFO 2310 or Department Approval
Presents advanced skills for fire investigators. Explores all aspects of the investigative process, scene documentation, advance collection tools and evidence preservation, advanced investigative techniques, case preparation, presenting findings in a legal/court proceeding.

ESFO 2330
Public Fire Education I
2:2:0  On Sufficient Demand
* Prerequisite(s): ESFO 1000 or sufficient emergency services work experiences.
Teaches professional qualifications of NFPA 1035. Identifies fire risks and problems in a community. Teaches selecting, designing, and implementing fire prevention and education programs.

ESFO 2400
Fire Officer Work Experience
3:3:0  On Sufficient Demand
* Prerequisite(s): ESFO 2020 and ESFO 2200
Provides an opportunity for students to complete the Fire Officer II work place performance requirements of NFPA 1021, Standard for Fire Officer Professional Qualifications. Under the supervision of an experienced fire officer, requires meeting performance objectives in areas of human resource management, community relations, governmental relations, inspection procedures, investigation procedures, emergency service operations, emergency services planning and personnel safety procedures, through a non-paid work experience.

English as a Second Lang (ESL)

ESL 0100
Basic English Language Immersion
12:12:0  Fall, Spring, Summer
* Prerequisite(s): Department Approval
For beginning ESL students, with little or no previous English experience. Integrates essential language tools and skills-reading, writing, listening, speaking, and vocabulary-needed to perform basic communicative tasks. Emphasizes building a learning community within the classroom. Includes lecture, discussion, collaborative class work, and outside experience with native English speakers.

ESL 0810
Beginning Listening/Speaking Level I
4:4:0  Fall, Spring, Summer
* Prerequisite(s): Department Approval
For students whose native language is other than English with little or no previous English learning experience. Explores use of simple statements, questions, and commands. Develops vocabulary on concrete topics. Provides listening opportunities in a variety of contexts. Introduces concepts of pronunciation, intonation, and stress. Includes weekly use of the ELL Language Lab where beginning listening skills are emphasized. Focuses on communicative interaction with classmates and authentic conversation practice with native English speakers.

ESL 0820
Beginning Reading and Writing Level I
5:5:0  Fall, Spring, Summer
* Prerequisite(s): Department Approval
For beginning ESL students, with little or no previous English experience. Teaches basic competence and fluency in reading and writing. Focuses on reading fluently with meaningful comprehension and natural vocabulary acquisition. Covers writing sentences and short paragraphs on familiar topics. Includes weekly use of the ELL computer lab to practice reading and writing skills.

ESL 0821
Beginning Reading Level I
4:4:0  Fall, Spring, Summer
For students whose native language is other than English. Focuses on reading skills, specifically essential phonetic skills needed to decode English words and sounds. Studies comprehension of main ideas of short academic texts, examines plots from simple novels, and develops acquisition of basic interpersonal vocabulary though context cues and English dictionary usage. Encourages reading for pleasure and for information.

ESL 0825
Beginning Vocabulary Level I
4:4:0  Fall, Spring, Summer
* Prerequisite(s): Department Approval
For beginning ESL students, with little or no previous English experience. Teaches a 1000-word vocabulary necessary for English survival. Explores vocabulary in context around relevant themes, focusing on communicative practice.

ESL 0830
Beginning Writing Level I
5:5:0  Fall, Spring, Summer
For students whose native language is other than English. Introduces English writing conventions including idea development, organization, grammar usage, and editing. Explains construction of simple and compound sentences into short paragraphs. Includes weekly use of the ELL computer classroom where beginning writing skills are emphasized and practiced.

ESL 0840
Beginning Grammar Level I
5:5:0  Fall, Spring, Summer
* Prerequisite(s): Department Approval
For students whose native language is other than English with little or no English experience. Focuses on helping students recognize beginning grammar structures and correctly incorporate them into their speech and writing. Introduces correct word order, simple verb tenses, irregular and helping verbs, question formation, adverbs of frequency, pronouns and articles.

ESL 0910
High-Beginning Listening/Speaking Level II
4:4:0  Fall, Spring, Summer
* Prerequisite(s): Department Approval
For students whose native language is other than English with some previous English learning experience. Explores use of simple statements, questions, and commands. Develops vocabulary on concrete topics. Provides listening opportunities in a variety of contexts. Introduces concepts of pronunciation, intonation, and stress. Includes weekly use of the ELL Language Lab where beginning listening skills are emphasized. Focuses on communicative interaction with classmates and authentic conversation practice with native English speakers.

ESL 0911
High-Beginning Pronunciation Level II
1:1:0  Fall, Spring, Summer
* Prerequisite(s): Department Approval
For high-beginning ESL speakers with some previous English experience. Introduces phonetic alphabet for corresponding English alphabet sounds. Focuses on pronunciation of individual sounds along with how to produce naturally sounding syllables, words, and sentences through intonation, stress and linking.

ESL 0920
High-Beginning Reading Level II
4:4:0  Fall, Spring, Summer
* Prerequisite(s): Department Approval
For students whose native language is other than English. Studies comprehension of main ideas and details of short academic texts, examines literary themes and plots from simple novels, and develops basic interpersonal vocabulary as well as some academic vocabulary though context cues and English dictionary usage. Encourages reading for pleasure and for information. Introduces students to academic and job-related reading skills.

ESL 0930
High-Beginning Writing Level II
5:5:0  Fall, Spring, Summer
* Prerequisite(s): Department Approval
For students whose native language is other than English. Introduces English writing conventions including pre-writing, idea development, organization, genre style, word choice, applied grammar usage, editing, and technical accuracy. Explains construction of simple and complex sentences into well-formed paragraphs. Includes weekly use of the ELL Computer Classroom where beginning writing skills are emphasized and practiced.

ESL 0940
High-Beginning Grammar Level II
5:5:0  Fall, Spring, Summer
* Prerequisite(s): Department Approval
For students whose native language is other than English. Focuses on helping students recognize high-beginning grammar structures and correctly incorporate them into their speech and writing. Focuses on verb tenses, irregular and helping verbs, question formation, adverbs of frequency, pronouns, and articles.
ESL 1210
Low-Intermediate Listening/Speaking Level III
4:4:0
Fall, Spring, Summer
* Prerequisite(s): Department Approval
For students whose native language is other than English. Expands use of simple statements, questions, and commands on familiar topics to academic conversations and lectures. Develops vocabulary on concrete and abstract topics. Studies low-intermediate concepts of pronunciation, intonation, stress, and reductions. Includes weekly use of the ELL Language Lab where low-intermediate listening skills are emphasized and practiced.

ESL 1211
Low-Intermediate Pronunciation Level III
1:1:0
Fall, Spring, Summer
* Prerequisite(s): Department Approval
For low-intermediate ESL speakers with previous English experience. Introduces International Phonetic Alphabet symbols that correspond to American English alphabet sounds. Focuses on pronunciation of individual sounds along with how to pronounce naturally sounding syllables, words, and sentences through intonation, stress, and linking.

ESL 1220
Low-Intermediate Reading Level III
4:4:0
Fall, Spring, Summer
* Prerequisite(s): Department Approval
For students whose native language is other than English. Studies comprehension of main ideas and supporting details of low-intermediate texts and acquisition of vocabulary through context and utilizing American English dictionaries. Focuses on interpreting literary themes and analyzing academic and literary texts. Encourages reading for pleasure and for information.

ESL 1230
Low-Intermediate Writing Level III
5:5:0
Fall, Spring, Summer
* Prerequisite(s): Department Approval
For students whose native language is other than English. Studies low-intermediate English writing conventions including pre-writing, idea development, organization, word choice, and editing for organization and grammatical accuracy. Focuses on short academic writing tasks that culminate into a multi-paragraph essay. Includes weekly use of the ELL Computer Classroom where low-intermediate writing skills are emphasized and practiced.

ESL 1240
Low-Intermediate Grammar Level III
5:5:0
Fall, Spring, Summer
* Prerequisite(s): Department Approval
For students whose native language is other than English. Studies low-intermediate English grammar usage in written and verbal speech. Focuses on verb tenses, phrasal verbs, modals, question formation, pronouns, and sentence connectives.

ESL 1260
Intermediate Listening/Speaking Level IV
4:4:0
Fall, Spring, Summer
* Prerequisite(s): Department Approval
For students whose native language is other than English. Expands use of statements, questions, and commands on familiar topics to academic conversations and lectures. Develops vocabulary on concrete and abstract topics. Studies low to high intermediate concepts of pronunciation, intonation, stress, and reductions. Includes weekly use of the UVU Language Lab where intermediate listening skills are emphasized and practiced.

ESL 1261
Intermediate Pronunciation IV
1:1:0
Fall, Spring, Summer
* Prerequisite(s): Department Approval
For intermediate ESL speakers with previous English experience. Introduces International Phonetic Alphabet symbols that correspond to American English phonemes. Focuses on pronunciation of individual sounds along with how to pronounce naturally sounding syllables, words, and sentences through intonation, stress, and linking.

ESL 1270
Intermediate Reading Level IV
4:4:0
Fall, Spring, Summer
* Prerequisite(s): Department Approval
For students whose native language is other than English. Studies comprehension of main ideas and supporting details, acquisition of intermediate vocabulary through context and utilizing American English dictionaries, interpreting literary themes, and critically analyzing academic and literary texts. Encourages reading for pleasure and for information.

ESL 1280
Intermediate Writing Level IV
5:5:0
Fall, Spring, Summer
* Prerequisite(s): Department Approval
For students whose native language is other than English. Studies intermediate English writing conventions such as pre-writing, idea development, organization, word choice, and editing work for grammatical accuracy. Focuses on writing well written paragraphs that evolve into essays. Includes weekly use of the ELL computer lab where intermediate writing skills are emphasized and practiced.

ESL 1290
Intermediate Grammar Level IV
5:5:0
Fall, Spring, Summer
* Prerequisite(s): Department Approval
For students whose native language is other than English. Studies intermediate English grammar usage in written and verbal speech. Focuses on parts of speech, verb tenses, nouns, comparisons, modals, adjectives, adjective clauses, infinitives, and the passive construction.

ESL 1310
High-Intermediate Listening/Speaking Level V
4:4:0
Fall, Spring, Summer
* Prerequisite(s): Department Approval
For students whose native language is other than English. Explores listening strategies for academic news programs and academic lectures. Emphasizes active participation in academic and social conversations. Develops ability to give academic presentations. Studies high-intermediate concepts of pronunciation, intonation, stress, and reductions. Includes weekly use of the UVU Language Lab where high-intermediate listening skills are emphasized and practiced.

ESL 1311
High-Intermediate Pronunciation Level V
1:1:0
Fall, Spring, Summer
* Prerequisite(s): Department Approval
For high-intermediate ESL speakers with previous English experience. Introduces and reviews phonetic alphabet for corresponding English alphabet sounds. Focuses on pronunciation of individual sounds along with how to produce naturally sounding syllables, words, and sentences through intonation, stress, linking, and reductions.

ESL 1320
High-Intermediate Reading Level V
4:4:0
Fall, Spring, Summer
* Prerequisite(s): Department Approval
For students whose native language is other than English. Studies comprehension of main ideas and supporting details of academic texts, making inferences and expanding vocabulary through context and English dictionary usage. Encourages students to read for pleasure and increase fluency through extensive reading outside of class. Develops critical reading and thinking skills.

ESL 1330
High-Intermediate Writing Level V
5:5:0
Fall, Spring, Summer
* Prerequisite(s): Department Approval
For students whose native language is other than English. Studies high-intermediate English writing conventions including pre-writing techniques and idea development, organization of written papers according to genre expectations, and editing and revising work for grammatical accuracy. Focuses on writing 5+ paragraph essays, and letters or articles from 2-5 pages in length. Includes weekly use of the ELL computer lab where high-intermediate writing skills are emphasized and practiced.

ESL 1340
High-Intermediate Grammar Level V
5:5:0
Fall, Spring, Summer
* Prerequisite(s): Department Approval
For students whose native language is other than English. Studies high-intermediate English grammar usage in written and verbal speech. Focuses on higher level verb tenses and their related structures, use of nouns and adjective clauses, passive voice and definite/indefinite articles. Expands use of modal auxiliaries, conditionals, and verb complementation using gerunds and infinitives.
Course Descriptions

ESL 2111  
Advanced Pronunciation  
1:1:0  
Fall, Spring, Summer  
* Prerequisite(s): Department Approval  
For advanced ESL speakers with previous English experience. Reviews International Phonetic Alphabet for corresponding English alphabet sounds. Focuses on pronunciation of individual sounds along with how to produce naturally sounding syllables, words, and sentences through intonation, stress, rhythm, linking and reductions.

ESL 211G  
Advanced Listening Speaking  
4:4:0  
Fall, Spring, Summer  
* Prerequisite(s): Department Approval  
For students whose native language is other than English. Explores American culture through an in-depth critical analysis of American fundamental values and beliefs while eliciting critical reflection upon the learners’ own native cultures. Provides a variety of speaking opportunities from informal discussions to public speaking. Emphasizes listening in advanced academic situations such as lecture note-taking and summarizing audio news excerpts. Develops academic vocabulary, increases fluency, reduces grammatical errors, and incorporates advanced features of pronunciation, stress, intonation and linking in oral communication. Includes weekly use of the UVU Language Lab.

ESL 2120  
Advanced Reading Vocabulary  
4:4:0  
Fall, Spring, Summer  
* Prerequisite(s): Department Approval  
For students whose native language is other than English. Emphasizes comprehension and identification of stated main ideas and supporting details, inferences, skimming, scanning, recognizing patterns of organization and author’s purpose, interpreting literature, and using advanced level vocabulary. Includes lectures, group discussions, lab activities, and multimedia. Satisfies AAS Humanities requirements.

ESL 2130  
Advanced Composition  
5:5:0  
Fall, Spring, Summer  
* Prerequisite(s): Department Approval  
For international students whose native language is other than English. Using the English language, emphasizes developmental activities in essay organization, outlining, essay writing, editing and punctuation, and research paper writing. Includes lectures, small and large group activities, peer editing, and lab activities. Satisfies AAS Humanities requirements. Satisfies AAS Humanities requirements.

ESL 2140  
Advanced Grammar  
5:5:0  
Fall, Spring, Summer  
* Prerequisite(s): Department Approval  
For students whose native language is other than English. Studies advanced English usage, correct speech and writing forms and patterns related to tense, time, parts of speech, modifiers, clauses, phrases, conditionals, active passive voice, and modals. Emphasizes grammatical fluency in English speech and writing. Satisfies AAS Humanities requirements.

ESL 2150  
Academic Skills--TOEFL  
5:5:0  
Fall, Spring, Summer  
* Prerequisite(s): ESL 1310, ESL 1320, ESL 1330, ESL 1340 and ESL Compass Test with a score of 81 Focuses on the integration of all four language skills. Prepares students to pass the TOEFL test. Provides ample opportunities to practice integrated speaking, reading, writing and listening tasks commonly encountered in academic settings.

ESL 2160  
Aviation English--Advanced Listening and Speaking  
3:3:0  
* Prerequisite(s): Department Approval  
Prepares non-native English speakers to achieve operational English language proficiency in radiotelephony communication within the field of Aviation Science. Focuses primarily on pilot-controller communication in the English language. Provides opportunities to improve speaking, pronunciation, and overall English fluency in both routine and non-routine procedures using standard aviation phraseology and plain language. Provides opportunities to improve listening and comprehension skills through authentic pilot-controller radio recordings and dialogues. Builds vocabulary in both standard phraseology and non-routine domains. Addresses communication skills in the language skill areas of pronunciation, grammatical structures, vocabulary, fluency, and comprehension.

Emergency Services Management (ESMG)

ESMG 310G  
Introduction to Homeland Security  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): (ENGL 1010 or ENGL 1005) and University Advanced Standing  
Introduces student to global and intercultural issues regarding homeland security at the national, regional, state and local levels. Discusses the history of homeland security, including its political history, and evolution, particularly as it relates to terrorism. Addresses demands state and local authorities must meet when dealing with national programs and requirements which affect funding and operations on the state and local level during natural or man-made disasters and emergencies.

ESMG 3150  
Principles of Management for the Emergency Services  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): University Advanced Standing  
* Prerequisite(s) or Corequisite(s): ESMG 310G  
Examines critical skills used in the management of emergency services operations. Proposes possible applications of the skills using real-life examples. Emphasizes the development process and analytical skills necessary to assess problems in the workplace and select appropriate solutions.

ESMG 3200  
Health and Safety Program Management  
3:3:0  
Fall  
* Prerequisite(s): University Advanced Standing  
* Prerequisite(s) or Corequisite(s): ESMG 310G  
Teaches development, management, and evaluation of departmental safety programs. Includes compilation of accident and injury data from local jurisdictions. Develops programs that target safety concerns identified from research. Students will develop a plan to track effectiveness of safety programs to reduce personal injuries and property damage resulting from accidents within their department.

ESMG 3250  
Managing Emergency Medical Services  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): University Advanced Standing  
* Prerequisite(s) or Corequisite(s): ESMG 310G  
Teaches action planning procedures for emergency incidents requiring multiple agency operations. Includes determining resources, assigning and placement of resources to mitigate incidents requiring multi-agency responses. Studies coordination of changing roles and responsibilities of fire service based EMS providers with the requirements set forth by local ordinances, state statutes, and federal laws. Presents personnel, resource management, and quality improvement techniques.

ESMG 3300  
Master Planning for Public Emergency Services  
3:3:0  
Fall  
* Prerequisite(s): University Advanced Standing  
* Prerequisite(s) or Corequisite(s): ESMG 310G  
Prepares students for developing long-range plans, given current organization status and local resources, emphasizing the attainment of both organizational, and community needs. Teaches planning for growth and for major disasters. Integrates resources and budgets while mitigating the impacts on a community. Develops and evaluates projected training requirements.

ESMG 3350  
Analytical Research Approaches to Public Emergency Services  
3:3:0  
Spring  
* Prerequisite(s): University Advanced Standing  
* Prerequisite(s) or Corequisite(s): ESMG 310G  
Explores basic research designs, the use of selective analytical tools, and common issues faced by public emergency services managers. Examines tools and techniques using research methods to facilitate the decision making process in public emergency services organizations.

ESMG 3400  
Critical Infrastructure Protection  
3:3:0  
Fall, Summer  
* Prerequisite(s): ESMG 310G and University Advanced Standing  
Introduces critical infrastructure and key resources (CI/KR) and explores the interdependencies between government and private industry in sustaining and protecting critical infrastructure. Provides an overview of the elements and processes to develop and sustain successful critical infrastructure partnerships and to protect critical infrastructure and key resources.
ESMG 3600 (Cross-listed with: CJ 3600) Psychology of Emergency Services 3:3:0 Fall, Spring, Summer
* Prerequisite(s): ENGL 2010 and University Advanced Standing
* Prerequisite(s) or Corequisite(s): ESMG 310G
Examines the general psychological aspects of police, fire, and emergency medical services responders including dimensions of personality, family, organizational, cultural and diversity issues. Examines models of emergency and crisis decision making. Analyzes stress, anxiety, and trauma theories and clinical issues and examines current interventions being used for related disorders and building resilience.

ESMG 3710 Comparative Approaches to Homeland Security 3:3:0 Fall, Spring
* Prerequisite(s): University Advanced Standing
Discusses shared terrorism threats as well as policies and strategies employed by a range of democratic countries to cope with terrorism and other homeland security-related threats. Examines issue areas such as bio-threats, health system preparedness, airport security and anti-radicalization policies across a number of countries. Reviews the practices of other countries and translates those practices into policies applicable in the United States. Prepares students to engage with their international partners at the local, state, or federal levels as Homeland Security becomes an increasingly global undertaking requiring greater international outreach.

ESMG 4000 Advanced Emergency Services Leadership 4:4:0 Fall, Spring, Summer
* Prerequisite(s): University Advanced Standing
Explores advanced leadership topics as they relate to the first responder. Discusses leadership theories used in both emergency and non-emergency environments and develops skills necessary to lead small and large organizations under the unique atmosphere of time, pressure, and consequence. Provides an understanding of the role an emergency services leader plays in a paramilitary environment.

ESMG 4150 Humanitarian Services and Disaster Relief 3:3:0 Fall, Spring
* Prerequisite(s): University Advanced Standing
* Prerequisite(s) or Corequisite(s): ESMG 310G
Examines both theoretical and applied aspects of complex humanitarian emergencies and reviews disasters in the context of humanitarian relief. Explores the needs of displaced persons and the systems and practices currently in place to meet these needs. Reviews the principles of preparedness, resilience, and sustainability in terms of short-term response to disasters and long-term community recovery.

ESMG 4200 Disaster Response and the Public 3:3:0 Fall
* Prerequisite(s): University Advanced Standing
* Prerequisite(s) or Corequisite(s): ESMG 310G or department approval
Prepares emergency services students to respond effectively to public information needs in both day-to-day emergency circumstances as well as in more extreme disaster conditions. Explores the theory and develops skills to effectively respond in crisis situations. Presents case studies in crisis response that demonstrate how information can help the public prepare, respond, and recover from disasters. This course will be offered as a hybrid or online course.

ESMG 425G Crisis and Disaster Management 3:3:0 Fall, Spring
* Prerequisite(s): ENGL 1010, ENGH 1005, ESMG 310G, or departmental permission. University Advanced Standing
Deals with the operations side of humanitarian action. Establishes principles that can be used in local, national, and international relief efforts. Applies best practices from emergency management to the field of humanitarian services and disaster relief. Meets the global and international requirements to foster greater understanding of, interaction with, and appreciation for, cultures that reflect the diversity present within the local and campus communities, up to the larger state and global context.

ESMG 4300 Disaster Recovery and Mitigation 3:3:0 Spring
* Prerequisite(s): University Advanced Standing
Focuses on how planning and policy processes and interventions can help reduce disaster vulnerabilities and increase resilience through effective recovery and mitigation strategies. Explores how demographic changes, human settlement patterns, land-use decisions, and political and social policy dynamics have increased vulnerability to natural and man-made disasters.

ESMG 4400 Legal Considerations for the Emergency Services 3:3:0 Spring
* Prerequisite(s): University Advanced Standing
* Prerequisite(s) or Corequisite(s): ESMG 310G
Examines regulatory, political, and social aspects of government's role in emergency services agencies, including regulatory issues, emergency services operations, employment, personnel issues, roles, legislative issues, and political influence.

ESMG 445G (Cross-listed with: CJ 445G) Human Factors in Emergency Management 3:3:0 Fall, Spring, Summer
* Prerequisite(s): University Advanced Standing
* Prerequisite(s) or Corequisite(s): ENGL 2010
Introduces students to an emergency response approach to understanding hazards and disasters grounded in social vulnerability analysis. Examines historical, geographical, social, and cultural factors and conditions that put people differentially at risk before, during, and after disasters. Utilizes a multi-disciplinary approach. Focuses on global, national, regional, and local patterns of development. Explores how vulnerable social groups are affected by and cope with hazardous conditions and events, and strategies for community-based mitigation engaging those most at risk.

ESMG 4500 Customer Service and Marketing for the Emergency Services 3:3:0
* Prerequisite(s): University Advanced Standing
* Prerequisite(s) or Corequisite(s): ESMG 310G
Explores the principles and importance of customer oriented service delivery within the emergency services. Looks at current practices and delves into emerging needs and solutions for marketing and public relations. Includes research and critical thinking strategies for local, national, and global perspectives on customer service.

ESMG 4550 Principles of Disaster and Emergency Management 3:3:0 Fall, Spring
* Prerequisite(s): University Advanced Standing
* Prerequisite(s) or Corequisite(s): ESMG 310G
Introduces the student to the need for and creation of comprehensive emergency planning operations. Explores risk assessment techniques and critical analysis strategies for communities and governmental agencies. Teaches the components of a comprehensive emergency plan and presents the National Incident Management System (NIMS), mandated by presidential directive.

ESMG 4600 Public Administration for the Emergency Services 3:3:0 Fall, Spring, Summer
* Prerequisite(s): University Advanced Standing
* Prerequisite(s) or Corequisite(s): ESMG 310G
For Public Emergency Services Management students. Examines the relationship between the emergency management function in government and the professional field of public administration. Topics include public policy making, implementation and analysis, disaster analysis, problem solving and solution formulation.

ESMG 4650 Emergency Services Capstone 3:3:0 Fall, Spring, Summer
* Prerequisite(s): University Advanced Standing
* Prerequisite(s) or Corequisite(s): ESMG 310G
Public Emergency Services Management capstone course. Examines cutting-edge issues under the guidance of top professionals. Includes interviews with local and state officials to identify potential critical issues. Discusses personal leadership philosophy and strategies for decision making.
Course Descriptions

ESMG 481R
Emergency Services Internship
1 to 8:1 to 8:0 Fall, Spring, Summer
* Prerequisite(s): ENGL 2010, (ESFF 1000 or sufficient emergency services experience), and University Advanced Standing

For upper-division students working toward a Bachelor of Science Degree in Emergency Services Management. Provides a transition from school to work where learned theory is applied to actual practice through meaningful on-the-job experience. May be repeated for a maximum of 16 credits toward graduation. May be graded credit/no credit.

ESMG 489R
Special Topics in Emergency Management
1 to 6:1 to 6:0 On Sufficient Demand
* Prerequisite(s): University Advanced Standing

Provides students the opportunity to study special leadership topics in Emergency Management. Requires students to identify standard leadership topics and evaluate their application to Emergency Services. Calls for the creation of a significant research paper that is characteristic of the Emergency Leadership discipline and worthy of communication to a broader audience. May be repeated for a maximum of 8 credits toward graduation.

ESMG 491R
Topics in Cardiology and Medical Trends
1 to 3:1 to 3:0 Fall
* Prerequisite(s): ENGL 2010, (ESFF 1000 or departmental approval), and University Advanced Standing

Surveys a specific topic in cardiology and medical trends related to Emergency Medicine. Topic varies each semester. May be repeated for a maximum of 6 credits toward graduation.

ESMG 492R
Topics in Trauma and Pharmacology
1 to 3:1 to 3:0 Spring
* Prerequisite(s): ENGL 2010, (ESFF 1000 or departmental approval), and University Advanced Standing

Surveys a specific topic in trauma and pharmacological trends. Topic varies each semester. May be repeated for a maximum of 6 credits toward graduation.

ESMG 493R
Topics in Medical Litigation
1 to 4:1 to 4:0 Summer
* Prerequisite(s): ENGL 2010, (ESFF 1000 or departmental approval), and University Advanced Standing

Surveys a specific topic in medical litigation. Topic varies each semester. May be repeated for a maximum of 4 credits toward graduation.

ESMG 6100
Psychology and the Emergency Services Responder
3:3:0
* Prerequisite(s): Acceptance into the Masters of Public Services Program

Examines the psychological impact the emergency services profession has on the responder. Examines the effects of emergency response and bureaucracy on the psyche of the responder. Identifies the need for post-traumatic growth.

ESMG 6110
Disasters/Vulnerability/and Impacts
3:3:0 On Sufficient Demand
* Prerequisite(s): Acceptance into the Masters of Public Services Program

Evaluates the impact of natural and manmade disasters locally, nationally, and internationally. Analyzes historical disaster case studies in order to examine the aggregate costs of disasters.

ESMG 6120
Emergency Planning and Response
3:3:0
* Prerequisite(s): Acceptance into the Masters of Public Services Program

Examines the need for emergency planning and response criteria associated with emergency services delivery. Teaches how to generate a community wide emergency planning and response matrix. Identifies systems thinking within an emergency framework.

ESMG 6130
Social Vulnerability in Emergencies
3:3:0
* Prerequisite(s): Acceptance into the Masters of Public Services Program

Appraises social vulnerabilities within a community. Evaluates the sociological aspects of emergency response. Compares sociological and economic factors to resiliency.

ESMG 6140
Homeland Security Fundamentals
3:3:0 Fall, Spring, Summer
* Prerequisite(s): Acceptance into the Masters of Public Service program

Explains the history, formation, and growth of the Department of Homeland Security (DHS) since September 11, 2001. Estimates impact homeland security has on local emergency service agencies. Appraises the current state of national and international homeland security operations. Evaluates the existing DHS structure and its ability to meet the organization’s strategic mission.

ESWF 1400
Wildland Firefighting Fundamentals
4:3:3 Fall, Spring

Designed to meet the Wildland Firefighter I knowledge and skill requirements of NFPA 1071, Wildland Fire Fighter Professional Qualifications. Teaches students to recognize the “Situations That Shout Watchout,” apply the appropriate Standard Fire Orders and how to deploy a fire shelter. Includes orientation to the Incident Command System. Teaches basic fireline construction, fire weather, and fire behavior. Each subject covered in this course meets and/or exceeds NWCG standards for the following classes: S-130, S-190, I-100, and L-180. Course fee of $118 for materials, specialized clothing, equipment, and state services & testing applies.

ESWF 1410
Wildland Firefighter Internship I
5:5:0 Summer
* Prerequisite(s): ESWF 1400 or departmental approval

Provides experience in fighting fires at wildfire and urban interface incidents. Studies wildfire fire behavior, fire weather, and fire mitigation. Teaches size-up, chain of command, communications, strategy, and tactics. Includes developing water sources, learning engine tactics, understanding procedures for aircraft, firing and felling operations. Completers should develop skills beyond the entry level firefighter. May be graded credit/no credit. Course fee of $86 for specialized clothing, materials, and equipment applies.

ESWF 1420
Wildland Firefighter Internship II
5:5:0 Summer
* Prerequisite(s): ESWF 1410

Provides students with the training and experience that will assist them in gaining a job in wildland fire management and suppression. Features participation in a 20-person wildland fire suppression crew sponsored by the Utah Division of Forestry, Fire and State Lands. Also teaches about wildland fire behavior as well as fire suppression strategies and tactics. Requires students to participate in physically demanding assignments with long periods of time away from home. Exposes students to wildland fire and the various organizational and mechanical tools used to manage and suppress them, such as: aircraft, bulldozers, large engines and other fire management and suppression equipment. May be graded credit/no credit.

ESWF 2000
S200 Initial Attack Incident Commander Type IV
1:1:0 On Sufficient Demand
* Prerequisite(s): Departmental approval

Designed to meet the the training needs of the Initial Attack Incident Commander Type 4 (ICT4). Covers foundational skills, intelligence gathering and documentation, incident size up, development of a plan of action, post-fire activities, evaluation of incident objectives and incident management. Meets and/or exceeds NWCG standards for S-200.

Emergency Services Wildland FF (ESWF)

ESWF 1310
S131 Wildland Firefighter Type I
.5:.5:0 On Sufficient Demand
* Prerequisite(s): Departmental approval

Meets the training needs of a Type 1 Wildland Firefighter (FFT1). Presents several tactical decision scenarios designed to facilitate learning the objectives and class discussion. Introduces the student to the Fireline Handbook and provides an overview of its application.

ESWF 1330
Look Up Look Down Look Around
.5:.5:0 On Sufficient Demand
* Prerequisite(s): Meet NWCG pre-qualifications or departmental approval

Examines the wildland fire environment and the indicators firefighters should observe on the fire line in order to anticipate fire behavior.
Course Descriptions

ESWF 2010
Basic Incident Command System for Initial Response
1:1:0  
* Prerequisite(s): Departmental approval

Introduces the principles of the Incident Command System (ICS) associated with incident-related performance. Includes leadership and management, delegation of authority, management by objectives, functional areas and positions, briefings, organizational flexibility, transitions and transfers. Built on the same lesson objectives and content as the NWCG I-200 course.

ESWF 2110
S211 Portable Pumps and Water Use
1.5:1.5:0  
* Prerequisite(s): Departmental approval

Covers three skill areas: supply, delivery, and application of water. Includes correct water use, basic hydraulics, and equipment care. Requires set up, operation, and maintenance of pump equipment in the field exercise. Meets and/or exceeds NWCG standards for S-211.

ESWF 2150
S215 Fire Operations in the Wildland Urban Interface
2:2:0  
* Prerequisite(s): Departmental approval

Designed to assist structure and wildland firefighters who will be making tactical decisions when confronting wildland fire that threatens life, property, and improvements in the wildland/urban interface. Includes interface awareness, size-up, initial strategy and incident action plan, structure triage, structure protection tactics, incident action plan assessment and update, follow up and public relations, and firefighter safety in the interface. Meets and/or exceeds NWCG standards for S-215.

ESWF 2301
S230 Crew Boss Single Resource
2:2:0  
* Prerequisite(s): Departmental approval

Designed to produce proficiency in the single resource boss position from initial dispatch through demobilization to the home unit. Introduces operational leadership, preparation and mobilization, assignment preparation, risk management, entrapment avoidance, safety and tactics, offline duties, demobilization, and post incident responsibilities. Meets or exceeds requirements for NWCG S230 Crew Boss Single Resource.

ESWF 2340
Firing Operations
2:2:0  
* Prerequisite(s): Departmental Approval

Introduces the roles and responsibilities of a Firing Boss, Single Resource (FIRB), and outlines duties of other personnel who may engage firing operations. Discusses and illustrates common firing devices and techniques. Demonstrates a real ignition or the use of an actual firing device. Meets or exceeds the requirements of NWCG S219 Firing Operations.

ESWF 2430
Wildland Firefighter Internship III
5:5:0  
* Prerequisite(s): ESWF 1420 and departmental approval

Increases the level of leadership training and responsibility for individual firefighters. Includes work on Advanced FIrger/Squad Boss Task book. Teaches and improves upon the following skills: firefighter safety, supervision, communication, situational awareness and other fire suppression skills needed to advance to the Squad boss level. Offers valuable experience in wildland fire suppression techniques as well as safety and organizational skills. May be graded credit/no credit.

ESWF 2600
S260 Interagency Incident Business Management
1:1:0  
* Prerequisite(s): Meet NWCG Prequalifications or departmental approval

Studies the human resources aspect of emergency services in depth. Concentrates on the personnel issues associated with day to day emergency service organizational management Includes topics of ethical conduct, recruitment, resources, and financial management.

ESWF 2700
S270 Basic Air Operations
1:1:0  
* Prerequisite(s): Departmental approval

Introduces aircraft types and capabilities, aviation management and safety for flying in and working with agency aircraft, tactical and logistical uses of aircraft, and requirements for helicopter take-off and landing areas. Addresses regulations, procedures and policies that primarily govern federal agency and ICS operations. Meets and/or exceeds NWCG standards for S270 Basic Air Operations.

ESWF 2800
L280 Followership to Leadership
1:1:0  
* Prerequisite(s): Departmental approval

Provides a self-assessment opportunity for individuals preparing to step into a leadership role. Includes leadership values and principles, transition challenges for new leaders, situational leadership, team cohesion factors, ethical decision-making, and after action review techniques. Meets or exceeds the requirements for NWCG L280 Followership to Leadership.

ESWF 2900
S290 Intermediate Wildland Fire Behavior
2:2:0  
* Prerequisite(s): Departmental approval

Designed to prepare the prospective fireline supervisor to undertake safe and effective fire management operations. Second course in a series that collectively serves to develop fire behavior prediction knowledge and skills. Meets or exceeds the requirements of WFPG S290 Intermediate Wildland Fire Behavior.

ESWF 3000
S300 Incident Commander Extended Attack
1:1:0  
* Prerequisite(s): Meet NWCG prequalifications or departmental approval and University Advanced Standing

Designed to meet the training needs of the Incident Commander Type 3 (ICT3). Focuses on the lessons of leadership and command as they relate to the ICT3 position. Includes multiple tactical decision games for students to practice new knowledge. Covers foundation skills, situational awareness, command and control, managing the incident, transitional activities, post-fire activities and a final simulation.

ESWF 3020
I300 Intermediate Incident Command System
1:1:0  
* Prerequisite(s): Departmental approval and University Advanced Standing

Provides description and detail of the Incident Command System (ICS) organization and operations in supervisory roles on expanding or Type 3 incidents. Includes: ICS fundamentals review, incident level assessment and agency guidance in establishing incident objectives, Unified Command, incident resource management, planning process, demobilization, transfer of command, and incident close out. Meets or exceeds the requirements of NWCG I300 and ICS300 Intermediate Incident Command System.

ESWF 3300
S330 Task Force Strike Team Leader
1.5:1.5:0  
* Prerequisite(s): Meet NWCG Prequalifications or departmental approval and University Advanced Standing

Teaches the application of risk management processes found in the Incident Response Pocket Guide (IRPG) to various incidents. Includes scenarios and exercises that assess the application of tactics specific to wildland fire suppression.

ESWF 3301
RX301 Prescribed Fire Implementation
2:2:0  
* Prerequisite(s): Department Approval and University Advanced Standing

Introduces the tools and techniques used to perform in the role of a Prescribed Fire Burn Boss. Describes the duties and responsibilities associated with the position of the Prescribed Fire Burn Boss including evaluation and implementation of a prescribed fire plan. Meets or exceeds the requirements of NWCG RX 301- Prescribed Fire Implementation.

ESWF 3341
RX341 Prescribed Fire Plan Preparation
2:2:0  
* Prerequisite(s): Department Approval and University Advanced Standing

Focuses on the skills/knowledge to prepare a prescribed fire plan for technical review and approval in accordance with the Interagency Prescribed Fire Planning and Implementation Procedures Guide, PMS 484. Meets or exceeds the requirements of NWCG RX-341 Prescribed Fire Plan Preparation.
**Course Descriptions**

**ESWF 3360**  
S336 Tactical Decision Making in Wildland Fire  
1:1:0  
* Prerequisite(s): Departmental approval and University Advanced Standing  
On Sufficient Demand  
Meets training requirements in the Operations section of the Incident Command System. Includes examples and exercises specific to wildland fire suppression. Meets or exceeds requirements for NWCG S336 Tactical Decision Making in Wildland Fire.

**ESWF 3380**  
L380 Fireline/Fire Service Leadership  
3:3:0  
* Prerequisite(s): Department Approval and University Advanced Standing  
Fall, Spring, Summer  
Provides leadership development training for wildland/ fire service supervisors. Focuses on application of leadership styles and team building. Designed for incident personnel with supervisory responsibilities. Meets or exceeds the requirements of NWCG L-380 Fireline/Fire Service Leadership.

**ESWF 3390**  
S339 Division or Group Supervisor  
1:1:0  
* Prerequisite(s): Departmental approval and University Advanced Standing  
On Sufficient Demand  
Prepares students to perform in the role of division/ group supervisor. Includes division/group management, organizational interaction, division operations, and all-hazard operations. May include tactical decision games. Meets or exceeds the requirements of NWCG S-339, Division / Group Supervisor.

**ESWF 4000**  
I400 Advanced Incident Command System  
1:1:0  
* Prerequisite(s): Departmental approval and University Advanced Standing  
On Sufficient Demand  
Provides an operational understanding of large single- agency and complex multi-agency/multi-jurisdictional incident responses. Includes: review for command and general staff, major and/or complex incident/ event management, area command, and multi-agency coordination. Meets or exceeds the requirements for NWCG I400 Advanced Incident Command System or ICS 400.

**ESWF 4390**  
S390 Introduction to Wildland Fire Behavior Calculations  
2:2:0  
* Prerequisite(s): Departmental approval and University Advanced Standing  
On Sufficient Demand  
Introduces fire behavior calculations by manual methods, using nomograms and the Fire Behavior Handbook. Covers the determinants of fire behavior though studying inputs (weather, slope, fuels, and fuel moisture). Teaches how to interpret fire behavior outputs, documentation processes, and fire behavior briefing components. Meets or exceeds the requirements of NWCG S390 Introduction to Wildland Fire Behavior Calculations.

**Exercise Science (EXSC)**

**EXSC 2500**  
Sports Medicine  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): EXSC Majors: ZOOL 2320 (or 232H), ZOOL 2325 (or 232L), all with a C- or higher and (MATH 1050 or MATH 1055). PETE Majors: ZOOL 1090  
* Prerequisite(s) or Corequisite(s): ZOOL 2420 (or 242H), ZOOL 2425 (or 242L), EXSC 270G all with a C- or higher and (MATH 1050 or MATH 1055). PETE Majors: PETE 2700 both with a C- or higher and (MATH 1050 or MATH 1055).  
Explores the field of Sports Medicine. Provides instruction on injury management, including record keeping, assessment, and steps to recovery. Teaches an understanding of different tissues’ response to injury. Investigates different imaging techniques used in assessment. Examines surgical considerations for specific injuries.

**EXSC 270G**  
Foundations of Exercise Science  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): ZOOL 2320 (or 232H), ZOOL 2325 (or 232L), ZOOL 2420 (or 242H), ZOOL 2425 (or 242L) all with a C- or higher, and (MATH 1050 or MATH 1055)  
Introduces the study of the Exercise Sciences and discusses the global influence on the development of the field. Studies the national and international history and philosophy of the field of Exercise and sport science. Analyzes problems in areas covered under the umbrella of Exercise Science and Physical Education. Explores related career and employment opportunities in this area.

**EXSC 3270**  
Exercise Testing  
2:2:0  
Fall, Spring, Summer  
* Prerequisite(s): ZOOL 2320 (or 232H), ZOOL 2325 (or 232L), all with a C- or higher, and (MATH 1050 or MATH 1055), and University Advanced Standing  
* Prerequisite(s) or Corequisite(s): ZOOL 2420 (or 242H), ZOOL 2425 (or 242L), and EXSC 270G  
Teaches key concepts related to exercise testing and program design for healthy populations and populations with controlled disease. Explores concepts in team, group, and individualized assessment and programming. Emphasizes principles in anatomy, exercise physiology, behavior modification, motivation, health promotion, fitness assessment and prescription. Encourages students to sit for certification exams upon course completion. Course fee of $20 for supplies.

**EXSC 3280**  
Exercise Prescription  
2:2:0  
Summer  
* Prerequisite(s): ZOOL 2320 (or 232H), ZOOL 2325 (or 232L), all with a C- or higher, and (MATH 1050 or MATH 1055), and University Advanced Standing  
* Prerequisite(s) or Corequisite(s): ZOOL 2420 (or 242H), ZOOL 2425 (or 242L), and EXSC 270G  
Emphasizes knowledge and skills related to safe and effective exercise prescription. Incorporates ACSM guidelines for exercise prescription based on the 5 components of health related fitness; cardiorespiratory endurance, body composition, muscle strength, muscle endurance, flexibility.

**EXSC 3400**  
Statistical Analysis in Exercise Science  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): (MATH 1050 or higher) and University Advanced Standing  
Not Offered  
Provides an introduction to statistics, as well as the role of statistics in experimental design that is necessary to evaluate data collected from measurements commonly used in exercise science, health, physical education and recreation.

**EXSC 3500**  
Kinesiology  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): ZOOL 2320 (or 232H), ZOOL 2325 (or 232L), all with a C- or higher and MATH 1050 or MATH 1055. PETE Majors: ZOOL 1090 and PETE 2700 both with a C- or higher and MATH 1050 or MATH 1055. REC Majors: ZOOL 1090 and REC 2200 both with a C- or higher and STAT 1040 or STAT 1045 or MATH 1050 or MATH 1055. All: University Advanced Standing  
* Prerequisite(s) or Corequisite(s): ZOOL 2420 (or 242H), ZOOL 2425 (or 242L), and EXSC 270G  
Studies human movement. Includes the structure of the human body and fundamental mechanics. Emphasizes kinesiological and mechanical analysis.

**EXSC 3550**  
Motor Learning and Control  
3:2:2  
Fall, Spring, Summer  
* Prerequisite(s): EXSC Majors: ZOOL 2320 (or 232H), ZOOL 2325 (or 232L), and Pre or Co-requisite all with a C- or higher and (MATH 1050 or MATH 1055). PETE Majors: ZOOL 1090 and Pre Co-requisite PTE 2700 both with a C- or higher and (MATH 1050 or MATH 1055). REC Majors: ZOOL 1090 and Pre or Co-requisite REC 2200 both with a C- or higher and (STAT 1040 or STAT 1045 or MATH 1050 or MATH 1055). All: University Advanced Standing  
* Prerequisite(s) or Corequisite(s): ZOOL 2420 (or 242H), ZOOL 2425 (or 242L), and EXSC 270G  
Examines motor and cognitive characteristics of individuals involved in learning or performing motor skills. Examines conditions that influence learning. Analyzes how humans learn complex movement skills and control voluntary, coordinated movement. Analyzes the basic psychological processes involved in learning and control of movement and their effect on instruction and practice conditions for the learner. Studies motor development and its effect on skill acquisition. Course fee of $14 applies.
EXSC 3700 (Cross-listed with: ZOOL 3700)  
**Exercise Physiology**  
3:3:0 Fall, Spring, Summer  
* Prerequisite(s): EXSC Majors: ZOOL 2320 (or 232H), ZOOL 2325 (or 232L), and EXSC 270G all with a C- or higher and (MATH 1050 or MATH 1055). PETE Majors: PETE 2700 and ZOOL 1090 with a C- or higher and (MATH 1050 or MATH 1055). All: University Advanced Standing  
* Prerequisite(s) or Corequisite(s): ZOOL 2420 (or 242H), ZOOL 2425 (or 242L)  
Studies acute and chronic physiological responses to exercise, as well as nutritional and environmental effects on these responses. Requires separate weekly laboratory. Canvas Course Mats $78/McGraw applies.

EXSC 3705 (Cross-listed with: ZOOL 3705)  
**Exercise Physiology Laboratory**  
1:0:3 Fall, Spring, Summer  
* Prerequisite(s): University Advanced Standing  
* Corequisite(s): EXSC 3700  
Studies acute and chronic physiological responses to exercise, as well as nutritional and environmental effects on these responses. The laboratory is designed to offer the hands-on experience where students will experience the physiological responses to different stressors in the lab setting. The labs are arranged to be conducted as similar material is being discussed in class. Course Lab fee of $28 for materials applies.

EXSC 3730  
**Biomechanics**  
3:3:0 Fall, Spring  
* Prerequisite(s): EXSC Majors: ZOOL 2320 (or 232H), ZOOL 2325 (or 232L), and all with a C- or higher and (MATH 1050 or MATH 1055). PETE Majors: ZOOL 1090 and Pre or Co-requisite PETE 2700 both with a C- or higher and (MATH 1050 or MATH 1055). REC Majors: ZOOL 1090 and Pre or Co-requisite REC 2200 both with a C- or higher and (STAT 1040 or STAT 1045 or MATH 1050 or MATH 1055). All: University Advanced Standing  
* Prerequisite(s) or Corequisite(s): ZOOL 2420 (or 242H), ZOOL 2425 (or 242L), EXSC 270G, and EXSC 3500  
Emphasizes the application of engineering principles and technology in sports performance through interdisciplinary methodologies. Includes human gait analysis, locomotion, trunk biomechanics, computer modeling, and tissue biomechanics. Course fee of $20 for equipment, supplies, and lab applies.

EXSC 3750  
**Psychosocial Aspects of Human Performance**  
2:2:0 Fall, Spring, Summer  
* Prerequisite(s): University Advanced Standing.  
* Prerequisite(s) or Corequisite(s): ZOOL 1090 or ZOOL 2320 (or 232H) and ZOOL 2325 (or 232L)  
Provides students with the necessary skills and understanding to adequately deal with the psychological and social aspects of human and sport performance. Develops techniques and psychological skills to enhance performance and establish a learning and social environment that would enhance the effectiveness of coaches and maximize the skill and personal growth of athletes.

EXSC 3850  
**Ethical Concerns in Exercise Science**  
3:3:0 Fall, Spring  
* Prerequisite(s): ZOOL 2320 (or 232H), ZOOL 2325 (or 232L), ZOOL 2420 (or 242H), ZOOL 2425 (or 242L), and Pre or Co-requisite EXSC 270G all with a C- or higher and (MATH 1050 or MATH 1055) and University Advanced Standing  
Surveys applied concepts of ethical codes and legal liability. Explores systems used by community and adventure education programs for aspects protective of participants, staff, and institutions.

EXSC 4000  
**Clinical Exercise Physiology**  
3:2:3 Fall, Spring  
* Prerequisite(s): ZOOL 2320 (or 232H), ZOOL 2325 (or 232L), ZOOL 2420 (or 242H), ZOOL 2425 (or 242L), EXSC 270G, and EXSC 3270 all with a C- or higher and (MATH 1050 or MATH 1055), and University Advanced Standing  
Emphasizes information and skills related to exercise testing and prescription in healthy and clinical populations. Teaches American College of Sports Medicine (ACSM) exercise testing guidelines.

EXSC 4050  
**Obesity Physiology and Physical Activity**  
3:3:0 Fall, Spring  
* Prerequisite(s): EXSC 270G and University Advanced Standing  
* Prerequisite(s) or Corequisite(s): ZOOL 2420 and ZOOL 2425  
Provides a broad understanding of the negative health impacts of obesity on physiology. Focuses on exercise modalities that are safe and appropriate as means to treat and ameliorate the negative health consequences of obesity.

EXSC 4100  
**Fitness Across the Lifespan**  
3:3:0 Fall, Spring  
* Prerequisite(s): ZOOL 2320 (or 232H), ZOOL 2325 (or 232L), ZOOL 2420 (or 242H), ZOOL 2425 (or 242L), and Pre or Co-requisite EXSC 270G all with a C- or higher and (MATH 1050 or MATH 1055), and University Advanced Standing  
Addresses key issues relative to fitness across the lifespan; including, fitness in youth, adult fitness, aging, physical activity program design and implementation, attrition, behavior modification, and the role of exercise in disease prevention and/or management.

EXSC 4200  
**Exercise Metabolism**  
3:3:0 Fall, Spring  
* Prerequisite(s): ZOOL 2320 (or 232H), ZOOL 2325 (or 232L), ZOOL 2420 (or 242H), ZOOL 2425 (or 242L), EXSC 270G all with a C- or higher and (MATH 1050 or MATH 1055), and University Advanced Standing  
Examines how exercise affects the functioning of human and animal organisms at the molecular level. Focuses on the tools of basic principles of biochemistry and teaches how to use the tools to understand how exercise affects metabolism. Studies how to use biochemical tests to assess an exercising person’s health and performance.

EXSC 4300  
**Research Methods in Exercise Science and Outdoor Recreation**  
3:3:0 Fall, Spring, Summer  
* Prerequisite(s): EXSC Majors: ZOOL 2320 (or 232H), ZOOL 2325 (or 232L), ZOOL 2420 (or 242H), ZOOL 2425 (or 242L), and Pre or Co-requisite EXSC 270G all with a C- or higher and (MATH 1050 or MATH 1055). REC Majors: ZOOL 1090 and Pre or Co-requisite REC 2200 both with a C- or higher and (STAT 1040 or STAT 1045 or MATH 1050 or MATH 1055). All: University Advanced Standing  
Introduces students to key research in their field. Emphasizes analytical and interpretive skills. Develops scientific writing skills. Promotes design and utilization of comprehensive research methodologies commonly applied in Exercise Science and Outdoor Recreation.

EXSC 4400  
**Physical Activity Promotion in the Community**  
3:3:0 Fall, Spring  
* Prerequisite(s): ZOOL 2320 (or 232H), ZOOL 2325 (or 232L), ZOOL 2420 (or 242H), ZOOL 2425 (or 242L), EXSC 270G all with a C- or higher and (MATH 1050 or MATH 1055), and University Advanced Standing  
Emphasizes concepts related to physical activity promotion in the community. Critically reviews literature associated with physical activity programming in communities including barriers to physical activity participation, behavioral change theory, and social, environmental, and biological factors that influence physical activity behavior. Promotes application of concepts developed in class through introductory supervised field experience.

EXSC 4500  
**Advanced Sports Nutrition**  
3:3:0 Fall, Spring  
* Prerequisite(s): ZOOL 2320 (or 232H), ZOOL 2325 (or 232L), ZOOL 2420 (or 242H), ZOOL 2425 (or 242L), EXSC 270G all with a C- or higher and (MATH 1050 or MATH 1055), and University Advanced Standing  
Designed to provide exercise science students a comprehensive understanding of basic nutritional principles as they relate to sports. Canvas Course Mats $57/Humanark applies.

EXSC 4550  
**Principles of Strength and Conditioning**  
3:2:3 Fall, Spring  
* Prerequisite(s): ZOOL 2320 (or 232H), ZOOL 2325 (or 232L), ZOOL 2420 (or 242H), ZOOL 2425 (or 242L), EXSC 270G, EXSC 3500 and EXSC 3700 and EXSC 3705 all with a C- or higher and (MATH 1050 or MATH 1055), and University Advanced Standing  
Emphasizes knowledge of physiological principles and training techniques used in strength and conditioning. Teaches guidelines from the National Strength and Conditioning Association (NSCA). Prepares students for several sections of the NSCA Certified Strength and Conditioning Specialist exam.
EXSC 4600 Advanced Biomechanics 3:3:0 Fall, Spring
* Prerequisite(s): ZOOL 2320 (or 232H), ZOOL 2325 (or 232L), ZOOL 2420 (or 242H), ZOOL 2425 (or 242L), EXSC 270G all with a C- or higher and (MATH 1050 or MATH 1055), and University Advanced Standing
* Prerequisite(s) or Corequisite(s): EXSC 3730
Teaches the application of mechanical principles to the development of motor skills. Includes research and technology utilized in the field of biomechanics.

EXSC 4700 Advanced Gross Motor Assessment 3:3:0 Fall, Spring
* Prerequisite(s): ZOOL 2320 (or 232H), ZOOL 2325 (or 232L), ZOOL 2420 (or 242H), ZOOL 2425 (or 242L), EXSC 270G, EXSC 2500 and EXSC 3500 all with a C- or higher and (MATH 1050 or MATH 1055), and University Advanced Standing
Provides the students with advanced instruction on and the development of knowledge, skills and abilities to be able to safely and effectively evaluate and interpret / qualify gross motor function. Includes but is not limited to surface anatomy, bony and soft tissue palpation, Range of Motion (ROM), muscular strength, neurologic examination and stress tests of supportive structures.

EXSC 481R Internship in Exercise Science 1 to 8:1 to 8:0 Fall, Spring, Summer
* Prerequisite(s): ZOOL 2320 (or 232H), ZOOL 2325 (or 232L), ZOOL 2420 (or 242H), ZOOL 2425 (or 242L), EXSC 270G all with a C- or higher and (MATH 1050 or MATH 1055), and University Advanced Standing
Provides students with hands-on professional experience in the field of exercise science. May be repeated for a maximum of 8 credits toward graduation. Graded credit/no credit.

EXSC 489R Undergraduate Research for Exercise Science 1 to 4:0 to 20 Fall, Spring, Summer
* Prerequisite(s): ZOOL 2320 (or 232H), ZOOL 2325 (or 232L), ZOOL 2420 (or 242H), ZOOL 2425 (or 242L), EXSC 270G all with a C- or higher and (MATH 1050 or MATH 1055), and University Advanced Standing
Provides students the opportunity to conduct research under the mentorship of a faculty member. Students will put in practice the theoretical knowledge gained in prior major courses. Students will create a significant intellectual or creative product that is characteristic of the Exercise Science discipline and worthy of communication to a broader audience. May be repeated for a maximum of 8 credits toward graduation.

EXSC 4950 Senior Seminar 2:2:0 Fall, Spring
* Prerequisite(s): ZOOL 2320 (or 232H), ZOOL 2325 (or 232L), ZOOL 2420 (or 242H), ZOOL 2425 (or 242L), EXSC 270G all with a C- or higher and (MATH 1050 or MATH 1055), and University Advanced Standing
Emphasizes critical evaluation of classic and current research in Exercise Science. Promotes research and writing skills within the discipline of Exercise Science. Promotes student centered learning and supports specialization within the field of Exercise Science.

Facilities Management (FAC)

FAC 1010 Survey of Facilities Management 3:3:0 Spring
Orients Facilities Management (FAC) majors with core responsibilities in the industry. Uses case studies and theory to gain experience with problem solving and resource management.

FAC 1020 Space Planning and Management 3:3:0 On Sufficient Demand
* Prerequisite(s) or Corequisite(s): ENGL 1010 or ENHG 1005
Focuses on the forecasting, growth, planning, allocation, and management of occupied space. Discusses the role of the facilities manager in planning and managing growth.

Family Studies (FAMS)

FAMS 101G Contemporary Families 3:3:0
Expands students' awareness of variations within families due to form, culture, and other factors. Focuses on areas of kinship, family organization, traditions, interpersonal relationships, parenting practices, values and beliefs, and prejudice. Canvas Course Mats $66/McGraw Hill applies.

FAMS 1100 Life Span Development in the Family 3:3:0
Studies issues surrounding physical, cognitive, social, and emotional development of the individual within the context of family across the lifespan. Explores the family influences of the development of the individual.

FAMS 1150 Marriage and Relationship Skills 3:3:0 Fall, Spring, Summer
Guides students in building a lasting intimate relationship of their own and in understanding and teaching relationship maintenance and improvement strategies based on large-scale scientifically derived marriage and relationship principles. Utilizes cutting edge research on factors and issues related to relationship success and outcome including whom and when to marry and how to build stable and happy relationships over time. Stresses increased understanding of desirable relationship outcomes and how to achieve them.

FAMS 2705 Ethics for Family Interventions 3:3:0 Fall, Spring, Summer
* Prerequisite(s): ENGL 1010, ENGL 101H, or ENHG 1005 with a C+ or higher
Explores the ethical and legal responsibilities of the helping professional in various types of family intervention, including counseling, education, and case management. Examines the broad scope of these ethical and legal concerns and how they are applied in a variety of settings.

FAMS 2800 Teaching Human Sexuality 3:3:0 Fall, Spring, Summer
* Prerequisite(s): (ENGL 1010, ENGL 101H, or ENHG 1005 with a C+ or higher)
Introduces basic concepts of human sexuality and effective methods to teach these topics to adults, adolescents, and children. Discusses gender roles, sexual orientation, sexual dysfunction, and sexually transmitted disease. Examines sexuality from the perspective of ethics, religion, the law, and education. Requires students to assess their own sexual attitudes and acquire information that should enable them to make responsible sexuality decisions. Educates students in how to teach human sexuality effectively regardless of any biases or individual beliefs. Note: Due to Utah State Laws regarding sexuality education, students registering for FAMS 2800 must be 18 years of age or a high school graduate.

FAMS 3000 (Cross-listed with: SW 3000) Social Work Practice I 3:3:0 Fall, Spring, Summer
* Prerequisite(s): Admission to the BSW program or declared major in Family Science and University Advanced Standing
Introduces the basic knowledge, values, and skills needed for generalist social work practice. Focuses on working with individuals using the planned change process within the strengths perspective. Assists students in understanding the social and environmental conditions that negatively affect clients and empowering clients to take steps to enhance their own well-being. Provides content on the evaluation of social work practice.

FAMS 3010 (Cross-listed with: BESC 3010) Statistics for the Behavioral Sciences 4:4:0 Fall, Spring, Summer
* Prerequisite(s): MAT 1000 or higher and University Advanced Standing
Introduces use of statistics for research purposes. Teaches descriptive and inferential statistics. Includes central tendency, variability, correlation and regression, probability (particularly probability distributions), and various inferential techniques such as t-test for independent and dependent samples, one-way and two-way analysis of variance, post-hoc tests, and non-parametric statistics. May be delivered hybrid and/or online.

FAMS 3020 Research Methods for Family Science 3:3:0 Fall, Spring
* Prerequisite(s): University Advanced Standing
Surveys the most common research designs in the social sciences. Highlights experiments, quasi-experiments, correlational designs, survey research, single case, and the philosophy of qualitative methods. Includes the design of a study, original data collection, data analysis, presentation of results.
FAMS 3100
Career and Graduate School Preparation
3:3:0 Fall, Spring
* Prerequisite(s): University Advanced Standing

Emphasizes the development of skills necessary to apply for employment and/or graduate school in the field of family studies. Includes resume writing, cover letters, basic interview skills, preparation of application packages, and networking skills used with school and community resources to find employment and/or graduate school opportunities.

FAMS 3250
Applied Parenting
3:3:0 Fall, Spring, Summer
* Prerequisite(s): (ENGL 2010 with C+ or higher) and University Advanced Standing

Explores the dynamic process of adult development from emerging adulthood to death. Focuses on research in the academic discipline of Family Studies. Teaches how to use the tools of research as a problem solving resource in real-life and applied settings. Includes how to form a research question or hypothesis, develop a proposal, create measurement, and apply for IRB approval. Requires completion of a research project.

FAMS 3400
Secondary Data Analysis
3:3:0 Fall, Spring, Summer
* Prerequisite(s): BESC 3010; BESC 3020; (ENG 2010 or 2020 with a C+ or higher) and University Advanced Standing

FAMS 4040
Fundamentals of Mediation and Negotiation
3:3:0 Fall, Spring, Summer
* Prerequisite(s): (ENG 2010 with a C+ or higher) and University Advanced Standing

Builds on fundamentals learned in the basic mediation course. Reviews research and theories on family mediation and negotiation. Builds on the fundamentals learned in the basic course, improves knowledge of both processes, and sharpens practical skills and effectiveness as a mediator or negotiator. Uses an interactive-workshop format that blends theory with simulated class role-play.

FAMS 4200 (Cross-listed with: COMM 4200)
Advanced Mediation and Negotiation
3:3:0 Fall, Spring, Summer
* Prerequisite(s): (ENG 2010 with a C+ or higher) and (FAMS 3410 or COMM 3410 or BESC 3420 or COMM 3420) and University Advanced Standing

Prepares students to perform at an advanced level in the processes of mediation and negotiation. Builds on the fundamentals learned in the basic course, improves knowledge of both processes, and sharpens practical skills and effectiveness as a mediator or negotiator. Uses an interactive-workshop format that blends theory with simulated class role-play. A certification with the Utah State Court Administrator's office may be offered to those who pass the course and complete 10 hours of mediation and negotiation at the conclusion of the semester.

FAMS 4300
Family Dispute Resolution
3:3:0 Fall, Spring, Summer
* Prerequisite(s): FAMS 3410 or COMM 3410 or instructor approval; and University Advanced Standing

Builds on fundamentals learned in the basic mediation course. Reviews research and theories on family dynamics and conflicts. Examines the most effective mediation approaches, techniques, and skills for resolving family disputes. Presents information on specialized family mediation situations such as family mediation divorce, parent/teen, adoption, elder care. Prepares students to effectively participate in family mediations by utilizing an interactive workshop format with role-play, observation, and actual mediations.

FAMS 4400
Family Policy
3:3:0 Fall, Spring, Summer
* Prerequisite(s): (FAMS 101G) and (ENGL 2010 with a C+ or higher) and University Advanced Standing

Explores the development of adult development from emerging adulthood to death. Focuses on the application of the guidance of children. Includes the study of parenting concepts, challenges, risks, and alternatives while considering the social, physical, emotional, intellectual, and spiritual environments of the child.

FAMS 4500
Family Life Education Methodology
3:3:0 Fall, Spring, Summer
* Prerequisite(s): (FAMS 101G and (ENGL 2010 with a C+ or higher) and University Advanced Standing

Explores the field of family life education. Includes the history, development, and theory of family life education, as well as discusses the types of family life education programs. Develops the knowledge and practical skills that are required to identify needs, design programs, teach family life education, facilitate groups, and evaluate participants and programs in a wide variety of settings with a broad range of populations. Develops an appreciation for the impact of diversity in family life education which includes an awareness of multicultural factors, family structure, culture, economics, gender, race, religion, disability, ageism, and sexual orientation.

FAMS 4600
Relationship Education Certification
3:3:0 Fall, Spring, Summer
* Prerequisite(s): FAMS 101G and (ENGL 2010 or 2020 with a C+ or higher) and University Advanced Standing. FAMS 4500 is strongly encouraged but not required.

Certifies students in the Prevention and Relationship Enhancement Program and other relationship curricula.

FAMS 4660
Family Financial and Resource Management
3:3:0 Fall, Spring, Summer
* Prerequisite(s): University Advanced Standing

Builds on fundamentals learned in the basic mediation course. Reviews research and theories on family dynamics and conflicts. Examines the most effective mediation approaches, techniques, and skills for resolving family disputes. Presents information on specialized family mediation situations such as family mediation divorce, parent/teen, adoption, elder care. Prepares students to effectively participate in family mediations by utilizing an interactive workshop format with role-play, observation, and actual mediations.

FAMS 4670
Family Dynamics and Systems
3:3:0 Fall, Spring, Summer
* Prerequisite(s): (FAMS 101G) and (ENGL 2010 with a C+ or higher) and University Advanced Standing

Explores the dynamic process of adult development from emerging adulthood to death. Focuses on current adult developmental research and theory and the development of adults within and without the family system. Includes the examination of physical, familial, emotional, and social development.
**Course Descriptions**

**FAMS 4700**
Introduction to Marriage and Family Therapy
3:3:0 Fall, Spring
* Prerequisite(s): FAMS 101G, and University Advanced Standing

Introduces the field of marriage and family therapy. Addresses history, theory, prominent clinicians and methodologies, and therapeutic topics and techniques. Develops the knowledge of such topics as the systemic nature of therapy. Focuses on knowledge of theory and specific topics in therapy rather than skill development. Includes research, training, professional issues, and ethics in the field.

**FAMS 475R**
Current Topics in Family Studies
1 to 3:1 to 3:0
* Prerequisite(s): FAMS 101G and (ENGL 2010 with a C+ grade or higher) and University Advanced Standing

Presents a selected topic in Family Studies and will vary each semester. Requires a project demonstrating competency in the specific topic. May be repeated with different topics for nine credits toward graduation.

**FAMS 481R**
Senior Internship
1 to 8:1 to 8:0
* Prerequisite(s): Senior Standing in the Family Science program or Family Studies emphasis, BESC 3020, permission of the instructor, and University Advanced Standing

Provides practical and research experience interning in a governmental, corporate, or private agency apart from regular employment. Internship placements provide opportunities for contribution to the planning, design, implementation, and/or evaluation of family life educational programs. Supervised by agency representative. Requires faculty approval. May be repeated for up to 8 credits toward graduation. May be graded credit/no credit. Course fee of $35 applies.

**FAMS 482R**
Stronger Families Internship
1 to 8:1 to 8:0 Fall, Spring
* Prerequisite(s): Senior Standing in the Family Science program or Family Studies emphasis, FAMS 4500, permission of the instructor, and University Advanced Standing

Provides practical and research experience interning in the Strengthening Families Program. Supervised by agency representative. Requires faculty approval. May be repeated for a maximum of 8 credits toward graduation. May be graded credit/no credit. Course fee of $35 applies.

**FAMS 483R**
Research Internship
1 to 8:1 to 8:0
* Prerequisite(s): Senior Standing in the Family Science program or Family Studies emphasis, BESC 3010 and BESC 3020 and (ENGL 2010 or 2020 with a C+ or higher) and University Advanced Standing or department approval.

Provides research experience. Topics include idea formation, survey creation, data collection, marketing, data cleaning, qualitative coding, codebook creation, data analysis, gathering or summarizing literature, or preparing presentations/manuscripts. May be graded credit/no credit. May be repeated for up to eight credits toward graduation.

**FAMS 485R**
Internship Seminar
1:1:0 Fall, Spring, Summer
* Prerequisite(s): Junior standing in the Family Studies emphasis, FAMS 4500, permission of instructor, and University Advanced Standing

Provides integration of classroom learning with learning that takes place in an on-site internship. Intended to be taken concurrently with FAMS 481R or FAMS 482R. May be repeated for a maximum of 8 credits toward graduation.

**FAMS 490R**
Independent Study
1 to 3:1 to 3:0
* Prerequisite(s): BESC Department major; instructor approval and University Advanced Standing

Requires students to complete a well-defined project or directed study related to an area of special interest. Requires individual initiative and responsibility. Includes limited formal instruction and faculty supervision. May include writing a publishable paper, passing a competency exam, producing an annotated bibliography, oral presentation, or other options as approved by instructor. May be repeated for a maximum of six credits toward graduation.

**FIN 1060**
Personal Finance
3:3:0 Fall, Spring, Summer
* Prerequisite(s) or Corequisite(s): MGMT 3345 and University Advanced Standing

Designed as elective credit toward a business degree and for individuals interested in acquiring personal financial planning skills. Covers personal financial management with emphasis on decision making, budgeting, financial institutions, personal and family risk management, credit management, and estate planning. Methods include lectures, guest speakers, films, tapes, computer simulations and research. Completers should be able to prepare complete personal budgets and other family financial planning instruments. Lab access fee of $30 for computers applies. Canvas Course Mats $78/McGraw Hill.

**FIN 281R**
Cooperative Work Experience
2 to 9:2 to 9:0 On Sufficient Demand
* Prerequisite(s): Approval of Cooperative Coordinator

Designed for Fine Arts majors. Provides paid work experiences in the student’s major. Course content is individualized, with students setting objectives in consultation with their faculty coordinator and their on-the-job supervisor. Credit is determined by the number of hours a student works during the semester. May be repeated four times for credit. May be graded credit/no credit.

**FIN 3020**
Family Financial Management and Development
3:3:0 On Sufficient Demand
* Prerequisite(s): MAT 1030 or higher and University Advanced Standing

Personal and family financial management and development for non FPF Majors. Focuses on norms, roles, values, and traditions for the management of family resources. Examines the interactions and best practices of individuals and family members in processing financial management issues such as goal definitions, budgeting, debt management, and related functions.

**FIN 3060**
Introduction to the PFP Profession
3:3:0 Fall, Spring, Summer
* Prerequisite(s): MATH 1050 or MATH 1055 or MATH 1090 and University Advanced Standing

Introduces the processes appropriate for entry into the personal financial planning (PFP) profession. Provides an overview of the skills and knowledge sets required to be a PFP professional including an outline of business models and practice management issues within the industry. Includes a review of basic PFP process such as the time value of money, cash and debt management, personal financial statement analysis, education funding, and related issues.

**FIN 3100**
Principles of Finance
3:3:0 Fall, Spring, Summer
* Prerequisite(s): Matriculation into the Woodbury School of Business and University Advanced Standing

For bachelor's degree business management majors. Examines financial management in the business environment; time value of money; fundamentals of security valuation; the capital asset pricing model and capital budgeting. Introduces finance terminology and quantitative techniques used in financial analysis. Covers financial ratios and financial statement analysis, cost of capital, working capital policies, dividend policy, and a brief overview of international finance. Lab access fee of $30 for computers applies. Canvas Course Mats $78/Cengage applies.

**FIN 3150**
Financial Management
3:3:0 Fall, Spring
* Prerequisite(s): FIN 3100 and University Advanced Standing
* Prerequisite(s) or Corequisite(s): MGMT 3345

Examines financial aspects of firm decisions; presents theoretical underpinnings for financial management, together with quantitative techniques used to analyze financial questions. Covers financial analysis and planning; valuation methods; determination of required return; effect of capital structure decisions; funding alternatives; and corporate risk management. Requires analysis of a capital budgeting problem, including a written paper, quantitative analysis and presentation. Lab access fee of $30 for computers applies.

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Fine Arts Music and Theatre (FAMT)

**FAMT 281R**
Cooperative Work Experience
2 to 9:2 to 9:0 On Sufficient Demand
* Prerequisite(s): Approval of Cooperative Coordinator

Designed for Fine Arts majors. Provides paid work experiences in the student’s major. Course content is individualized, with students setting objectives in consultation with their faculty coordinator and their on-the-job supervisor. Credit is determined by the number of hours a student works during the semester. May be repeated four times for credit. May be graded credit/no credit.

**FAMT 3020**
Family Financial Management and Development
3:3:0 On Sufficient Demand
* Prerequisite(s): MAT 1030 or higher and University Advanced Standing

Personal and family financial management and development for non FPF Majors. Focuses on norms, roles, values, and traditions for the management of family resources. Examines the interactions and best practices of individuals and family members in processing financial management issues such as goal definitions, budgeting, debt management, and related functions.

**FAMT 3060**
Introduction to the PFP Profession
3:3:0 Fall, Spring, Summer
* Prerequisite(s): MATH 1050 or MATH 1055 or MATH 1090 and University Advanced Standing

Introduces the processes appropriate for entry into the personal financial planning (PFP) profession. Provides an overview of the skills and knowledge sets required to be a PFP professional including an outline of business models and practice management issues within the industry. Includes a review of basic PFP process such as the time value of money, cash and debt management, personal financial statement analysis, education funding, and related issues.

**FAMT 3100**
Principles of Finance
3:3:0 Fall, Spring, Summer
* Prerequisite(s): Matriculation into the Woodbury School of Business and University Advanced Standing

For bachelor's degree business management majors. Examines financial management in the business environment; time value of money; fundamentals of security valuation; the capital asset pricing model and capital budgeting. Introduces finance terminology and quantitative techniques used in financial analysis. Covers financial ratios and financial statement analysis, cost of capital, working capital policies, dividend policy, and a brief overview of international finance. Lab access fee of $30 for computers applies. Canvas Course Mats $78/Cengage applies.

**FAMT 3150**
Financial Management
3:3:0 Fall, Spring
* Prerequisite(s): FIN 3100 and University Advanced Standing
* Prerequisite(s) or Corequisite(s): MGMT 3345

Examines financial aspects of firm decisions; presents theoretical underpinnings for financial management, together with quantitative techniques used to analyze financial questions. Covers financial analysis and planning; valuation methods; determination of required return; effect of capital structure decisions; funding alternatives; and corporate risk management. Requires analysis of a capital budgeting problem, including a written paper, quantitative analysis and presentation. Lab access fee of $30 for computers applies.

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Utah Valley University
FIN 3160
Financial Management for Accounting Majors
3:3:0  On Sufficient Demand
* Prerequisite(s): FIN 3100, MATH 1050, MATH 1055, or MATH 1090, and University Advanced Standing

Prepares accounting majors with the information and skills necessary to prepare for the certified management accounting (CMA) accreditation process. Includes coverage of financial statement analysis, evaluation of profitability, managing financial risk, management of capital issues, and other financial decision making processes.

FIN 3170
Financial Statement Analysis
3:3:0  Fall, Spring
* Prerequisite(s): FIN 3100 and University Advanced Standing
* Prerequisite(s) or Corequisite(s): MGMT 3345

Teaches the application of professional financial management processes required to analyze markets, sectors, obtaining experience with optimization, data analysis, and quantitative techniques appropriate to be successful in the profession. Promotes the skills necessary to determine the value of firms assets and the worth of those assets in financial markets.

FIN 3200
Financial Counseling
3:3:0  Fall, Spring
* Prerequisite(s): FIN 3060 and University Advanced Standing

Prepares students to be effective financial counseling practitioners. Trains students to begin their role as effective financial counselors and planners. Develops counselor and client relationships skills as well as communication techniques to help identify and assist clients in an integrated financial planning environment. Provides an overview of the learning process needed to recognize the financial issues and concerns of many individuals and families and how to appropriately recommend solutions to help clients help themselves, while focusing on counselor sincerity and effectiveness in client reality.

FIN 3210
Retirement Planning
3:3:0  Fall, Spring
* Prerequisite(s): FIN 3060, Matriculation into the Woodbury School of Business, University Advanced Standing, and For PFP Majors Only

Examines the topics of retirement planning and retirement plans from both employer and individual client settings. Uses a case study approach to apply and integrate the material. Emphasizes the evaluation of financial alternatives. Provides learning activities that will facilitate student growth and development in written and oral communication skills.

FIN 3220
Risk Management and Insurance
3:3:0  Fall, Spring
* Prerequisite(s): FIN 3060, University Advanced Standing, and For PFP Majors Only

Examines risk management and insurance planning for individual clients as well as employers of small corporations. Teaches the development of risk management and insurance plans with economic and behavioral theory. Uses a case study approach to apply and integrate the material. Emphasizes evaluation of financial alternatives. Provides learning activities that facilitate growth and development in written and oral communication skills.

FIN 3300
Tax Planning for Personal Financial Planners
3:3:0  Fall, Spring
* Prerequisite(s): FIN 3060, Matriculation into WSB, University Advanced Standing, and for PFP Majors only

Examines the topic of income tax planning and forecasting for individual clients and small business owners. Uses a case study approach to integrate the material and apply it to personal financial planning situations. Emphasizes the evaluation of financial alternatives. Provides learning activities that will facilitate student growth and development in written and oral communication skills. Works with local practitioners to provide an engaged learning experience.

FIN 3400
Investment Management
3:3:0  Fall, Spring, Summer
* Prerequisite(s): FIN 3100 and University Advanced Standing

Overviews the field of investments. Introduces stocks, bonds, put and call options, commodity and financial futures. Emphasizes both theory and practical aspects of investment management. Includes security valuation, market hypothesis, capital asset pricing, strategies of portfolio construction, performance measures, and risk/return relationships. Lab access fee of $30 for computers applies.

FIN 4020
Enterprise Risk Management
3:3:0  Fall, Spring, Summer
* Prerequisite(s): FIN 3100, MGMT 2340, and University Advanced Standing

Introduces the risks and exposures to loss which affect businesses and non-profit entities. Includes pure, financial, operational, and strategic risk. Emphasizes data collection, analysis, and evaluation methods. Provides an in-depth examination of risk management program objectives and goals. Provides the tools for identification and treatment.

FIN 4030
Foundations of Risk Management and Insurance
3:3:0  Fall, Spring, Summer
* Prerequisite(s): FIN 3100, MGMT 2340, and University Advanced Standing

Introduces fundamental risk management and insurance principles as essential components of global business operations and personal risk management. Provides an in-depth examination of risk identification, risk analysis, global risk exposures, insurance company operations, legal principles, loss prevention and safety concepts, and the social and economic relevance of risk management and insurance.

FIN 4040
Business Law for Insurance Professionals
3:3:0  Fall, Spring, Summer
* Prerequisite(s): FIN 3100, MGMT 2340, and University Advanced Standing

Introduces the fundamentals of insurance law. Provides an in-depth examination of the definition of insurance, risk and the nature of the insurance relationship, insurable interests, indemnity, fortuity, and subrogation. Studies the coordination of benefits, interpretation of policies, rights at variance with policy provisions, contract formation, warranties, misrepresentation and concealment, conditions, agents and brokers, insurance regulation, and introduction to insurance coverage.

FIN 4050
Commercial Property Risk Management and Insurance
3:3:0  Fall, Spring, Summer
* Prerequisite(s): FIN 3100, MGMT 2340, and University Advanced Standing

Introduces commercial property risk management, with an emphasis on risk control, risk financing and using insurance as an essential component of an enterprise risk management program. Provides an in-depth examination of risk assessment, loss prevention, and the treatment of risk and insurance in the areas of commercial property, loss of business income, cyber risk, and equipment breakdown.

FIN 4060
Commercial Liability Risk Management and Insurance
3:3:0  Fall, Spring, Summer
* Prerequisite(s): FIN 3100, MGMT 2340, and University Advanced Standing

Introduces business liability exposures to risk and loss arising from negligence and/or other legal doctrines. Examines insurance as an essential component of an enterprise risk management program. Provides an in-depth examination of risk assessment, loss prevention, and treatment of risk in the areas of general liability, business auto, worker's compensation, cyber risk, and management and professional liability.
FIN 4100 Management of Financial Institutions 3:3:0 Spring
* Prerequisite(s): FIN 3100 and University Advanced Standing

Studies the U.S. financial system and its primary institutions and markets. Includes the role of the Federal Reserve System, American and international financial markets. Explores the impact of monetary policy on financial institutions and financial intermediation. Presents the term structure of interest rates, money, capital and mortgage markets, and management of thrift institutions and insurance companies. Lab access fee of $30 for computers applies.

FIN 4160 Portfolio Management 3:3:0 Spring
* Prerequisite(s): FIN 4000 and University Advanced Standing

* Prerequisite(s) or Corequisite(s): MGMT 3345

Examines portfolio theory and applied techniques used in selecting appropriate securities and managing the risk and return of a portfolio, with a focus on meeting investment objectives. Considers both stock and bond portfolios, and includes discussion of market efficiency, diversification, measurement of risk and of performance, bond duration and portfolio immunization, advanced bond pricing principles, bond swaps, term structure of interest rates, asset allocation, and portfolio hedging strategies.

FIN 4170 Derivative Securities 3:3:0 Fall
* Prerequisite(s): FIN 3100 and University Advanced Standing

Examines pricing models for these securities, risk inherent in derivative investments, and the role of derivatives in risk management. May include discussion of real options and other topics dealing with financial engineering.

FIN 4180 International Finance Management 3:3:0 Fall, Spring, Summer
* Prerequisite(s): FIN 3100 and University Advanced Standing

Examines financial aspects of firms operating in an international business environment. Includes currency valuation and forecasting; international flow of funds; foreign and international capital markets; valuation of multinational enterprises; and the effect of decisions about structure of the business and its transactions on firm value; and management of currency, political, and other risks arising from multinational operations. Lab access fee of $30 for computers applies.

FIN 4190 Applied Asset Diversification and Management 3:3:0 Fall, Spring
* Prerequisite(s): FIN 3400 and University Advanced Standing

Examines practice management in various financial planning firms. Teaches the basics of practice management with an understanding of the core areas of personal financial planning. Uses a case study approach to apply and integrate the material and evaluate financial alternatives. Emphasizes the benefits and drawbacks of various management methods. Provides learning activities that will facilitate student growth and development in written and oral communication skills.

FIN 4200 Financial Counseling Practicum 3:3:0 Fall, Spring
* Prerequisite(s): FIN 3060, FIN 3200, Departmental Approval, Matriculation into WSB, and University Advanced Standing

Examines financial counseling with an engaged and practical focus. Uses actual client data in a supervised environment to integrate the material and core learning objectives, then apply them to financial counseling situations. Emphasizes the evaluation of credit and debt management, housing decisions and budgeting and forecasting. Provides learning activities designed to facilitate student growth and development in written, oral and presentation skills. Works with local practitioners to provide an engaged learning experience.

FIN 4210 Estate Planning Fundamentals 3:3:0 Fall, Spring
* Prerequisite(s): FIN 3060, FIN 3200, Departmental Approval, Matriculation into the Woodbury School of Business, University Advanced Standing, and For PFP Majors Only.

Examines estate planning, including financial and estate planning applications. Applies gift, estate, and generation skipping transfer taxation rules to personal financial planning scenarios. Studies financial regulations and taxation policy. May be delivered hybrid.

FIN 4250 Personal Financial Planning Practicum 3:3:1 On Sufficient Demand

Examines practice management in various financial planning firms. Teaches the basics of practice management with an understanding of the core areas of personal financial planning. Uses a case study approach to apply and integrate the material and evaluate financial alternatives. Emphasizes the benefits and drawbacks of various management methods. Provides learning activities that will facilitate student growth and development in written and oral communication skills.

FIN 4270 Wealth Management Seminar 3:3:0 Fall, Spring
* Prerequisite(s): FIN 3060, Matriculation into the Woodbury School of Business, University Advanced Standing, and For PFP Majors Only.

Introduces investment theory, literature and theories which describe the unique process of household investment decision making, and an introduction to quantitative investment analysis and the instruments used to construct an efficient household portfolio. Uses quantitative and theoretical material which will require a basic knowledge of economics and finance, and the ability to work with spreadsheets. Applies practical concepts to prepare students to work as wealth managers in financial planning firms.

FIN 4290 Technological Applications in Personal Financial Planning 3:3:0 Fall, Spring
* Prerequisite(s): FIN 3060, WSB matriculation, University Advanced Standing, and For PFP Majors Only.

Introduces various financial planning software packages. Includes both goal based and cash flow based financial planning software, client relationship management software, investment research software, portfolio management software, and office support software. Provides access to a variety of premier software companies in the U.S. and Canada. Certification in core software packages is required. Includes training material and standards as outlined by software companies.

FIN 4310 Real Estate Investment and Securities 3:3:0 Fall
* Prerequisite(s): FIN 3100 and University Advanced Standing

Examines real estate investments and debt and equity capital markets linked to real estate assets. Focuses primarily on real estate investments and valuation of debt and equity securities, including commercial and residential mortgages, real estate investment trusts, and mortgage-backed securities, and some related instruments such as CDOs. Examines the process of securitization and the secondary markets for real estate securities, together with the role of financial institutions in this sector. Provides an overview of real estate investment, measurement of prices, and fundamental determinants of value with particular attention given to the effect of interest rate risk, default risk, and the embedded prepayment options on the value of mortgages and mortgage-backed securities.

FIN 457R Advanced Topics in Finance 3:3:0 Fall, Spring
* Prerequisite(s): FIN 3100, Instructor Approval, and University Advanced Standing

Uses case method, examination of current academic and professional literature and/or student research to explore selected finance topics in considerable detail. Emphasizes student analysis, exposition and presentation of information. May be repeated four times for a maximum of 12 credits toward graduation.
FIN 4700
CFP Examination Preparation
3:3:0 Fall, Spring
* Prerequisite(s): FIN 3060, FIN 3210, FIN 3220, FIN 3300, FIN 3400, FIN 4210, and University Advanced Standing
* Prerequisite(s) or Corequisite(s): FIN 4800
Prepares personal financial planning students completing his/her bachelor of science degree who are planning to take the Certified Financial Planner accreditation exam. Provides review of the concepts and issues individuals need to be successful. Uses Dalton Education materials.

FIN 4800
Personal Financial Planning Capstone
3:3:0 Fall, Spring
* Prerequisite(s): FIN 3060, FIN 3210, FIN 3220, FIN 4210, FIN 3400, University Advanced Standing, and For PFP Majors Only.
Develops the concept of a comprehensive plan. Reviews each of the major aspects of financial planning in the context of a comprehensive case. Analyzes the financial planning profession and the various types of financial planning models. Provides an overview of software applications as well as interview skills, data gathering, working with clients, presentation skills, and the creation of a comprehensive financial plan.

FIN 481R
Personal Financial Planning Internship
2 to 8:2 to 8:0 Fall, Spring, Summer
* Prerequisite(s): Departmental Approval and University Advanced Standing
Provides supervised, practical, and professional experience for students preparing for careers in Personal Financial Planning. May be repeated for a maximum of 8 credit hours. May be graded Credit/No Credit.

FIN 482R
Internship
2 to 8:2 to 8:0 Fall, Spring, Summer
* Prerequisite(s): Instructor Approval and University Advanced Standing
For upper-division students in Finance. Provides a transition from school to work where learned theory is applied to actual practice through meaningful on-the-job paid experience commensurate with upper-division classroom instruction. Includes student, employer, and coordinator evaluations, on-site work visits, written assignments, and oral presentations. Completers should obtain experience in establishing and accomplishing individualized work objectives that improve work performance. May be repeated for 6 credits toward graduation. May be graded credit/no credit.

FIN 483R
Colloquium in PFP Professionalism
1:1:0 Fall, Spring
* Prerequisite(s): University Advanced Standing and For PFP Majors Only.
Prepares PFP Program students for internships and other professional development activities. Features industry professionals who interact with students and discuss opportunities within the industry and their specific professional practices. Covers special topics such as business etiquette, dressing for success, preparing professional resumes, correspondence, etc. May allow students to experience extended personal interaction with visiting professionals by hosting them, providing transportation to/from the airport, escorting them to local points of interest, and more. May be repeated for a maximum of 3 credits toward graduation.

FIN 5130
Financial Statement Analysis and Modeling
3:3:0 Fall, Spring
* Prerequisite(s): FIN 3100
Explains the relationships among the three primary financial statements including income statement, balance sheet, and cash flow statements. Analyzes companies in three primary sectors and does reviews and evaluations of these companies. Describes basic merger, acquisition, and initial public offering valuation concepts.

FIN 5160
International Financial Management
3:3:0 Fall, Spring
* Prerequisite(s): FIN 3100
Translates financial topics into an international perspective. Teaches international corporate finance transactions and the impact of currency implications on company financial translations. Provides a global context for cultural differences of financial concepts and practices in varied countries. Provides additional financial perspectives about international business transactions within the context of earlier financial courses.

FIN 5170
Investment Analysis and Portfolio Analysis
3:3:0 Fall, Spring
* Prerequisite(s): FIN 3100
Provides an introduction to the global securities market and its role in capital formation, wealth-creation, economic development, risk mitigation, wealth management, and other finance-related goals.

FIN 5180
CFA Examination Preparation
3:3:0 Fall, Spring, Summer
* Prerequisite(s): Permission of instructor or department chair
Prepares participants to sit for the Chartered Financial Analysis (CFA) Level 1 section of the exam. Requires students to work through a modular process covering outlined topics required for the exam including ethics, quantitative methods, economics, corporate finance, financial reporting/analysis, security analysis, and portfolio management.

FIN 6100
Research Methods
3:3:0 Fall, Spring, Summer
* Prerequisite(s): Admission to Masters FPA Program
Describes graduate level research methods, processes, and skills appropriate to the analysis of applied business projects. Reviews scientific methods analysis, research design, measurement and scaling, testing reliability and validity, communication of research results, and other relevant concepts.

FIN 6130
Financial Statement Analysis and Modeling
3:3:0 Fall, Spring
* Prerequisite(s): Acceptance in MBA Program
Develops fluency with the three primary financial statements including income statement, balance sheet, and cash flow statement. Projects statements for companies in three primary sectors and conducts a full enterprise valuation for projected companies. Conducts a mock merger, acquisition, and initial public offering valuation.

FIN 6140
Regulatory Policy in the Financial Services Industry
3:3:0 Fall, Spring, Summer
* Prerequisite(s): Admission to Masters of Financial Planning and Analytics Program
Describes the functions and purposes of regulatory policy within the financial services industry. Outlines alternative philosophies which influence regulatory policy development including implementation of public policy for these purposes. Reviews varied government, industry, and other agencies responsible for regulatory policy in the financial service industry.

FIN 6150
Financial Management
3:3:0 Fall, Spring, Summer
* Prerequisite(s): Acceptance in the MBA program
Discusses corporate financial management cases and analyses dealing with problems of working capital management, capital budgeting, cost of capital evaluation, and corporate restructuring. Canvas Course Mats $78/Cengage applies.

FIN 6160
International Financial Management
3:3:0 Fall, Spring
* Prerequisite(s): Acceptance into MBA Program
Translates financial topics into an international perspective. Focuses on international corporate finance transactions and the currency implications of financial statement translations. Provides a global context for cultural differences of financial concepts and practices around the world. Offers a financial perspective treating international business.

FIN 6170
Investment Analysis and Portfolio Analysis
3:3:0 Fall, Spring
* Prerequisite(s): Acceptance into MBA Program
Provides an introduction to the global securities market and its role in capital formation, wealth-creation, economic development, risk mitigation, wealth management, and other finance-related goals. Utilizes extensive use of Bloomberg Terminals in the development of company and industry analyses.
FIN 6180 Asset Protection and Trust Planning  
3:3:0 Fall, Spring, Summer  
* Prerequisite(s): Acceptance in Masters of FPA Program  
Describes a variety of processes for evaluating asset values and pairing those processes with client's requirements. Reviews alternative trust types, policies for achieving varied client objectives, and evaluating trust effectiveness.

FIN 6200 Behavioral Finance Seminar  
3:3:0 Fall, Spring, Summer  
* Prerequisite(s): Admission to the Masters in Financial Planning and Analytics Program  
Describes complementary approach to traditional finance theory which assumes investors and finance professionals use rational decision processes. Presents alternative perspectives using behavioral finance theory which assumes cognitive processes in decision making and the implications for these behavioral finance concepts in investment and corporate decision making activities.

FIN 6210 Retirement Planning  
3:3:0 Fall, Spring, Summer  
* Prerequisite(s): Admission to the Masters in Financial Planning and Analytics Program  
Examines topics of retirement planning and retirement plans at the graduate level from both employer and individual client perspectives. Uses case study approach to apply and integrate the material. Emphasizes the evaluation of financial alternatives. Provides learning activities that will facilitate student growth and development in written and oral communication skills.

FIN 6250 Retirement Income Planning  
3:3:0 Fall, Spring, Summer  
* Prerequisite(s): Acceptance in the Masters of FPA  
Describes the special issues related to managing and sustaining retirement income for people depending on that source for livelihood. Evaluates alternative sources of income for retired individuals including social security, pensions, 401K, and other sources. Describes varied strategies for sustaining value, evaluating withdrawals from principal, reviews of sustainability, and other related concepts.

FIN 6260 Estate Planning  
3:3:0 Fall, Spring, Summer  
* Prerequisite(s): Acceptance into Masters FPA Program  
Describes elements of estate planning including gift, estate, generation skipping, tax implications and other relevant issues financial planners need to identify client needs. Identifies planning concepts, tools, and varied processes important to meet needs of individual clients.

FIN 6270 Wealth Management  
3:3:0 Fall, Spring, Summer  
* Prerequisite(s): Acceptance into Masters of FPA Program  
Introduces investment theory, literature and theories relating to the unique processes of household investment decision making. Implements quantitative investment analyses and the instruments appropriate to the development of an efficient household portfolio. Teaches quantitative and theoretical concepts requiring a basic knowledge of economics, finance, and the ability to work with spreadsheets. Applies practical concepts to prepare students to work as wealth managers in financial planning firms.

FIN 6290 Advanced Technology Applications in PFP  
3:3:0 Fall, Spring, Summer  
* Prerequisite(s): Acceptance in the Masters of FPA  
Introduces various financial planning software packages. Includes both goal based and cash flow based financial planning software, client relationship management software, investment research software, portfolio management software, and office support software. Provides access to a variety of premier software companies in the U.S. and Canada. Describes training material and standards as outlined by software companies. Requires certification in core software packages.

FIN 6300 Income Tax Planning  
3:3:0 Fall, Spring, Summer  
* Prerequisite(s): Acceptance into the Masters of FPA  
Examines the topic of income tax planning and forecasting for individual clients and small business owners. Executes a case study approach to integrate material and apply it within a personal financial planning context. Implements materials to facilitate student growth and development in written and oral communication skills. Organizes activities with local practitioners to provide an engaged learning experience.

FIN 6340 Analytics and Advanced Statistics  
3:3:0 Fall, Spring, Summer  
* Prerequisite(s): Acceptance in the Masters of FPA Program  
Describes processes and methods that statisticians use to analyze business, financial, and related issues. Teaches how to determine types of data required to address specific problems, how to gather, analyze, and report that information to suggest solutions to identified problems. Evaluates the effectiveness of varied statistical processes in applying those techniques to address specific types of issues. Practices the application of statistical methods to the evaluation of identified problems.

FIN 6400 Client Relationships Management  
3:3:0 Fall, Spring, Summer  
* Prerequisite(s): Acceptance into Masters of FPA Program  
Outlines processes for developing and sustaining client relationships to manage a professional financial planning operation. Reviews alternative electronic applications designed to support client relationships. Evaluates the effectiveness of alternative client management systems including both strengths and challenges of such systems.

FIN 6450 Planning for Financial Planning Business Owners  
3:3:0 Fall, Spring, Summer  
* Prerequisite(s): Acceptance into the Masters of FPA Program  
Reviews varied business organizations, structures, processes, and other related activities necessary to the effective management of a financial planning business. Evaluates client management, financial planning software, business and tax accounting software, and other needed technology support. Teaches professional development activities for planning professionals and staff. Analyzes marketing, human resources, and other business function processes. Integrates best business practices.

FIN 657R Special Topics in Financial Planning  
3:3:0 Fall, Spring, Summer  
* Prerequisite(s): Admission to the Masters FPA  
Reviews special topics such as new tax laws, revisions of charitable giving procedures, developing specialized trusts, changes in financial industry regulatory processes, and other related topics. May be repeated for a maximum of 6 credits toward graduation.

FIN 6700 CFP Exam Preparation  
3:3:0 Fall, Spring, Summer  
* Prerequisite(s): FIN 6210, FIN 6300, and FIN 6260  
* Corequisite(s): FIN 6800  
Prepares personal financial planning students completing master's degree who are planning to take the Certified Financial Planner accreditation exam. Provides review of the concepts and issues individuals need to be successful.

FIN 6800 PFP Capstone  
3:3:0 Fall, Spring, Summer  
* Prerequisite(s): Acceptance into Masters of FPA  
Develops the concept of a comprehensive plan. Reviews each of the major aspects of financial planning in the context of a comprehensive case. Analyzes the financial planning profession and the various types of financial planning models. Provides an overview of software applications as well as interview skills, data gathering, working with clients, presentation skills, and the creation of a comprehensive financial plan.

FIN 6810 CFA Exam Preparation  
3:3:0 Fall, Spring, Summer  
* Prerequisite(s): Admission to Masters of FPA Program and instructor approval  
Prepares participants to sit for the Chartered Financial Analyst (CFA) Level 1 section of the exam. Requires students to work through a modular process covering outlined topics required for the exam including ethics, quantitative methods, economics, corporate finance, financial/reporting/analysis, security analysis, and portfolio management.
**Course Descriptions**

**French (FREN)**

**FREN 1010**
**Beginning French I 4:4:1**
- **Fall, Spring, Summer**
- Emphasizes understanding, speaking, reading and writing skills. Basic language usage and cultural understanding are acquired through an activity-based approach. Lab access fee of $10 applies.

**FREN 1020**
**Beginning French II 4:4:1**
- **Fall, Spring, Summer**
  - *Prerequisite(s):* Students need equivalent knowledge of FREN 1010
  - Completes the first year of study. Includes the remaining grammar, language concepts, and culture, and introduces students to literature in French. Lab access fee of $10 applies.

**FREN 115R**
**French Conversation I 1:1:0**
- **Fall, Spring**
  - Offers novice French speakers opportunities to enhance their speaking proficiency in the target language by focusing on oral verbal production. Teaches how to improve authentic pronunciation, reduce errors in authenticity of language structure, generate thought in the target language spontaneously as a substitute for translation, and sharpen listening comprehension for natural conversational flow. Contrasts with all other first year courses which must strive to produce mastery of the whole range of language acquisition components, including writing, grammar, etc. Facilitates lowering the affective filter when conversing in the target language by increasing the frequency of speech opportunities and defusing concern for such matters as spelling, etc. Increases mastery of lexical items through increased frequency of oral usage. May be repeated for a maximum of 3 credits toward graduation.

**FREN 1500**
**French Travel Study 3:1:6**
- **On Sufficient Demand**
  - Introduces students to a French-speaking foreign country for a minimum of 10 days of intensive language and culture study. Course entails several meetings prior to departure and at least one after the return home to facilitate observation and analysis of data to be gathered on the tour. An organized presentation of that data will be contained in a multimedia project due no later than one month after tour.

**FREN 2010**
**Intermediate French I 4:4:1**
- **Fall, Spring**
  - *Prerequisite(s):* Students need equivalent knowledge of FREN 1020
  - Reviews grammar, reading, writing, and conversation skills learned throughout the first year. Introduces readings and discussions on the history, culture, and literature of the French world. Lab access fee of $10 applies.

**FREN 202G**
**Intermediate French II 4:4:0**
- **Fall, Spring**
  - *Prerequisite(s):* Students need equivalent knowledge of FREN 2010
  - Emphasizes reading, writing, and conversational skills through socio-cultural studies in history, literature and art. Lab access fee of $10 applies.

**FREN 2050**
**Advanced French Grammar and Composition 3:3:0**
- **On Sufficient Demand**
  - *Prerequisite(s):* FREN 202G or equivalent
  - Explores grammar of French focusing on areas typically difficult for English speakers. Provides extensive instruction in, and opportunity for the students' improvement in language production, both oral and written. Completers should improve considerably their ability to express themselves in the foreign language both orally and in written form.

**FREN 215R**
**French Conversation II 1:1:0**
- **Fall, Spring**
  - *Prerequisite(s):* Students should have equivalent knowledge of FREN 1020
  - Offers lower division / novice speakers opportunities to enhance their speaking proficiency in the target language by focusing on oral verbal production. Teaches how to improve authentic pronunciation, reduce errors in authenticity of language structure, generate thought in the target language spontaneously as a substitute for translation, sharpen listening comprehension, and develop conversational strategies such as circumlocution and managing a conversation with useful expressions for starting a conversation, gaining time to think, helping the other speaker, seeking agreement, etc. Contrasts with all other first year courses which must strive to produce mastery of the whole range of language acquisition components, including writing, grammar, etc. Facilitates lowering the affective filter when conversing in the target language by increasing the frequency of speech opportunities and defusing concern for such matters as spelling, etc. Increases mastery of lexical items through increased frequency of oral usage. May be repeated for a maximum of 3 credits toward graduation.

**FREN 3040**
**Introduction to Literary Genres in French 3:3:0**
- **Spring**
  - *Prerequisite(s):* (FREN 202G or equivalent) and University Advanced Standing
  - Explores different literary genres in the French language throughout the centuries. Provides extensive opportunity for improvement in oral and reading/writing development of language skills, as well as new ways of thinking about literature in cultural contexts. Completers should considerably improve their ability to express themselves in the foreign language. Taught entirely in French.

**FREN 3050**
**Advanced French 3:3:0**
- **Fall, Spring**
  - *Prerequisite(s):* It is recommended that students take FR 202G prior to enrolling in FR 3050. If you have advanced study of French, you may also contact the French Program Director for a placement test.
  - Building upon lower-division courses, continues to emphasize reading, writing, and conversational skills through studies in literary and other texts, including films dealing with Francophone cultures. Includes an in-depth review of grammar. Lab access fee of $10 applies.

**FREN 3116**
**Adventure and Discovery-Journeys through the French and Francophone Worlds 3:3:0**
- **Fall**
  - *Prerequisite(s):* Pass French AP Exam with minimum score of 3
  - This course is part of the French Bridge Program in the State of Utah, open only to high school students in the Bridge Program. Not to be taught on main campus, and not open to students who are not enrolled in a participating high school. Explores themes of discovery, adventure, and journey in the French and Francophone world through the prism of the fine arts, history, music, texts, films, and other areas. Taught in French.

**FREN 3117**
**Francophonie-Past/Present/Future 3:3:0**
- **Fall, Spring**
  - *Prerequisite(s):* Pass French AP Exam with minimum score of 3
  - This course is part of the French Bridge Program in the State of Utah, open only to high school students in the Bridge Program. Not to be taught on main campus, and not open to students who are not enrolled in a participating high school. Explores themes such as coming of age, rite of passage, and education as encountered in cultural artifacts and literatures from France and the Francophone world. Taught in French.
FREN 3118
Paris City of Lights
3:3:0 Fall
* Prerequisite(s): Pass French AP Exam with a minimum score of 3.
This course is part of the French Bridge Program in the State of Utah, open only to high school students in the Bridge Program. Not to be taught on main campus, and not open to students who are not enrolled in a participating high school. Explores the City of Lights through the prism of important themes, including, but not limited to, the arts, history, commerce, technology, sports, etc. Examines course themes through a variety of approaches, such as project based instruction, class discussion, and reaction papers. Taught in French.

FREN 3200
Business French
3:3:0 Spring
* Prerequisite(s): (FREN 3050 or equivalent knowledge) and University Advanced Standing
For those who plan to pursue careers in international business or related fields, learn French business language, understand French corporate culture, or plan to major or minor in French. Teaches French business terminology and prepares students to take the Chambre de Commerce et d'Industrie de Paris exam. Explores technological, personal, and professional aspects of business. Will be taught entirely in the French language. Lab access fee of $10 applies.

FREN 351G
Culture and Civilization to 1700
3:3:0 Fall Even Year
* Prerequisite(s): FREN 3050 and University Advanced Standing
Explores chronologically to 1700 the formation and development of French speaking societies and cultures. Traces the ethnic development and linguistic history of these societies and peoples, as well as examines manifestations of their aesthetic endeavors. Presentations and class instruction conducted entirely in French.

FREN 352G
Culture and Civilization from 1700
3:3:0 Spring Odd Year
* Prerequisite(s): FREN 3050 and University Advanced Standing
Explores chronologically to 1700 the formation and development of French speaking societies and cultures. Traces the ethnic development and linguistic history of these societies and peoples, as well as examines manifestations of their aesthetic endeavors. Presentations and class instruction conducted entirely in French.

FREN 353G
Contemporary French Civilization and Culture
3:3:1 On Sufficient Demand
* Prerequisite(s): (FREN 3050 or equivalent) and University Advanced Standing
Examines contemporary French culture topics (family, education, love and the couple, religion, social challenges, governmental functions, etc.) through studying a variety of French sources: readings, film, lecture, individual research, etc. Analyzes topics through active class discussion in French. Integrates new cultural perspectives in papers and assignments researched and written in French. Conducted entirely in French.

FREN 3610
French Literature to 1700
3:3:0 Fall Odd Year
* Prerequisite(s): (FREN 3050 or equivalent knowledge) and University Advanced Standing
Introduces chronologically to 1700 representative French authors. Emphasizes literary analysis and criticism. Completers should develop knowledge of literary history, acquire skills in interpreting literary texts, and deep understanding of the French language. Presentations and class instruction conducted entirely in French.

FREN 3620
French Literature from 1700
3:3:0 Spring Even Year
* Prerequisite(s): (FREN 3050 or equivalent knowledge) and University Advanced Standing
Introduces chronologically from 1700 representative French authors. Emphasizes literary analysis and criticism. Completers should develop knowledge of literary history, acquire skills in interpreting literary texts, and deep understanding of the French language. Presentations and class instruction conducted entirely in French.

FREN 4050
Special Topics in Grammar Usage and Style
3:3:0 Fall Odd Year
* Prerequisite(s): FREN 3050 and University Advanced Standing
Focuses on understanding French grammar in context. Uses various literary texts and other print materials in an effort to underscore the grammar concepts studied.

FREN 4100
Teaching French Grammar
3:3:0 Fall Even Year
* Prerequisite(s): FREN 4050, instructor approval, and University Advanced Standing
Focuses on the fundamental concepts and practices of teaching French grammar in context. Prepares students to teach French language in secondary school settings. Requires a portfolio of best teaching practices as related to grammar instruction.

FREN 4200
Advanced Business French
3:3:0 Spring Odd Year
* Prerequisite(s): (FREN 3200 or equivalent knowledge) and University Advanced Standing
For those taking the exam leading to the Diplome de Francais des affaires (DFA 2) awarded by the Chambre de Commerce et d'Industrie de Paris. Emphasizes case studies, marketing, resumes, cover letters, job interviews, computers, and the Internet. Taught entirely in French.

FREN 4500
Advanced Writing in French
3:2:3 Spring Odd Year
* Prerequisite(s): (FREN 3030 or FREN 3040) or FREN 3050 and University Advanced Standing
Increases students' accuracy, clarity and use of appropriate registers when writing in French. Informs them of the significant roles played by form, content and intentionality of discourse in their writing, and improves their skills in addressing the requirements of those various roles.

FREN 4900
French Capstone Seminar
3:3:0 Spring Even Year
* Prerequisite(s): FREN 4050, instructor approval, and University Advanced Standing
Provides the opportunity to showcase language abilities through various oral and written assignments. Culminates in a final research project in the target language. Requires a selected subject to explore for the capstone project. Possible research areas include literary, film, and gender studies.

FREN 490R
Special Topics in French
3:3:0 On Sufficient Demand
* Prerequisite(s): (FREN 202G or instructor approval) and University Advanced Standing
Studies topic in detail not offered in other courses. Addresses key aspects of the topic. Engages students in critical analysis and discourse. Develops language skills requisite to such analysis and specific to the topic. Possible topics include French Film, Translation and Interpretation, Francophone Literature, Women's Texts, Courtly Love. Conducted entirely in French. May be repeated for up to 9 credit hours towards graduation.

Forensic Science (FSCI)

FSCI 3300
Forensic Photography
3:3:0 Fall, Spring
* Prerequisite(s): (CJ 1350 or FSCI 3400 with a 'C+' or higher) and University Advanced Standing
Explains the basic concepts of Forensic Photography while exploring the fundamental skills for the selection and use of photography equipment. Identifies the basic principles and fundamentals of using photography with regard to crime scenes, forensic evidence, and identification photography. Illustrates skills utilizing a DSLR camera with various types of lighting, camera settings, and common camera accessories. Explains techniques involving surveillance, impression, close up, alternate light sources, infrared photography, and the legal aspects of forensic photography as it pertains to criminal investigations. Course fee of $155 applies.

FSCI 3400
Criminalistics
3:3:1 Fall, Spring
* Prerequisite(s): CJ 1350 with a C+ or higher and University Advanced Standing
Emphasizes the learning and proper use of technical vocabulary used in forensic science. Introduces basic photography and presentation techniques as they relate to the field of forensics. Teaches laws pertaining to making photographic copies and the legal steps required for altered photographs to be accepted in the criminal court system. Introduces basic laboratory measurement and statistical techniques. Uses stereo and compound light microscopes to visually examine physical evidence. Discusses the scientific theory and analytical procedures for analyzing refractive index of glass, species identification of hair, bullet rifling, DNA and the calculation of Post Mortem Interval. Course Lab fee of $142 for materials applies.
FSCI 3700

Fingerprint Processing
3:3:0
Fall, Spring

* Prerequisite(s): (CJ 1350 or FSCI 3400 with a C+ or higher) and University Advanced Standing

Teaches professional conduct in fingerprint processing. Explains the differences in latent fingerprints as they relate to the physical condition in which they are found. Describes and utilizes the equipment needed for fingerprint development, lifting, and comparison. Course fee of $143 for materials applies. Lab access fee of $30 applies.

FSCI 3720

Fingerprint Examination
3:3:0
Spring

* Prerequisite(s): (CJ 1350 or FSCI 3400 with a C+ or higher) and University Advanced Standing

Presents the history of fingerprint examination. Teaches recent technical advances in fingerprint development and examination. Describes the theory and make-up of fingerprints, palm prints, and footprints. Explores charting and comparison techniques. Teaches criteria used to determine successful identification versus non-identification. Lab access fee of $30 computers applies. Course fee of $30 materials applies.

FSCI 3780

Bloodstain Pattern Analysis
3:3:0
Fall, Spring

* Prerequisite(s): (CJ 1350 or FSCI 3400 with a C+ or higher) and University Advanced Standing

Teaches the basics of handling blood evidence typically encountered at a crime scene. Explains terminology and the techniques of documentation as it relates to the analysis of bloodstain patterns. Presents the physical properties of blood as they apply to forensic investigation. Identifies characteristic patterns and computer applications to interpret the impact patterns of spattered blood. Illustrates the concepts of motion, directionality, area of convergence, and the area of origin of impact bloodstain patterns. Teaches traditional and modern techniques in crime scene reconstruction for documenting and reconstructing the crime scene. Describes guidelines for presenting bloodstain evidence at trial. Course lab fee of $75 for materials applies.

FSCI 3780

Crime Scene Investigation Techniques I
3:3:0
Fall, Spring

* Prerequisite(s): (CJ 1350 or FSCI 3400 with a C+ or higher) and University Advanced Standing

Explains the fundamental goals of crime scene investigation and the importance of physical evidence. Teaches fundamental crime scene documentation skills including note taking, sketching, and photography. Teaches evidence identification, collection, and packaging procedures. Provides experience in evidence identification, documentation, collection, and packaging procedures. Course Lab fee of $145 applies.

FSCI 3820

Crime Scene Investigation Techniques II
3:3:0
Fall, Spring

* Prerequisite(s): FSCI 3820, FSCI 3780, and University Advanced Standing

Teaches computer-based crime scene measurement and diagram tools utilized to properly document crime scenes including clandestine human graves, scattered human remains, and under water, fire, and arson scenes. Provides instruction in proper approach, documentation, and analysis of complex crimes scenes. Teaches crime scene reconstruction techniques in bloodstain patterns and shooting incident scenes. Course fee of $155 for materials applies. Course fee of $30 applies.

FSCI 3850

Marijuana Identification Certificate
3:2:2
Summer

* Prerequisite(s): (CJ 1350 or FSCI 3400 with a C+ or higher) and Instructor Approval

Teaches the botanical and chemical methodology required for the legal identification of marijuana. Identifies the microscopic morphological features of the plant material. Uses thin layer chromatography to detect hallucinogenic chemicals. Uses the Duquenois-Levine Test to detect the cannabinoid family of chemicals and how to recognize false-positive results. Teaches the methodology to detect marijuana residues in charred debris. Interprets data, writes a marijuana analysis report and presents results in a Moot Court. Course fee of $155 for materials applies.

FSCI 3860

Forensic Microscopy
3:2:3
Fall

* Prerequisite(s): (CJ 1350 or FSCI 3400 with a C+ or higher) and University Advanced Standing

Lays the foundation of forensic microscopy. Explains the theory of the microscope: light and lenses. Describes the major variants of the compound microscope including the stereo, polarized light and comparison varieties. Explains the function and purpose of the illuminator, sub-stage condenser, objective, and ocular. Establishes acceptable performance criteria and image quality as it relates to compromises among resolution, magnification, and visibility. Presents the use of specialized contrast enhancement methods and illumination techniques. Explains the theory and use of the polarized light microscope in the examination of anisotropic, birefringent, and optical properties of crystalline materials. Describes the use of the microscope as a quantitative measuring tool. Introduces instrument systems calibration methods for both the microscope as well as imaging software. Describes the collection and examination of micro-traces and the use of micro-trace catalogs. Examination and discussion of firearms, bullet, tool marks, hair and fiber characteristics. Lab access fee of $30 for computers applies. Course fee of $152 for materials applies.
FSCI 3880 Expert Witness Professional Practices 3:3:0 Spring
* Prerequisite(s): (CJ 1330 and CJ 2350 each with a C+ or higher) and University Advanced Standing
Stresses the importance of background checks, polygraph tests and personal integrity. Teaches Professional Competence: training, degrees and certificates, publications, affiliations, testimony, track record, continuing education. Describes the duties and the special privileges of opinion testimony afforded to expert witnesses. Explains the Rules of Evidence and statistical reliability as they pertain to scientific data and findings. Presents guidelines for case review and report writing. Discusses trial strategy, testimony, presentations, and dangers that confront the expert witness at court. Discusses cross-examination strategies. Teaches professional practices including personal organization, contracts for hiring the expert for professional services, consultation, correspondence, record keeping, fee setting, and fee collection.

FSCI 4000 Firearms Examination 3:3:0 Fall
* Prerequisite(s): (CJ 1350 and FSCI 3400 with a C+ or higher) and University Advanced Standing
* Prerequisite(s) or Corequisite(s): FSCI 3860
Identifies modern firearms and ammunition while teaching how they operate and are manufactured. Explains how to collect, preserve, transport, and safely handle firearms and ammunition. Discusses the procedures of firing and the recovery of test bullets. Teaches the procedures of serial number restoration, gun shot residue tests, distance determinations, microscopic and chemical examinations. Includes how to interpret data, write reports of findings, and present results in a court of law. Course fee of $65 applies.

FSCI 4100 Forensic Pathology 3:3:0 Fall
* Prerequisite(s): ZOOL 1090, or ZOOL 2320 and 2325, University Advanced Standing
Teaches the fundamentals of scientific techniques used by forensic pathologists in medicolegal investigations. Differentiates between sudden or unexpected deaths, homicides, suicides, accidental deaths, and trauma.

FSCI 4200 Medicolegal Death Investigations 3:3:0 Spring
* Prerequisite(s): FSCI 4100 and University Advanced Standing
Discusses the foundation for understanding death scene analysis by an investigator in conjunction with a medical examiner while discussing the integration of medical, scientific, and legal methodology as applied to Medicolegal Death Investigations. Examines various techniques used in the study of forensic science and medicine. Teaches the interpretation of the facts and evidence to help determine and reconstruct the sequence of events at a variety of classic death scenes. May be delivered hybrid.

FSCI 443R Directed Research in Forensic Science 2 to 7:1:3 to 15 Fall, Spring, Summer
* Prerequisite(s): Instructor Approval and University Advanced Standing
Provides undergraduate research. Guidance by a faculty member directs literature data, experimental design, data acquisition, interpretation of results, and conclusion. Written report, suitable in form for publication, necessary for completion. May be repeated for a maximum of 7 credits toward graduation. Lab access fee of $30 for computers applies. Course fee of $310 for materials applies.

FSCI 475R Current Topics in Forensic Science 3:3:0 Fall, Spring, Summer
* Prerequisite(s): CJ 1350 or FSCI 3400 with a C+ or higher, and University Advanced Standing
Presents selected topics in Forensic Science and Forensic Investigations. Provides a special topic related to the area of study. May be repeated with different topic areas for a maximum of 9 credits toward graduation.

FSCI 481R Forensic Science Internship 1 to 9:1:0 Fall, Spring, Summer
* Prerequisite(s): Department application approval and University Advanced Standing
Provides actual, on-the-job work experience on a paying or non-paying (volunteer) basis in a Forensic Science profession or other approved related discipline. Emphasizes successful work experience through job shadowing of a professional. May be repeated for a maximum of 9 credits toward graduation. May be graded Credit/No Credit.

FSCI 491R Directed Reading and Special Projects 1 to 3:1 to 3:0 Fall, Spring, Summer
* Prerequisite(s): Department Approval and University Advanced Standing
Offers independent study as directed in theoretical, experimental, or practical discipline emphasis in an area not covered by regular courses. May be Graded Credit/No Credit. May be repeated for a maximum of 9 credits toward graduation.

FSCI 4990 Forensic Investigation Capstone 3:3:0 Spring
* Prerequisite(s): FSCI 3300, FSCI 3830 and University Advanced Standing
Applies qualitative, quantitative, and/or mixed research methods for selected issues in forensic investigation. Requires the student to develop and present an undergraduate research project both orally and in writing. Students should plan to register for this course in their last semester of the program.

Geography (GEOG)

GEOG 1000 Introduction to Physical Geography 3:3:0 Fall, Spring, Summer
Explores the world through each of the major components of physical geography: climatology, hydrology, geomorphology, and biogeography, focusing on how they are interrelated. Emphasizes the dynamic interactions among climate, vegetation, soils, and landforms. Can be taken in conjunction with laboratory exercises in GEOG 1005.

GEOG 1005 Introduction to Physical Geography Lab 1:0:2 Fall, Spring, Summer
* Prerequisite(s) or Corequisite(s): GEOG 1000
Designed to be taken in conjunction with GEOG 1000. Explores the world from a broad perspective, examining each of the major components of physical geography: climatology, hydrology, geomorphology, and biogeography. Investigates physical processes of and interactions among climate, vegetation, soils, and landforms.

GEOG 130G Survey of World Geography GI 3:3:0 Fall, Spring, Summer
Explores the world in which we live. Studies major countries of the world with special emphasis on location, physical environment, culture, resources, and current events. May be delivered online.

GEOG 1400 Introduction to Human Geography 3:3:0 Spring Even Year
Examines the theoretical, spatial, and relational aspects of human activity across the Earth’s surface. Discusses the analytical frameworks for understanding the interactions of social, cultural, economic and political systems. Topics include population dynamics, international development, human conflicts, and urbanization.

GEOG 1600 Geography of Utah 3:3:0 Fall
Applies principles and methods of physical, cultural, and human-environment geography to the study of Utah’s people, places, and environments; considers problems of adjustment, including natural hazards, environmental concerns, and human problems. Designed for Secondary Education students seeking Geography or Social Science Composite certifications.

GEOG 2000 Sustainability and Environment 3:3:0 Fall
Explores relationships of human and natural systems, how cultural groups experience nature, and global sustainability. Examines different ways of perceiving nature, resources, the environment, and society. Critically analyzes links between social, economic, political, historical, cultural, and environmental processes. Discusses environmental problems and ways to build more sustainable futures. Includes participation in locally sustainability issues.
GEOG 2100 Geography of the United States 3:3:0 Spring Odd Year
Surveys primarily the regional geography of the United States. Explores subregions of each country in detail. Includes topics such as culture, environment, economy, urbanization, transportation systems, territory and political borders.

GEOG 2200 Geography of Europe 3:3:0 On Sufficient Demand
Provides a regional survey of Europe including topics such as economic development, environment, politics, society and culture. Explores the place of Europe in geopolitical and global economic systems. Discusses internal relationships within the European Union, Eastern Europe and Russia.

GEOG 2500 Geography of Latin America and the Caribbean 3:3:0 Spring
Surveys the Americas south of the United States. Explores each subregion of Latin America and the Caribbean in detail. Includes topics such as development, environment, indigenous peoples, history, and national political and financial crises.

GEOG 3010 Economic Geography 3:3:0 On Sufficient Demand
Prerequisite(s): University Advanced Standing
A course encompassing the study of humankind’s economic activities on the earth, including hunting, gathering, agriculture, mining, manufacturing, forestry, fishing, high technology, and world trade. Studies population, environmental issues, urban patterns, and travel and tourism. Uses lectures, oral response, field trips, and audiovisual aids.

GEOG 3100 Cartography 3:2:3 On Sufficient Demand
Prerequisite(s): (MAT 1030, MAT 1035, STAT 1040, STAT 1045, MATH 1050, MATH 1055, or higher) and (GEO 1010 or GEOG 1000 or GEOG 1300 or equivalent); and University Advanced Standing
Introduces fundamental principles of cartography including perception, visualization, topographic and thematic map interpretation, field mapping techniques (including GPS), and creating computer-based maps. Includes concepts of direction, scale, grids, projections, spatial transformations, spatial data analysis, data manipulation decisions, color theory and application, and principles of cartographic design and critical evaluation.

GEOG 3110 Urban Geography 3:3:0 Spring
Prerequisite(s): University Advanced Standing; GEOG 1300 preferred
Focused on the origins, growth, structure and function of cities. Examines social and political dimensions of urban life and the emergence of new urban spaces around the world. Includes case studies in the decline of urban industrial America and the rise of Sunbelt and Edge Cities.

GEOG 3250 Cultural Geography 3:3:0 On Sufficient Demand
Prerequisite(s): (ENGL 2010 or instructor approval) and University Advanced Standing
Surveys the geographic complex of cultural forms including language, religion, music, art, architecture, folklore, food, clothing and land use. Topics include cultural conflicts, globalization, and the international entertainment industry.

GEOG 3400 Environmental Remote Sensing 3:2:3 Fall
Prerequisite(s): GEOG 3600 or GIS 3600; and an upper division course in natural science recommended; and University Advanced Standing
Introduces the history, theory, and operation of remote sensing software. Includes an introduction to the electromagnetic spectrum and signals, sensors, image processing, and classification techniques. Provides a survey of the concepts and techniques of remote sensing and image analysis for mapping and monitoring natural resources, environment and land use, and an array of geoscientific applications at different scales. Software fee of $18 applies. Lab access fee of $35 applies.

GEOG 3430 Political Geography 3:3:0 On Sufficient Demand
Prerequisite(s): University Advanced Standing
Surveys the geographic dimensions of political action and theory at local, national and global scales. Covers topics such as geopolitics, nationalism, territoriality, and political conflicts. Examines subjects such as American electoral patterns, Cold War geopolitics, and 21st century global security.

GEOG 3500 Geomorphology 3:3:0 Spring
Prerequisite(s): MATH 1050 or MATH 1055 or equivalent, University Advanced Standing, and one of the following lecture and lab pairs: (GEOG 1010 and GEOG 1015) or (GEOG 1000 and GEOG 1005)
Examines the geologic processes operating at the Earth’s surface to understand the origin of our planet’s varied landscapes. Explores how landforms respond to climate change, tectonic forcing, and changes in land use. Addresses common geomorphic processes including weathering, soils, hill slope processes, fluvial processes and landforms, aeolian transport, glacial and periglacial environments, karst, and coastal processes. Course lab fee of $21 applies.

GEOG 3600 (Cross-listed with: GIS 3600) Introduction to Geographic Information Systems 4:3:3 Fall, Spring
Prerequisite(s): [Completion of a course that meets the PP (Physical Science) or SS (Social Science) general education requirement is recommended] and University Advanced Standing
Introduces the theory, and operation of Geographic Information Systems (GIS). Includes an introduction to GIS data sources, database design, data input, spatial analysis, and map production. Offers valuable preparation for careers in geology, geography, geographic information systems, geomatics, planning, surveying, marketing, environmental technology, biology, engineering, and other related fields. Software fee of $35 for computers applies.

GEOG 3650 Advanced Geographic Information Systems 4:3:3 Spring
Prerequisite(s): GEOG 3600 and University Advanced Standing
Expands on GEOG 3600, Introduction to Geographic Information Systems (GIS), and reviews advanced GIS functions and applications to the sciences. Fundamental topics include spatial analysis, geostatistical analysis, 3-D modeling, and project development and implementation. Software fee of $18 applies. Lab access fee of $35 applies.

GEOG 3700 Wetland Studies 3:3:0 Fall
Prerequisite(s): GEOG 1000 OR GEO 1010 OR ENVT 1110 OR BIOL 1010; CHEM 1210 OR Instructor Approval; University Advanced Standing
Examines the structure and function of wetlands with emphasis on wetland biogeochemistry processes, soils, hydrology, flora and fauna, mitigation and restoration, policies and regulations. Explores research methods applied in wetland studies. Provides students with essential skills to critically evaluate wetland issues to make informed decisions. Prepares students to conduct research and communicate scientific information.

GEOG 3705 Wetland Studies Laboratory 1:0:3 Fall
Prerequisite(s): GEO 1010 OR ENVT 1110 OR BIOL 1010 OR CHEM 1210 OR Instructor Approval; and University Advanced Standing
Corequisite(s): GEOG 3700
Designed to be taken in conjunction with GEOG 3700. Applies techniques for sampling and mapping of wetland soils, plants, water, etc. and analyzes chemistry of wetland samples using modern instrumentation to address outstanding scientific questions related to wetlands. Addresses skills to interpret and present scientific data. Normally includes field trips.
Course Descriptions

GEOG 3800 (Cross-listed with: HIST 3800) Environmental History of the United States 3:3:0 On Sufficient Demand
* Prerequisite(s): HIST 3010 or instructor approval; University Advanced Standing
Examines human modification of the American landscape. Surveys the physical geography of the United States, landscape change during Native American to European transition, and causes of agricultural and industrial pollution. Topics include land ethics, processes of environmental degradation, technological remedies, history of federal laws and protection agencies. May include field experiences.

GEOG 4100 Geospatial Field Methods 3:1:4 Fall
* Prerequisite(s): (GEOG 3600 or GIS 3600) and MATH 1060; University Advanced Standing
Provides an introduction to measuring, recording, and finding geographic locations in the field using GPS and other methods widely used in industry and research. Applies GPS and other field techniques to scientific problems, and emphasizes hands-on experience with field equipment. Covers geographic reference frames, and integrates field data with desktop GIS software. Software fee of $18 applies. Lab access fee of $35 applies.

GEOG 482R GIS Internship 1 to 3:1 to 3:0 Fall, Spring, Summer
* Prerequisite(s): (GEOG 3600 and GEOG 3650 or equivalent), department approval, declared major in any Earth Science program, and University Advanced Standing
Engages students in supervised GIS work in a professional setting. Includes maintaining a journal of student experiences and preparing a paper summarizing their experience. A maximum of 3 credit hours may be counted toward graduation. May be graded Credit/No Credit.

GEOG 489R Student Research in Geography 1 to 4:0:3 to 12 Fall, Spring, Summer
* Prerequisite(s): Junior or Senior standing, instructor approval, and University Advanced Standing
Provides the opportunity to conduct research under the mentorship of an Earth Science department faculty member. Includes any combination of literature reviews, original research, and/or participation in ongoing departmental projects. Involves students in the methodology of original geographic research. Requires preparation and presentation of oral and/or written reports, typically presented in a public forum. May be repeated for a maximum of 4 credits toward graduation.

GEOG 490R Special Topics in Geography 1 to 4:1 to 4:0 to 9 Fall, Spring, Summer
* Prerequisite(s): Instructor approval and University Advanced Standing
Explores or examines special topics in geography. Topics vary depending on student demand and current topics of significance in geography. May be repeated for a maximum of 4 credits toward graduation.

Geology (GEO)

GEO 1010 Introduction to Geology 3:3:0 Fall, Spring, Summer
Studies planet earth: its materials, structure, dynamics, and surface features. Taken alone it is designed for non-science students who want a broad introduction to earth science and a greater appreciation of their physical surroundings. Taken in conjunction with laboratory exercises in GEO 1015, the class is sufficiently rigorous to articulate as an introductory geology class.

GEO 1015 Introduction to Geology Laboratory 1:0:2 Fall, Spring, Summer
Designed to be taken in conjunction with GEO 1010. Includes the identification of rocks, minerals, basic land forms and structures. Studies geologic processes occurring in desert, glacial, mountainous and other environments. Taken with GEO 1010, the class will articulate as an introductory earth science class. Course Lab fee of $11 for transportation, lab applies.

GEO 101H Introduction to Geology 3:3:0 Fall, Spring
Studies the structural and dynamic systems of the earth that create our environment. Stresses geology and related topics chosen for astronomy and meteorology. Course Lab fee of $10 for transportation, lab applies.

GEO 1020 (Cross-listed with: BIOL 1200) Prehistoric Life 3:3:0 Spring
* Prerequisite(s): BIOL 1010 or GEO 1010 recommended
Studies prehistoric life. Uses the concepts of biology and physical science. Studies major groups of ancient animals and plants as found in the rock record. Includes aspects and fundamental concepts of biology, ecology, and geology.

GEO 1080 Introduction to Oceanography 3:3:0 Fall, Spring
Introduces the origin and development of the oceans, marine geology and its effect on life in the seas. Discusses waves, tides, currents, and their impact on shorelines, the ocean floor, and basins. Examines physical processes as they relate to oceanographic concepts. Includes media as an alternative to the actual oceanic experience. Completers should have a basic knowledge and appreciation of the ocean's impact to the world's ecology.

GEO 1085 Introduction to Oceanography Laboratory 1:0:2 Fall
A basic laboratory experience in the physical aspects of Oceanography. Introduces applied skills in Oceanography such as Marine Geology and Oceanographic Chemistry. Studies the physical parameters that allow marine life to flourish. Uses maps to study the structure of the sea floor and its relationship to plate tectonics. Provides hands-on experiences with salinity and marine chemistry. Course Lab fee of $10 applies.

GEO 1220 Historical Geology 3:3:0 Fall, Spring
* Prerequisite(s): GEO 1010
Examines the physical and biological evolution of the Earth from its origins 4.6 billion years ago up to present day. Reviews fundamental processes and principles of geology and biology. Develops tools for interpreting rocks and the fossil record. Explores important changes through geologic time, including plate tectonics, paleogeography, mountain building, geochronal cycles, climate, sea level, and the origin and evolution of the great diversity of life on Earth.

GEO 1225 Historical Geology Laboratory 1:0:2 Fall, Spring
* Prerequisite(s): GEO 1100
* Prerequisite(s) or Corequisite(s): GEO 1220
Is designed to be taken in conjunction with GEO 1220. Reviews fundamental processes and principles of geology and biology. Develops skills for identifying main types of minerals, rocks, and fossils. Develops tools for interpreting Earth history through analysis of rocks, fossils, and paleoclimate data. Develops skills for correlating strata and reading geologic maps. Includes field trips to study local outcrops. Course lab fee of $10 applies.

GEO 202R (Cross-listed with: BIOL 202R) Science Excursion 1:0:2 Fall, Spring, Summer
For students interested in the natural world. Explores a wide variety of topics in science, including biology, botany, astronomy, zoology, ecology, and archeology. Consists of a minimum of a four-day field trip. Participants should gain an increased understanding of several fields of scientific study. May be repeated as many times as desired for interest, however a maximum of 3 credits may count toward graduation.

GEO 204R (Cross-listed with: BIOL 204R) Natural History Excursion 3:1:6 On Sufficient Demand
For students interested in the natural world. Promotes an in-depth look at a wide variety of topics in science, including biology, botany, astronomy, zoology, ecology, and archeology. Consists of 15 hours of lecture plus an appropriate field trip. Participants should gain an interdisciplinary understanding of science and nature. May be repeated for up to six credits toward graduation.

GEO 2070 Natural History of the Colorado Plateau 3:1:4 On Sufficient Demand
* Corequisite(s): BIOL 2070
Addresses the geological component of the Natural History Course taught in conjunction with BIOL 2070 at the Capitol Reef Field Station during the summer months. Teaches students about the rocks and strata of the area, the processes that mold the landscape, and the relationships between the physical and biological aspects of the ecosystem, including humans. Provides an intense, hands-on field course where faculty and students participate together in a natural setting. Requires students to live and learn at the field station for most of the course.
### GEO 3000  
**Environmental Geochemistry**  
**3:3:0**  
*Fall*  
*Prerequisite(s):* GEO 1010, (MATH 1050 or MATH 1055), CHEM 1210, University Advanced Standing  
Introduces low temperature, environmental geochemistry with a focus on the use of quantitative measures to understand surficial geologic processes. Includes equilibrium thermodynamics and kinetics of chemical reactions, aqueous solutions, sorption and complexation, oxidation-reduction reactions, and the chemistry of the continental, marine, and atmospheric environments. Incorporates numerous examples to demonstrate how the conceptual framework can be applied in solving practical problems.

### GEO 3070 (Cross-listed with: BIOL 3070)  
**Advanced Desert Natural History**  
**3:1:4**  
*On Sufficient Demand*  
*Prerequisite(s):* University Advanced Standing  
Integrates the geological and biological systems of the southwestern deserts. Includes discussion of the ecology and geology of unique desert ecosystems; the rocks and strata providing the foundation of the landscape; the evolutionary and geological processes that mold the landscape and the species within it over time; and, the relationships between the physical and biological aspects of the ecosystem, including humans. Provides an intense, hands-on field course where faculty and students participate together in daily activities and experimental design in a natural setting. Is held part of the time on the UVU main campus and part of the time at the Capitol Reef Field Station. Requires students to live and learn at the field station for approximately 1/3 of the course.

### GEO 3080  
**Earth Materials**  
**3:3:0**  
*Fall*  
*Prerequisite(s):* GEO 1010, GEO 1015, and University Advanced Standing; CHEM 1210 or other chemistry course recommended  
*Corequisite(s):* GEO 3085  
Investigates the physical characteristics, chemical properties, formation, and distribution of geologically significant igneous and metamorphic rocks and minerals. Develops ability to examine rocks and minerals, and analyze their chemical properties to understand geologic processes. Involves field trips, including the possibility of weekend trips. Course lab fee of $22 for transportation, lab applies.

### GEO 3085  
**Earth Materials Laboratory**  
**1:0:3**  
*Fall*  
*Prerequisite(s):* GEO 1010, GEO 1015, and University Advanced Standing; CHEM 1210 or other chemistry course recommended  
*Corequisite(s):* GEO 3080  
Focuses on identification and classification of common rocks and minerals in hand sample and introduces optical mineralogy and petrography. Investigates the occurrence and formation of common rocks and minerals through direct observation of their properties and occurrence. Involves field trips, including the possibility of weekend trips.

### GEO 3100  
**Isotope Geochemistry**  
**3:3:0**  
*Spring*  
*Prerequisite(s):* GEO 1010, (MATH 1050 or MATH 1055), CHEM 1210 and University Advanced Standing  
Provides an introduction to the principles and applications of isotope geochemistry, which plays an important role in a wide variety of geological, biological, and environmental investigations, and summarizes the analytical techniques used in the field. Examines the theory of radiometric dating and provides an overview of the most commonly used geochronometers. Focuses on stable isotopes with emphasis on oxygen, hydrogen, carbon, nitrogen, and sulfur and with applications in paleoclimatology, ecology and paleoecology, archaeology, and hydrology.

### GEO 3105  
**Isotope Geochemistry Laboratory**  
**1:0:2**  
*Spring*  
*Prerequisite(s):* GEO 1010, (MATH 1050 or MATH 1055), CHEM 1210 and University Advanced Standing  
Explores the analysis and interpretation of real isotope data and provides hands-on experience in their use to solve problems and answer questions in geochronology, paleoclimatology, hydrology, and archaeology. Requires data analysis utilizing Microsoft Excel.

### GEO 3200  
**Geologic Hazards**  
**4:3:3**  
*Fall*  
*Prerequisite(s):* GEO 1010, GEO 1015, and University Advanced Standing  
Investigates the ways in which geologic hazards (including earthquakes, landslides, and volcanoes) impact civilization. Studies the causes of these hazards, how to assess whether each of these hazards is a concern at a particular site, and how each type of hazard can be planned for. Includes field-based exercises. Course Lab fee of $21 applies.

### GEO 3400  
**Forensic Geology**  
**4:3:3**  
*Not Offered*  
*Prerequisite(s):* (CHEM 1210 and CHEM 1215 or higher) and University Advanced Standing  
*Corequisite(s):* CHEM 1220 and CHEM 1225 recommended  
Provides a survey of the uses of geology in solving crime. Emphasizes actual criminal cases, hands-on laboratory activities, and critical observation skills. Covers mineral-forming processes in rock, soil, and sediment, and teaches minerals identification with a hand lens and microscope. Examines some or all of the following: mineral pigments related to art forgery and cosmetics; imitation amber and other gems; environmental pollution; and crimes in archaeology. Serves as an introduction to trace analysis.

### GEO 3500 (Cross-listed with: GEOG 3500)  
**Geomorphology**  
**4:3:3**  
*Spring*  
*Prerequisite(s):* MATH 1050 or MATH 1055 or equivalent, University Advanced Standing, and one of the following lecture and lab pairs: (GEO 1010 and GEO 1015) or (GEOG 1000 and GEOG 1005)  
Examines the geologic processes operating at the Earth’s surface to understand the origin of our planet’s varied landscapes. Explores how landforms respond to climate change, tectonic forcing, and changes in land use. Addresses common geomorphic processes including weathering, soils, hill slope processes, fluvial processes and landforms, aeolian transport, glacial and periglacial environments, karst, and coastal processes. Course Lab fee of $21 applies.

### GEO 3700  
**Structure and Tectonics**  
**4:3:3**  
*Spring*  
*Prerequisite(s):* GEO 1220, GEO 3080, (PHYS 2010 or PHYS 2210), and University Advanced Standing  
Investigates the fundamentals of global plate tectonics and rock deformation. Includes applications to petroleum geology, environmental geology, and engineering geology. Explores geometric techniques of structural analysis in the laboratory. Involves field trips, possibly including weekend trips. Course lab fee of $21 for transportation, lab applies.

### GEO 4080  
**Petrology**  
**4:3:3**  
*Spring Even Year*  
*Prerequisite(s):* GEO 3080, CHEM 1220, and University Advanced Standing  
Intended for students pursuing graduate school in geology or a career in geology such as mining or petroleum geology. Examines mineral equilibrium in igneous, sedimentary, and metamorphic rocks as it pertains to the genesis of these rocks. Introduces students to techniques of petrographic microscopy. Surveys the use of analytical tools in researching igneous and metamorphic rocks, including the use of isotopes for dating and for tracing the origin of magma and the use of the electron microprobe for determining temperatures of metamorphism. Examines the diagenesis of sandstones. Course Lab fee of $21 applies.

### GEO 4200 (Cross-listed with: BIOL 4200, CHEM 4200, PHYS 4200)  
**Teaching Methods in Science**  
**3:2:2**  
*Fall, Spring*  
*Prerequisite(s):* Acceptance into secondary education program, senior-level standing, instructor approval, and University Advanced Standing  
Examines objectives, instructional methods and curriculum for teaching science in the secondary school. Includes developing, adapting, evaluating, and using strategies and materials for teaching biological and physical sciences, appropriate both to the special needs of the learners and the special characteristics of science discipline.
Course Descriptions

GEO 4500 Sedimentary Geology 4:3:3 Spring
* Prerequisite(s): GEO 1220, GEO 1225, GEO 3080, and University Advanced Standing; CHEM 1210 or other chemistry recommended

Explores the origin, classification, and spatiotemporal distribution of sedimentary rocks. Examines the fundamental principles of sedimentology, petrology, and stratigraphy. Reviews weathering processes and soil formation. Develops analytical skills regarding particle size, transportation, and deposition. Develops skills for identifying and classifying sedimentary rocks. Develops tools for describing stratigraphic sections and interpreting the rock record. Develops skills for correlating strata and reading geologic maps. Develops critical thinking and writing skills. Includes field trips to study various outcrops in the state of Utah.

GEO 4510 Paleontology 4:3:2 Fall Odd Year
* Prerequisite(s): GEO 1220, GEO 1225, GEO 3080, (BIOL 1010 or BIOL 1610), and University Advanced Standing; GEO 4500 recommended

Exposes students to a wide variety of topics encompassed within the field of paleontology. Offers substantial knowledge of the major groups of life represented in the fossil record. Discusses the most fundamental concepts in paleontology, such as key principles of evolution and paleoecology. Offers an understanding of what paleontologists do, why the field is so crucial, and why all earth scientists should have at least a basic understanding of paleontology. Requires two weekend field trips (dates will be discussed in class). Course lab fee of $21 for transportation, lab supplies.

GEO 4600 Field Experience 6:3:0 Summer
* Prerequisite(s): GEO 3080, GEO 3700, GEO 4500, and University Advanced Standing

An intensive field course giving students hands-on experience with several aspects of Earth Science field work. Involves 8 to 10 hours of field work per day, for three to five days per week, for four to six weeks. The required capstone experience for Geology majors. Course lab fee of $650 for practical experience applies.

GEO 480R Earth Science Seminar .5:5:0 Fall, Spring
* Prerequisite(s): (GEO 3080 or ENVT 3790 or Instructor Approval) and University Advanced Standing

Exposes students to current research topics in Earth Science and related fields. Provides an opportunity for students to attend bi-weekly lectures presented by department faculty and invited speakers. Lectures are usually a summary of the speaker’s recent research results, or investigative projects in an earth science industry. May be repeated for a maximum of 2 credits toward graduation.

GEO 482R (Cross-listed with: ENVT 482R) Geologic Environmental Internship 1 to 3:1 to 3:0 Fall, Spring, Summer
* Prerequisite(s): GEO 1010 or ENVT 1110; 12 credit hours of any GEO, GEOL, or ENVT courses; declared major in any Earth Science program and University Advanced Standing

Engages students in supervised geologic or environmental work in a professional setting. Requires approval by the Chair of the Department of Earth Science. Includes maintaining a journal of student experiences and preparing a paper summarizing their experience. A maximum of 3 credit hours may be counted toward graduation. May be graded Credit/No Credit.

GEO 489R Student Research 1 to 4:0:3 to 12 Fall, Spring, Summer
* Prerequisite(s): GEO 1015, Junior or Senior standing, instructor approval, and University Advanced Standing

Provides students the opportunity to conduct research under the mentorship of an Earth Science department faculty member. Includes any combination of literature reviews, original research, and/or participation in ongoing departmental projects. Involves students in the methodology of original geologic research. Requires preparation and presentation of oral and/or written reports, typically presented in a public forum. May be repeated for a maximum of 6 credits total toward graduation.

GEO 490R Special Topics in Geology 1 to 4:1 to 4:0 to 9 On Sufficient Demand
* Prerequisite(s): GEO 1010, GEO 1015, Junior or Senior standing, instructor approval, and University Advanced Standing

Explores or examines special topics in geology. Topics vary depending on student demand and current topics of significance in geology. May be repeated for a maximum of 6 credits toward graduation.

GEO 495R Independent Study 1 to 4:0:3 to 12 Fall, Spring, Summer
* Prerequisite(s): GEO 1010, GEO 1015, and University Advanced Standing

Requires an independent study program to be developed with one or more Earth Science faculty member and approved by a committee of Earth Science faculty. Includes some combination of literature review, field work, numerical analysis, and laboratory analysis. Involves the preparation of a written report. An oral presentation may also be required. May be repeated for up to 4 credits.

GEO 525R Advanced Topics for Geology Teachers 1 to 5:1 to 5:0 to 10 On Sufficient Demand
* Prerequisite(s): Departmental Approval

For licensed teachers or teachers seeking to recertify their teaching earth science or integrated science endorsements from the Utah State Office of Education. Teaches principles of geology and pedagogy of teaching geology for teachers in public or private schools. Emphasis will be placed on correlation with the Utah Core Curriculum, the National Science Education Standards, and the Benchmarks of Project 2061. Topics will vary.

**German (GER)**

GER 1010 Beginning German I 4:4:1 Fall, Spring

Provides an introduction to the language and culture of German-speaking countries. Emphasizes listening, speaking, reading, and writing skills along with basic grammar and vocabulary within the cultural context of modern German-speaking societies. Uses an eclectic method of instruction, with extra attention given to oral and written proficiency. Requires weekly lab. Lab access fee of $10 applies.

GER 1020 Beginning German II 4:4:1 Fall, Spring

* Prerequisite(s): Student should have equivalent knowledge of GER 1010

Provides a second-semester introduction to the language and culture of German-speaking countries. Emphasizes listening, speaking, reading, and writing skills along with basic grammar and vocabulary within the cultural context of modern German-speaking societies. Uses an eclectic method of instruction, with extra attention given to oral and written proficiency. Requires weekly lab. Lab access fee of $10 applies.

GER 1110 German Conversation I 4:4:0 On Sufficient Demand

A total immersion course taught in a classroom in a German speaking country. Students live in native, German-speaking homes or other total immersion environments. Practices creative language in conversation to develop proficiency in the German language at the novice level. Includes intensive listening and speaking experience to improve aural-oral proficiency. Students will attend cultural and sporting events. Offered only with the Summer Study Abroad program. May be taken concurrently with GER 2700.

GER 115R German Conversation I 1:1:0 Fall, Spring

* Prerequisite(s): GER 1010

Offers novice German speakers opportunities to enhance their speaking proficiency in the target language by focusing on oral and written production. Teaches how to improve authentic pronunciation, reduce errors in authenticity of language structure, generate thought in the target language spontaneously as a substitute for translation, and sharpen listening comprehension for natural conversational flow. Contrasts with all other first year courses which must strive to produce mastery of the whole range of language acquisition components, including writing, grammar, etc. Facilitates lowering the affective filter when conversing in the target language by increasing the frequency of speech opportunities and defusing concern for such matters as spelling, etc. Increases mastery of lexical items through increased frequency of oral usage. May be repeated for a maximum of 3 credits toward graduation.
GER 2010 Intermediate German I 4:4:1
Fall, Spring
* Prerequisite(s): Students should have equivalent knowledge of GER 1020
Reviews and builds upon the grammar, reading, writing and conversational skills learned in the first year courses. Introduces readings and discussions on the history, culture, and literature of the German speaking world, maintaining a focus on oral proficiency. Lab access fee of $10 applies.

GER 202G Intermediate German II 4:4:0
Fall, Spring
* Prerequisite(s): Students need equivalent knowledge of GER 2010
Studies fourth-semester conversational German that is used in daily settings. Includes culture study, pronunciation, reading, and grammar. Emphasizes conversation in real life situations. Uses field trips and guest lecturers. Prepares students to enter the advanced level of German. Completers should be able to converse enough to visit or work in a German speaking country. Lab access fee of $10 applies.

GER 215R German Conversation II 1:1:0
Fall, Spring
* Prerequisite(s): Students should have equivalent knowledge of GER 1020
Offers lower division / novice German speakers opportunities to enhance their speaking proficiency in the target language by focusing on oral verbal production. Teaches how to improve authentic pronunciation, reduce errors in authenticity of language structure, generate thought in the target language spontaneously as a substitute for translation, sharpen listening comprehension, and develop conversational strategies such as circumlocution and managing a conversation with useful expressions for starting a conversation, gaining time to think, helping the other speaker, seeking agreement, etc. Contrasts with all other first year courses which must strive to produce mastery of the whole range of language acquisition components, including writing, grammar, etc. Facilitates lowering the effective filter when conversing in the target language by increasing the frequency of speech opportunities and defusing concern for such matters as spelling, etc. Increases mastery of lexical items through increased frequency of oral usage. May be repeated for a maximum of 3 credits toward graduation.

GER 2700 Immersion German Civilization and Culture 4:4:0
On Sufficient Demand
A total immersion course of classroom study and experience in a German speaking country. Students will live in native, German-speaking homes or other total immersion environments. Includes classroom study, supervised travel of cultural interest, and attendance at various cultural and sporting events. Includes written response, journals, and examinations. Offered only with the Summer Study Abroad program. May be taken concurrently with GER 1110.

GER 3030 German Composition and Conversation 3:3:0
Fall Odd Year
* Prerequisite(s): (GER 202G or equivalent experience) and University Advanced Standing
Expands knowledge and skill base developed in lower-division courses with an emphasis in idiomatic expression in spoken and written German. Using authentic texts, students will learn to read, speak, and write with more precision and accuracy. Successful completion of this course will prepare students to participate fully in subsequent advanced courses.

GER 3050 Advanced German 3:3:0
Fall, Spring
* Prerequisite(s): It is recommended that students have GER 202G, one-year residency in German speaking country, or instructor approval
Designed for non-native German speakers who have lived in a German speaking country for at least one year. Includes a review of grammar and an introduction to German literature, art, music, and expository writing. Lab access fee of $10 applies.

GER 3200 Business German 3:3:0
Spring
* Prerequisite(s): GER 3050 or equivalent knowledge and University Advanced Standing
For those who plan to pursue careers in international business or related fields, learn the business language for German, understand the German corporate culture, or plan to major or minor in German. Teaches German business terminology and prepares students to take the International German Business Certificate examination. Presents Germany's role in a global economy. Explores how students can effectively do business with German companies within the framework of German culture. Includes current materials dealing with today’s issues. Will be taught entirely in the German language. Lab access fee of $10 applies.

GER 3200 Advanced Business German 3:3:0
Spring Odd Year
* Prerequisite(s): (GER 3200 or equivalent knowledge) and University Advanced Standing
For those planning to pursue the Bachelor of Science with an emphasis in International Business or related field. Traces in depth German business terminology, documentation, case studies and transactions. Reviews and builds upon the business terminology learned in GER 3200. Prepares students to take the examination for the International Certificate of Business German (Pruefung Wirtschaftsdeutsch). Explores how students can effectively do business with German companies within the framework of German culture. Includes current materials dealing with today’s issues. Taught entirely in German.

GER 4410 History of the German Language 3:3:0
Spring Odd Year
* Prerequisite(s): GER 3050 and University Advanced Standing
Explores the history of the German language from its Indo-European roots to its present form today. Investigates the differences between the major families of Germanic languages and looks at examples of these languages in the literary record, with a focus on the direct predecessors of modern German, especially Old High German, Middle High German, and Early New High German. Introduces historical linguistics to understand the processes of change in terms of morphology, phonology, and syntax, and basic phonetics.

Geographic Information Systems (GIS)

GIS 1600 Principles of Geographical Information Science 3:3:0
Summer
Introduces strategies for integrating GIS to support instruction and learning on any topic of spatial data. Discusses concepts of basic GIS activities that enhance student learning and critical thinking. Teaches skills to visualize global, regional and local data and establish connections to those disciplines. Explains design standards and processes for investigating a problem and preparing a GIS map. Introduces ArcGIS Online to increase GIS applicability to the workplace.

GIS 2640 Fundamentals of Geographic Information Systems 3:3:0
On Sufficient Demand
Introduces the concepts and components of a Geographic Information System (GIS). Includes the essential skills of operating a functional GIS through the use of ArcGIS 10.x software. Explains the operational processes of spatial data acquisition, editing, file geodatabase design, spatial query and display, spatial analysis, map layout and various visualizations, preliminary application development, and project applications. Describes various GIS data sources. Lab access fee of $45 for computers applies.
Course Descriptions

GIS 3600 (Cross-listed with: GEOG 3600)  
Introduction to Geographic Information Systems  
4:3:3  
Fall, Spring  
* Prerequisite(s): [Completion of a course that meets the PP (Physical Science) or SS (Social Science) general education requirement is recommended] and University Advanced Standing  
Introduces the history, theory, and operation of Geographic Information Systems (GIS). Includes an introduction to GIS data sources, database design, data input, spatial analysis, and map production. Offers valuable preparation for careers in geology, geography, geographic information systems, geomatics, planning, surveying, marketing, environmental technology, biology, engineering, and other related fields. Software fee of $18 applies. Lab access fee of $35 for computers applies.

GIS 3620  
Advanced Geographic Information Systems  
3:3:0  
Spring  
* Prerequisite(s): GIS 3600 or GIS 3600) and University Advanced Standing  
Prepares students to use and design Geographic Information Systems. Focuses on maps as tools and communication media, and includes an introduction to software. Includes an analysis of regional and global interrelationships of land, water, and other resources. Explores the role of Geographic Information Systems in society. Software fee of $18 applies. Lab access fee of $45 for computers applies.

GIS 3630  
Geographic Information Systems Application Development  
3:3:0  
Summer  
* Prerequisite(s): GIS 3600 or GEOG 3600, GIS 3620 or GEOG 3650, and University Advanced Standing  
Develops customization skills for geospatial data, modeling, and automation. Introduces and defines basic Python concepts and scripting environments for the most common GIS software. Delineates common scripting errors and applies Python syntax rules when writing scripts. Lab access fee of $45 for computers applies.

GIS 3640  
Thematic Mapping Environmental Impacts  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): GIS 2640 and University Advanced Standing  
Introduces the history, theory, and operation of Geographic Information Systems (GIS). Includes an introduction to GIS data sources, database design, data input, spatial analysis, and map production. Offers valuable preparation for careers in geology, geography, geographic information systems, geomatics, planning, surveying, marketing, environmental technology, biology, engineering, and other related fields. Software fee of $18 applies. Lab access fee of $35 for computers applies.

GIS 3650  
Thematic Mapping Culture and Societies  
3:3:0  
Fall, Spring  
* Prerequisite(s): GIS 2640 and University Advanced Standing  
Focius on thematic maps of human activity covering the major cultural regions of the world considering cultural, political, and economic environments. Presents various ways to cartographically depict sociological data such as: population, religion, language, migration, and industries, etc.. Involves producing a thematic global and regional mapping project(s) as presented in this course. Lab access fee of $45 for computers applies.

Greek (GRK)  
GRK 1010  
Beginning Ancient Greek I  
4:4:0  
Fall  
* Prerequisite(s): ENGL 1010 or ENGH 1005  
Studies Ancient Greek language at the introductory level, focusing primarily on Attic Greek. Centers on grammar and textbook exercises with some analysis of literary and/or philosophical selections in Ancient Greek. Relates particularly to students interested in studying Ancient Greek culture and thought.

GRK 1020  
Beginning Ancient Greek II  
4:4:0  
Spring  
* Prerequisite(s): GRK 1010  
Continues study of the Ancient Greek language at the introductory level, focusing primarily on Attic Greek. Centers on grammar and textbook exercises with some analysis of literary and/or philosophical selections in Ancient Greek. Relates particularly to students interested in studying Ancient Greek culture and thought.

HIST 1500  
World History to 1500  
3:3:0  
Fall, Spring, Summer  
Serves as an introduction to pre-modern world civilization. Surveys cultural, economic, intellectual, and social history up to the year 1500, with special attention to the rise of world religions.

HIST 151G  
World History from 1500 to the Present  
3:3:0  
Fall, Spring, Summer  
Serves as an introduction to modern world civilization. Surveys cultural, economic, intellectual and social developments from 1500 to the present. Emphasizes global, comparative, and intercultural issues.

HIST 1700  
American Civilization  
3:3:0  
Fall, Spring, Summer  
Stresses movements and developing institutions that are important for an appreciation of American History from the Pre-Columbian period to the present. Discussions include analysis of developing political, economic, and social institutions and their interrelationships with, and impact upon, the geographical features of the land. Includes book reports, oral response, research papers, media presentations and applications to current events.

HIST 170H  
American Civilization  
3:3:0  
Spring  
Stresses movements and developing institutions that are important for an appreciation of American History from the Pre-Columbian period to the present. Discussions include analysis of developing political, economic, and social institutions and their interrelationships with, and impact upon, the geographical features of the land. The honors section extends the course’s historical inquiry with additional written and reading requirements which will allow the student a fuller participation in historical debate and the process of “doing” history.

HIST 1740  
US Economic History  
3:3:0  
Fall, Spring  
Studies economic development in America, with emphasis on resources, commerce, agriculture, capital, manufacturing, government, and labor organizations.

HIST 204G  
Colonial Latin America  
3:3:0  
Fall  
Introduces the history of Latin America from the earliest New World inhabitants through the nineteenth-century Latin American Wars for Independence. Analyzes the social, political, economic, and cultural developments of Latin America. Explores the complex dynamics that shaped pre-Columbian and colonial societies which culminated in early nineteenth-century independence movements.
HIST 205G
Modern Latin America
3:3:0
Spring
Introduces the history of Latin America from 1820 to the present. Focuses on the key issues and themes of the last 190 years including social revolution, dependency and foreign intervention, gender and race. Includes case studies from specific countries.

HIST 2700
US History to 1877
3:3:0
Fall, Spring, Summer
Surveys the origins of the United States from the Pre-Columbian era and early colonization through Reconstruction. Focuses on encounters among indigenous, African and European peoples; gender, race, and Atlantic slavery; the causes and consequences of the American Revolution; the westward expansion of the United States; and the sectional crisis that lead to the American Civil War.

HIST 270H
US History to 1877
3:3:0
On Sufficient Demand
Examines the first half of the American experience, beginning with the Paleo-Indian cultures through Post-Civil War Reconstruction. Surveys social, political, cultural, and diplomatic developments throughout this period.

HIST 2710
US History since 1877
3:3:0
Fall, Spring, Summer
Surveys the making of a modern United States, beginning with the promises and failures of Reconstruction and concluding with contemporary American issues. Emphasizes diverse American experiences at the intersections of race, gender, and class while tracing social, cultural, political and diplomatic developments during this period.

HIST 271H
US History since 1877
3:3:0
On Sufficient Demand
Examines the second half of the American experience, beginning with the collapse of Post-Civil War Reconstruction and concluding with contemporary American issues. Surveys social, political, cultural, and diplomatic developments during this period. The honors section extends the course's historical inquiry with in-depth discussions and additional written and reading requirements, all of which allow the student a fuller participation in historical debates and the process of "doing" history.

HIST 290R
Independent Study
1 to 4:1 to 4:0
On Sufficient Demand
* Prerequisite(s): Dean and/or Department Chair approval
Provides independent study for students unable to secure a desired class within regular semester curriculum offering. With approval of dean and/or department chair, student and instructor design and complete readings and other projects at the lower-division level. Maximum of 6 credits may be applied toward graduation.

HIST 3010
The Historians Craft
3:3:0
Fall, Spring
* Prerequisite(s): HIST 1500, HIST 151G, HIST 2700, and HIST 2710 and University Advanced Standing
Foundational course builds upon information and library literacy skills, primary and secondary sources research, analysis, and writing skills introduced in lower division courses to prepare students for Junior/Senior level coursework. Teaches the craft of History, develop and hone skills in the areas of historical methodology, historiography, and theory, formulate interpretations based on evidence, and present their findings in accordance with professional standards. Prerequisite for all 3000 and 4000 level History courses.

HIST 3020
Public and Digital History
3:3:0
Fall
* Prerequisite(s): HIST 3010 or Instructor Approval; University Advanced Standing
Introduces the disciplines of public history and digital history, including methodology and literature. Exposes students to the major fields in public history, and identifies career opportunities. Covers the tools of public history, such as archives, special collections, oral histories, photographs, documents, journals, museum exhibitions. Emphasizes new digital techniques for collection, preservation, and presentation of primary sources. Sources skills such as analyzing, interpreting, and communicating historical data for the public and by digital means. Discusses the professional and ethical dimensions of public history.

HIST 3030
Introduction to African History
3:3:0
Fall
* Prerequisite(s): HIST 3010 or instructor approval; University Advanced Standing
Surveys African history since the sixteenth century: traditional societies, the slave trade, European colonialism, the struggle for independence, underdevelopment, and the challenge of globalization.

HIST 3100
Greek History
3:3:0
Fall
* Prerequisite(s): HIST 3010 or instructor approval; University Advanced Standing
Explores historical and geographical context of Greece from 1600 B.C.E. to the Roman conquest in 30 B.C.E. spanning Minoan, Mycenaean, Hellenic, and Hellenistic ages. Examines the development of social/cultural, political, and economic institutions emphasizing their influence on Western civilization and our own cultural context.

HIST 3110
Roman Republic
3:3:0
On Sufficient Demand
* Prerequisite(s): HIST 3010 or instructor approval; University Advanced Standing
Covers the development of Rome and Italy from prehistory through the end of the Republic in first century B.C. Surveys social, cultural, political, economic and military aspects of Republican Rome. Examines the influence of Rome on Western Civilization. Part of a two semester sequence on Roman history. Each semester may be taken independently.

HIST 3140
Roman Empire
3:3:0
Spring
* Prerequisite(s): HIST 3010 or instructor approval; University Advanced Standing.
Covers Roman history from the first century B.C. to the fourth century A.D. Surveys social, cultural, political, economic and military aspects of the Roman Empire. Examines the influence of Imperial Rome on Western Civilization. Part of a two semester sequence on Roman history. Each semester may be taken independently.

HIST 3150
Medieval Europe
3:3:0
On Sufficient Demand
* Prerequisite(s): HIST 3010 or instructor approval; University Advanced Standing
Introduces the history of Europe from the collapse of Greco-Roman civilization to the fifteenth century. Covers the rise of Western Christendom, the challenge of Islam, the twelfth-century renaissance, the flowering of medieval art, education and literature, feudalism and rural economies, the commercial revolution, human and ecological calamities. Considers the medieval foundations of modern European culture, politics, and society.

HIST 3160
Renaissance and Reformation Europe 1350 to 1600
3:3:0
On Sufficient Demand
* Prerequisite(s): HIST 3010 or instructor approval; University Advanced Standing
Explores European history from the rise of modern Humanism, in the fourteenth century, to the religious conflicts of the sixteenth century. Studies the Italian Renaissance, the spread of Italian cultural influence throughout Europe, the European discovery of the Americas and voyages around the globe, the Protestant Reformation and Catholic Counter Reformation, and the social and economic transformations of the early modern period.

HIST 3170
Absolutism Enlightenment and Revolution Europe from 1600 to 1815
3:3:0
Spring
* Prerequisite(s): HIST 3010 or instructor approval; University Advanced Standing
Explores the major political, social and intellectual developments in European history from the Age of Absolutism to the French Revolution.
HIST 3180  
Nineteenth Century Europe  
3:3:0  Spring  
* Prerequisite(s): HIST 3010 or instructor approval; University Advanced Standing  
Analyzes transformations in political, economic, and social ideologies of Europe in the 19th century. Studies primary documents on a variety of ideologies. Includes active class participation and discussion, and much writing in areas agreed upon between instructor and student.

HIST 3190  
Twentieth Century Europe  
3:3:0  On Sufficient Demand  
* Prerequisite(s): HIST 3010 or instructor approval; University Advanced Standing  
Surveys major forces, events and experiences that have shaped Europe and defined its place in the contemporary world. Examines industrialization, nationalism, colonial empires, world wars, Cold War polarization, and European Union.

HIST 320G  
Women in American History to 1870  
3:3:0  On Sufficient Demand  
* Prerequisite(s): HIST 3010 or instructor approval; University Advanced Standing  
Surveys women's experiences in America from the pre-Columbian era to 1870. Emphasizes ways in which race, ethnicity, and class shaped females' experiences.

HIST 320R  
Issues and Topics in Global History  
3:3:0  On Sufficient Demand  
* Prerequisite(s): HIST 3010 or instructor approval; University Advanced Standing  
Surveys specific global issues or topics at the Junior/3000-level. May be repeated for a maximum of 6 credits toward graduation.

HIST 321G  
Women in American History since 1870  
3:3:0  Spring  
* Prerequisite(s): HIST 3010 or instructor approval; University Advanced Standing  
Surveys women's experiences in American culture from 1870 to the present. Emphasizes ways in which race, ethnicity, and class shaped women's experiences.

HIST 322G  
History of the American West to 1850  
3:3:0  Fall  
* Prerequisite(s): HIST 3010 or instructor approval; University Advanced Standing  
Surveys the development of the American West from the pre-Columbian era to 1850 that places the West in both a national and North American context. Includes topics such as pre-contact cultures, Indian-European relations, exploration, colonization, conquest, territorial expansion, resource exploitation, as well as an examination of economic, political, social, and cultural developments that created a distinct regional identity.

HIST 323G  
History of the American West since 1850  
3:3:0  Spring  
* Prerequisite(s): HIST 3010 or instructor approval; University Advanced Standing  
Surveys the development of the American West from 1850 to the present. Emphasizes key issues such as cultural encounters in the West, economic development, urban growth, rural life, the politics of race, ethnicity, class and gender, environmental change, the role of the federal government, and the cultural symbolism of the American West.

HIST 3260  
History of Utah  
3:3:0  Fall, Spring, Summer  
* Prerequisite(s): HIST 3010 or instructor approval; University Advanced Standing  
Surveys the history of Utah and its peoples from prehistoric times to the present, covering cultural, social, economic, political, and religious topics, and places it within regional and national contexts. Can be used for teacher education and recertification requirements.

HIST 330G  
Mediterranean World 1500-1800  
3:3:0  Fall  
* Prerequisite(s): HIST 3010 or instructor approval and University Advanced Standing  
Examines religious, political, and social life of the Mediterranean Basin from 1500 to 1800. Focuses on the shared traditions, rituals, and cultural practices of Christians, Jews, and Muslims of the Mediterranean Basin. Analyzes the legacy and influence of this period of Mediterranean History on today’s world.

HIST 3320  
Modern Britain  
3:3:0  Summer  
* Prerequisite(s): HIST 3010 or instructor approval; University Advanced Standing  
Surveys major themes in British history from the Glorious Revolution to the end of the 20th century.

HIST 3340  
The French Revolution and Napoleon  
3:3:0  Fall  
* Prerequisite(s): HIST 3010 or instructor approval; University Advanced Standing  
Examines important people, events, and ideas of the French Revolution and Napoleonic era. Explores the causes of the French Revolution; the political, social, and cultural changes it brought about; Napoleon’s rise to power and rule; and legacies of the era. Analyzes the development of nationalism and notions of rights. Investigates revolutionary debates over slavery and citizenship. Focuses on global dimensions of the French Revolution and Napoleonic era.

HIST 3440  
The History of World War I  
3:3:0  On Sufficient Demand  
* Prerequisite(s): HIST 3010 or instructor approval; University Advanced Standing  
Explores the numerous factors leading to, sustaining, and concluding World War I, including military developments, diplomacy, and political and economic rivalries. Discusses various battles and campaigns of the conflict, the experience of the average soldier, the crumbling of old governments, and the beginnings of modern genocide.

HIST 345G  
The History of World War II  
3:3:0  On Sufficient Demand  
* Prerequisite(s): HIST 3010 or instructor approval; University Advanced Standing  
Deals with background and cases, course, conduct, and consequences of World War II in Europe and Asia, with special attention to strategy, tactics, diplomacy, and politics.

HIST 3540  
History of South Africa  
3:3:0  Summer  
* Prerequisite(s): HIST 3010 or instructor approval; University Advanced Standing  
Explores the history of South Africa from first peoples to the present, with special attention to twentieth-century developments. Topics include Khoisan and Bantu societies, Dutch settlement at the Cape of Good Hope, British colonization, the Zulu kingdom, the Great Trek, British-Boer conflict, the mining economy, Union, segregation and Apartheid, and the struggle for non-racial democracy. For history and integrated studies majors, and other students interested in world history.

HIST 3650  
Imperial Russia--Autocracy to Opposition 1696-1917  
3:3:0  On Sufficient Demand  
* Prerequisite(s): HIST 3010 or instructor approval; University Advanced Standing  
Presents the evolution of Russian economics, politics, and society between c. 1696 and 1917. Focuses on such movements and events as the Enlightenment in Russia, constitutionalism, bureaucratization, industrialization, and revolutions.

HIST 366G  
The History of Modern Russia--1864 to Present  
3:3:0  On Sufficient Demand  
* Prerequisite(s): HIST 3010 or instructor approval; University Advanced Standing  
Surveys the history of Imperial Russia, the Soviet Union, and Russia from 1864 to the present, with special attention to Russia’s politics, economics, and society.

HIST 367G (Cross-listed with: RUS 367G)  
History of Russian Film  
3:2:2  Spring Even Year  
* Prerequisite(s): (ENGL 1010 or ENGH 1005) and University Advanced Standing  
Studies Russian cinema within the historical, cultural, thematic, and aesthetic context.
HIST 371R
Issues and Topics in American History
3:3:0  On Sufficient Demand
* Prerequisite(s): HIST 3010 or instructor approval; University Advanced Standing
Surveys specific American history issues or topics at the Junior/5000-level. May be repeated for a maximum of 6 credits toward graduation.

HIST 3730
American Origins to 1790
3:3:0  On Sufficient Demand
* Prerequisite(s): HIST 3010 or instructor approval; University Advanced Standing
Surveys the origins of the United States from the Pre-Columbian era and early colonization through the Early Republic. Focuses on adaptation and transformations of Native, African and European peoples; the causes and consequences of the American Revolution; the US Constitution, and the search for a national identity.

HIST 3731
US. History-Early Republic through the Progressive Era
3:3:0  On Sufficient Demand
* Prerequisite(s): HIST 3010 or instructor approval; University Advanced Standing
Surveys United States history thematically and focuses upon social, cultural, economic, and political movements. Includes topics such as the New Republic, slavery, westward expansion, sectionalism, the Civil War and its aftermath, immigration, reform, and the development of modern culture.

HIST 3732
U.S. History-Progressive Era to the 21st Century
3:3:0  Fall
* Prerequisite(s): HIST 3010 or instructor approval; University Advanced Standing
Surveys social, cultural, political, and economic movements and turning points in the U.S. from Progressivism through the 21st century. Builds an inclusive, multicultural narrative for various topics including reform and radical movements, wartime crucibles, the U.S. and the world, inclusion and exclusion in U.S. history, and the construction of a present-day U.S.

HIST 3740
American Revolution
3:3:0  On Sufficient Demand
* Prerequisite(s): HIST 3010 or instructor approval; University Advanced Standing

HIST 3745
Civil War and Reconstruction
3:3:0  On Sufficient Demand
* Prerequisite(s): HIST 3010 or instructor approval; University Advanced Standing
Describes forces at work in the antebellum period that led to sectionalism and eventually to civil war. Examines military, political, social, economic, and racial issues before, during, and after the war. Analyzes the painful period of Reconstruction and its historiography.

HIST 3800 (Cross-listed with: GEOG 3800)
Environmental History of the United States
3:3:0  On Sufficient Demand
* Prerequisite(s): HIST 3010 or instructor approval; University Advanced Standing
Examines human modification of the American landscape. Surveys the physical geography of the United States, landscape change during Native American to European transition, and causes of agricultural and industrial pollution. Topics include land ethics, processes of environmental degradation, technological remedies, history of federal laws and protection agencies. May include field experiences.

HIST 382G
Indians of Eastern North America
3:3:0  On Sufficient Demand
* Prerequisite(s): Sophomore Standing and University Advanced Standing
Surveys the histories of native communities of Eastern North America from the pre-Columbian period to the present. Includes the diversity of cultures in this region; encounters in the colonial period with France, England, and Spain, and the geopolitics of Native-White relations; the role of native communities in the American Revolution; resistance movements and leaders, such as Tecumseh; Indian Removal; the role of native communities in the Civil War; land loss in the 19th and 20th centuries; cultural survival; and modern economic development.

HIST 384G
Indians of the Southwest
3:3:0  On Sufficient Demand
* Prerequisite(s): HIST 3010 or instructor approval; University Advanced Standing
Surveys the cultural geography and social institutions of cultures of Indians of the American Southwest and their antecedents. Examines the similarities and differences among Southwestern Indian cultures and between Indian cultures and other social groups in the United States. Focuses on historic and contemporary relations among Indian cultures and between Indian cultures and the United States federal and state governments.

HIST 4130
Anti-Semitism and the Holocaust
3:3:0  On Sufficient Demand
* Prerequisite(s): HIST 3010 or instructor approval; University Advanced Standing
Examines human modification of the American landscape. Surveys the physical geography of the United States, landscape change during Native American to European transition, and causes of agricultural and industrial pollution. Topics include land ethics, processes of environmental degradation, technological remedies, history of federal laws and protection agencies. May include field experiences.

HIST 4140
Genocide in the Twentieth Century
3:3:0  On Sufficient Demand
* Prerequisite(s): HIST 3010 or instructor approval; University Advanced Standing
Examines human modification of the American landscape. Surveys the physical geography of the United States, landscape change during Native American to European transition, and causes of agricultural and industrial pollution. Topics include land ethics, processes of environmental degradation, technological remedies, history of federal laws and protection agencies. May include field experiences.

HIST 4250
Teaching History in the Secondary Curriculum
3:3:0  Fall, Spring
* Prerequisite(s): Admission to Professional Education Program, (EDSC 4550 or instructor approval), and University Advanced Standing
For students majoring in secondary education. Examines teaching methodology as related to teaching history and learning teaching strategies to prepare students for secondary education certification. Utilizes various group projects, classroom exercises, and an actual teaching project at the end of the semester. Evaluated by participation, teacher evaluation, written evaluation, exams, personal journal, and a final teaching project.

HIST 430G
Violence and Social Conflict in Latin America
3:3:0  On Sufficient Demand
* Prerequisite(s): HIST 3010 or instructor approval; University Advanced Standing
Examines impact of violence and social conflict in Latin American society. Covers from Ancient Native American cultures to the present.
HIST 4320  History of Scientific Thought 3:3:0 Fall
* Prerequisite(s): University Advanced Standing
Explores development of Western scientific context from 6th century B.C. Greece to modern times. Emphasizes how our understanding of nature is influenced by a scientific approach. Examines technological impact of science on our lives.

HIST 4330  Machines in the Making of History 3:3:0 SS On Sufficient Demand
* Prerequisite(s): HIST 3010 or instructor approval; University Advanced Standing
Surveys the development of modern technology with special reference to the Industrial Revolution of the nineteenth century and the Information Revolution of the twentieth. Examines weekly case studies focused on major innovations which have helped shape the modern world. Fosters appreciation of the interaction with technology change as a historical phenomenon.

HIST 435R  Issues and Topics in the History of Science 3:3:0 Spring
* Prerequisite(s): HIST 3010 or instructor approval; University Advanced Standing
Surveys a specific topic in the History of Science. Topic varies each semester. May be repeated once for credit as long as course topic is substantially different than previous class.

HIST 461G  Peoples of the Atlantic World 1450-1800 3:3:0 Spring
* Prerequisite(s): HIST 3010 or instructor approval; University Advanced Standing
Offers an introduction to the main themes and issues of the early Atlantic world and the field of Atlantic History, from the angle of intercultural relations and social/political productions. Examines in depth the encounters, exchanges, and clashes between Africans, Europeans, and Native Americans through the life experiences of the peoples who lived "between cultures," such as interpreters, mariners, missionaries, creoles, etc. Encourages reflection about the modern legacies of the colonial period and issues of multiculturalism and post-colonialism.

HIST 463G  Missions and Conversion in Early North America 3:3:0 Not Offered
* Prerequisite(s): (HIST 2700 or HIST 3730) and (ENGL 2010 with a grade of C+ or higher, or instructor approval) and University Advanced Standing
Examines in a comparative perspective various European religious missionary enterprises in North America and their reception among Indians from the seventeenth century through the antebellum period. Surveys the origins, doctrines, methods, and changes over time of the Jesuit, Franciscan, Moravian, Puritan, and other Protestant missions, emphasizing the international and multicultural aspects of the missionary landscape in early America.Addresses the ways in which various Native American groups and individuals responded to these European missionary efforts.

HIST 466G  Legacies and Reckonings in the American West 3:3:0 On Sufficient Demand
* Prerequisite(s): HIST 3010 or instructor approval; University Advanced Standing
Interdisciplinary survey of key theories and issues in the American West. Examines the diverse experiences of peoples and cultures in the West, the cultural symbolism of the American West, different cultures’ interactions/relationships with the environment, and the role of myth in the formulation of regional identity.

HIST 471R  Special Issues and Topics in American History 3:3:0 On Sufficient Demand
* Prerequisite(s): HIST 3010 or instructor approval; University Advanced Standing
Surveys a specific topic in American History. Topic varies each semester. May be repeated once for credit as long as course topic is substantially different than previous class.

HIST 482R  Public History Internship 2 to 9:2 to 9:0 On Sufficient Demand
* Prerequisite(s): HIST 3010 or instructor approval and University Advanced Standing
Provides opportunities for internship experience in public history organizations, including, but not limited to, museums, archives, manuscript collections, federal, state, local, and private historical sites, and governmental and non-governmental history organizations. May be repeated for a maximum of 9 credits toward graduation. May be graded credit/no credit.

HIST 490R  Independent Study 1 to 4:1 to 4:0 On Sufficient Demand
* Prerequisite(s): HIST 3010 or instructor approval; University Advanced Standing
Provides independent study for students unable to secure a desired class within regular semester curriculum offering. With approval of dean and/or department chair, student and instructor design and complete readings and other projects at the upper-division level. A maximum of six credits may be applied toward graduation.

HIST 491R  Directed Readings 2 to 4:2 to 4:0 On Sufficient Demand
* Prerequisite(s): HIST 3010 and instructor approval; University Advanced Standing
Allows students to work intensively with faculty to deeply explore specific topics that are not normally offered in the two-year cycle of the History Program. May be repeated for a maximum of 4 credits toward graduation.

HIST 4980  Senior Research Thesis Research Component 3:3:0 Fall
* Prerequisite(s): HIST 4980 and Senior Standing in History and University Advanced Standing
First half of the required capstone experience for Majors. Requires students to work with a faculty member in a directed and extensive research and writing project. Topics vary according to thesis director. Honors students should consult Honors Program for thesis options.

HIST 4990  Senior Research Thesis Writing Component 3:3:0 Spring
* Prerequisite(s): HIST 4980 and Senior Standing in History and University Advanced Standing
Second half of the required capstone experience for History Majors. Student continues to work on and complete the extensive research, analysis, and writing project developed in Hist 4980 under faculty direction. Honors students should consult Honors Program for thesis options.

Community Health (HLTH)

HLTH 1100  Personal Health and Wellness 2:2:0 Fall, Spring, Summer
Examines the challenges to individual and community health, and encourages students to become actively engaged in preserving, protecting, and promoting health at all levels. Develops a greater appreciation for bodies and understanding of requirements to maintain or achieve good physical, mental, emotional, social, and spiritual health. Includes lecture, discussion groups, guest lecturers, media, and role-playing.

HLTH 1200  First Aid 3:3:0 Fall, Spring
Provides first aid and emergency care training as well as instruction with Automated External Defibrillators. Structured to meet National Safety Council First Aid requirements with successful completers being certified in First Aid and CPR. Includes lectures, hands-on experience with mannequins, audiovisuals, discussions, and field trips.

HLTH 1300  Medical Terminology I 2:2:0 Fall, Spring, Summer
Helps students read and understand the language of medical terminology. Stresses terminology usage and accuracy. Studies elements, abbreviations, spelling, pronunciation, and logic of medical terminology. Includes lectures and audiovisual presentations. Canvas Course Mats $82/Pearson applies.

HLTH 2000  Body Image Self-Esteem and Weight Management 3:3:0 Fall, Spring
Provides students with the information and tools necessary to understand and manage eating habits, body size, and self-esteem concerns in a healthy way.
HLTH 2200
Introduction to Health Professions
2:2:0 Fall, Spring
For students planning to major in a health related field. Examines the historical and continuing evolution of health care. Explores work description, environment, employment opportunities, education, expectations, legal requirements, and expected earnings of each covered health profession. Focuses on, but not limited to medicine, dentistry, nursing, community health, optometry, respiratory care, dental hygiene, physical therapy, and social work.

HLTH 2400
Concepts of Stress Management
3:3:0 Fall, Spring, Summer
For those interested in developing skills and techniques necessary to work with clients in stress reduction programs. Includes identifying, managing, and eliminating stress in individuals, families, and communities. Examines effects of stress on the immune, endocrine, and nervous systems and the relationship to disease. Teaches stress reduction application and methods in wellness and health care settings.

HLTH 2510
Media and Computer Applications in Health
3:3:0 Not Offered
Introduces students to computer-based methods for accessing, analyzing, and communicating health-related information. Explores the relationship between mass media and health promotion and the key elements in the development of successful health communication campaigns.

HLTH 2600
Drugs Behavior and Society
3:3:0 Fall, Spring, Summer
For students interested in drug abuse prevention. Studies substance mis-use and abuse. Discusses addictive behaviors, dependence, and treatment modalities. Examines common substances of abuse and dependence and effects upon individuals and society. Investigates the use of psychotherapeutic drugs in the treatment of mental illness. Promotes awareness of personal and social decisions concerning drugs, behaviors, and habits.

HLTH 2800 (Cross-listed with: PSY 2800) Human Sexuality
3:3:0 Fall, Spring, Summer
* Prerequisite(s): ENGL 1010 or ENGH 1005
Interdisciplinary course in human sexuality, exploring topics in biology, health, psychology, and sociology. Introduces basic concepts of human sexuality, including anatomy, reproduction, and sexual response across the life-cycle. Studies gender roles, sexual orientation, dysfunction, and sexually transmitted disease. Examines sexual behavior from the perspective of ethics, religion, the law, and education. Students assess their sexual attitudes and should be able to make responsible sexuality decisions.

HLTH 2900
Health Education for Elementary Teachers
2:2:0 Fall, Spring
For Elementary Education majors. Emphasizes the role of the teacher as a health educator and team member in providing a healthy school environment. Studies the basic Utah health core curriculum. Develops learning activities applicable to the health needs of the elementary school student.

HLTH 3000
Health Concepts of Death and Dying
3:3:0 Spring
* Prerequisite(s): University Advanced Standing
Examines information and data pertaining to death in the United States. Discusses historical and cultural perspectives of death, causes of death, definitions of death, stages of dying, bereavement, the will to live, legal and ethical issues, euthanasia, and suicide. Focuses on attitudes and values of Americans concerning death. Studies ways to work with and relate to dying individuals and their families. Will also be offered summer of odd years.

HLTH 3150
Culture Ecology and Health
3:3:0 On Sufficient Demand
* Prerequisite(s): ENGL 2010 with a grade C+ or higher, ANTH 101G, and University Advanced Standing
Examines reciprocal roles of culture, environment, and disease in human health. Covers nutrition, stress, and traditional non-Western treatments. Explores cultures' use of their own global medicine to sustain health and welfare.

HLTH 3160
Health Care Law
3:3:0 Spring
* Prerequisite(s): University Advanced Standing
Explores impact of laws, regulations, social policies on management and delivery of health care. Includes provider liability, managed health care contracts, HIV-related concerns, assisted suicide, and other issues.

HLTH 3200
Principles of Community Health
3:3:0 Fall, Spring, Summer
* Prerequisite(s): University Advanced Standing
For students in various health care professions. Reviews important dimensions of a woman's health and examines the contributing epidemiological, historical, psychosocial, cultural/ethnic, legal, political, and economic influences. Focuses on women throughout their lifespan and incorporates the many factors that affect health and well-being. Stresses prevention, health promotion, research, clinical intervention, and public policy that form the interlocking basis when considering the different diseases, disorders, and conditions that affict women. Provides a practical approach to examining and understanding health issues that are unique to women--all ages, races, socioeconomic strata, and cultures. Will also be offered summers of even years.

HLTH 3260
Theory-Based Approaches to Modifying Health Behavior
3:3:0 Fall, Spring, Summer
* Prerequisite(s): HLTH 3200, University Advanced Standing, and matriculation into BS Community Health, BS School Health Education, BS Nursing, or BS Dental Hygiene
For students interested in community and school health programs. Investigates holistic health and behavioral changes that can positively influence total human well-being. Discusses factors that impact personal health behavior. Focuses on behavioral change models and theories including planning, implementation and evaluation. Examines health counseling approaches, group process, and strategies related to specific health problems.
**HLTH 3300**  
Health Promotion for Older Adults  
3:3:0  
Fall, Spring  
* Prerequisite(s): University Advanced Standing

For students in health and behavioral sciences and other related fields who wish to work in gerontological settings. Examines health issues and problems of older adults. Addresses topics affecting older adults including: the aging process, chronic and infectious diseases, health care resources, and health promotion. Covers medication issues, long-term care, death and dying, and other related topics.

**HLTH 3400**  
Human Diseases  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): ZOOL 1090 and University Advanced Standing

For students interested in a Community Health option within the Integrated Studies Degree. Also for students interested or working in health care fields such as nursing, dental hygiene, etc. Introduces the study of human disease including general principles of disease and major diseases of body systems and organs. Applies genetic, behavioral and environmental issues to the study of human diseases.

**HLTH 3450**  
Public Health and the Environment  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): HLTH 3200, University Advanced Standing

Examines the relationship of people to their environment as well as public health environmental issues. Develops an understanding of the causes of those issues, and possible future approaches to control major environmental public health problems. Includes environmental epidemiology, public health policy and regulation, zoonotic and vector-borne diseases, toxic materials, radiation, water quality, air quality, food safety, solid and liquid wastes, occupational health, injuries, and emerging global environmental public health problems.

**HLTH 350G**  
International Health  
3:3:0  
Fall, Spring  
* Prerequisite(s): University Advanced Standing

Provides knowledge regarding the various health issues that affect people around the world. Focuses on the role of culture, ethnicity, country of origin, politics, and gender on health. Examines the importance of cultural sensitivity and competence when attempting to eradicate public health concerns. Will also be offered summer of even years.

**HLTH 3600**  
Social Marketing  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): University Advanced Standing

Identifies how to promote social changes to the consumer. Teaches packaging, positioning and framing of programs to appeal to more salient, powerful, and influential core values: freedom, independence, autonomy, control, fairness, democracy, and free enterprise. Discusses marketing principles, planning, implementing, and evaluation of public health programs, strategic planning, social change theory, and case studies.

**HLTH 3700**  
Grant Writing  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): University Advanced Standing and matriculation into BS Community Health or BS School Health Education

Provides students with the needed knowledge and skills for community health grant writing. Teaches the major elements of grant writing including the identification of grant sources, writing grant proposals, and preparation of budgets and timelines.

**HLTH 3750**  
Biostatistics for Public Health  
3:3:0  
Fall, Spring  
* Prerequisite(s): STAT 1040 or STAT 1045, Matriculation into Community Health BS, School Health BS, or Nursing BS program and University Advanced Standing

Introduces use of statistics for research purposes in the fields of public and community health. Teaches descriptive and inferential statistics. Includes central tendency, variability, correlation and regression, probability, and various inferential techniques such as t-test for independent and dependent samples, one-way and two-way analysis of variance, post-hoc tests, and non-parametric statistical tests.

**HLTH 3800**  
Epidemiology  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): HLTH 4040, University Advanced Standing, and matriculation into BS Community Health or BS School Health Education

Introduces epidemiologic principles and methods. Examines the historical and theoretical bases of epidemiology; statistical methods; distribution of disease over person, place, and time; research methods utilized in epidemiology; and the application of epidemiology to the prevention of disease and the promotion of health.

**HLTH 4100**  
Health Education Curriculum for Secondary Teachers  
3:3:0  
Fall  
* Prerequisite(s): University Advanced Standing and matriculation into the BS School Health program

For secondary education majors. Emphasizes the role of the teacher as a health educator and team member in providing a healthy school environment. Examines comprehensive school health education and studies the basic Utah health care curriculum for secondary education. Develops learning activities applicable to the health needs of secondary education students.

**HLTH 4140**  
Community Health Assessment and Program Development  
3:3:0  
Fall  
* Prerequisite(s): HLTH 3200, HLTH 3220, University Advanced Standing, and matriculation into the BS Community Health

Intended for Community Health Education majors. Covers building a rationale, gaining support of stakeholders, selecting an appropriate model or theory, conducting a needs assessment, developing goals and objectives, and determining appropriate health education strategies. The first of two courses which will help students develop the skills to successfully begin the program planning process.

**HLTH 4160**  
Program Implementation and Evaluation  
3:3:0  
Spring  
* Prerequisite(s): HLTH 4140 and University Advanced Standing

Intended for Public and Community Health majors. Builds upon HLTH 4140 and develops the knowledge, skills, and abilities to conduct health program implementation and evaluation. Includes a systematic approach to the implementation and evaluation of health education programs.

**HLTH 4200**  
Health Education Teaching Methods  
3:3:0  
Spring  
* Prerequisite(s): HLTH 4100, University Advanced Standing and matriculation into BS School Health

For secondary education school health majors. Examines teaching methods, materials and techniques. Studies secondary education health curriculum, program planning, development, implementation, and evaluation. Students will develop lesson plans and present them in secondary education settings.

**HLTH 4250**  
(Cross-listed with: POLS 4250)  
Public Health Organization and Policy  
3:3:0  
Fall, Spring  
* Prerequisite(s): HLTH 3200, University Advanced Standing, and matriculation into BS Community Health or BS School Health Education; or instructor approval

Focuses on U.S. health policy and policy analysis. Describes the basic machinery of policymaking and legal processes that underpin the individual health care and public health systems. Analyzes the fundamental problems and contemporary issues in health policy and teaches students how to properly develop and analyze health policy.

**HLTH 4300**  
Community Health Ethics  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): University Advanced Standing & matriculation into BS Community Health

For students majoring in Community Health or Integrated Studies with a Community Health emphasis. Also for students interested or working in health-care fields such as nursing, dental hygiene, etc. Explores and interprets ethical codes of conduct as set forth by health professions and/or organizations. Emphasis will be given to the Code of Ethics for the Health Care profession. Examines various health care issues such as: health care allocation, health care costs, death and dying issues, patient rights, informed consent, confidentiality etc. Investigates conflicts arising from existing and evolving codes of conduct using case studies as an arena for discussion.

**HLTH 440G**  
Health and Diversity  
3:3:0  
Fall, Spring  
* Prerequisite(s): University Advanced Standing

Provides students with a specific set of skills and knowledge in cultural competence. Focuses on understanding the public health system, identifying one’s own cultural biases, understanding biases regarding one’s own cultural identity, and developing culturally competent approaches and tools. Enables students to be more effective public health professionals whether they work with diverse populations within the United States or in international settings. Is offered each Fall and Spring Semester and Summer of odd years.
**Course Descriptions**

**HLTH 4500**  
*Public Health Administration*  
3:3:0  
Fall, Spring  
* Prerequisite(s): University Advanced Standing and matriculation into BS Community Health

Gives individuals a working and practical look at numerous aspects of public health administration and leadership. Includes definitions of leadership, qualities of an effective leader, sources of power, time management, the planning and decision making process, three core functions of public health, social marketing strategies, as well as other timely topics related to the administration and practice of public health.

**HLTH 4600**  
*Research Methods for Community Health*  
3:3:0  
Spring  
* Prerequisite(s): University Advanced Standing, and matriculation into BS Community Health or BS School Health Education; or instructor approval.

Introduces research techniques, methodology, and designs. Examines the planning, organizing, and conducting of research studies for solving problems unique to community health. Includes literature review and research article critiques.

**HLTH 4720**  
*CHES Preparation*  
3:3:0  
Fall, Spring  
* Prerequisite(s): Department approval, University Advanced Standing; Senior standing

Provides an overview of the health education areas of responsibilities in preparation for the Certified Health Education Specialist national exam. For students in their last semester at UVU, planning to register and take the CHES exam in October or April.

**HLTH 482R**  
*Community Health Internship*  
1 to 8:1 to 8:0  
Fall, Spring, Summer  
* Prerequisite(s): HLTH 3230, University Advanced Standing, and matriculation into BS Community Health

Provides field experience and enhanced knowledge in community health services and education, under the preceptorship of an individual qualified by education and/or experience. May be repeated for a maximum of 6 credits toward graduation. May be graded credit/no credit.

**HLTH 489R**  
*Undergraduate Research*  
1 to 3:0 to 15  
On Sufficient Demand  
* Prerequisite(s): Instructor approval, departmental approval, and University Advanced Standing

Provides students the opportunity to conduct research under the mentorship of a faculty member. Provides an opportunity to put in practice the theoretical knowledge gained in prior major courses. Requires the creation of a significant intellectual or creative product that is characteristic of the community health discipline and worthy of communication to a broader audience. May be repeated for a maximum of 3 credits toward graduation.

**HLTH 490R**  
*Special Topics in Community Health*  
1 to 3:1 to 3:0  
On Sufficient Demand  
* Prerequisite(s): Department Approval and University Advanced Standing

Explores and examines special topics related to community health issues and problems. May include community health topics such as AIDS/HIV, West Nile Virus, special drug and sexuality issues, obesity, suicide, teenage pregnancy and terrorism. May be repeated for a maximum of 6 credits toward graduation.

**HLTH 4950**  
*Senior Capstone*  
1:1:0  
Fall, Spring, Summer  
* Prerequisite(s): University Advanced Standing, Senior Standing, Matriculation in BS Community Health  
* Prerequisite(s) or Corequisite(s): HLTH 4250

Assesses both content knowledge and skills developed during the course of the Community Health Education program. Provides students an opportunity to reflect on their learning and demonstrate the program outcomes through the development and presentation of a professional electronic portfolio, and the completion of a cumulative post-test. For Community Health Education seniors in their last semester.

**HLTH 6200**  
*Issues in Public Health*  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): Acceptance into the Masters of Public Services Program

Examines public health principles and concepts by focusing on the five core public health knowledge areas and the ten essential public health services. Explores public health infrastructure, surveillance, social determinants of health, policy, and emerging issues. Provides a broad framework for understanding public health’s role in community health, prevention, and medicine.

**Hospitality Management (HM)**

**HM 1010**  
*Introduction to Hospitality Industry*  
3:3:0  
Fall, Spring

Designed for hospitality management majors and as elective credit for other business majors. Provides a basic understanding of the lodging and food service industry by tracing the industry’s growth and development. Analyzes management’s functions and responsibilities in such areas as administration, organization, communications, accounting, marketing, and human relations. Examines industry opportunities and future trends. Includes lecture, field trips, guest speakers, film, and tapes. Completers should have a knowledge of career opportunities and basic hospitality management principles. Lab access fee of $30 for computers applies.

**HM 1130**  
*Hotel Operations I*  
3:3:0  
Fall, Spring

Designed for hospitality management majors and as elective credit for other business majors. Presents a systematic approach to front office procedures by detailing the flow of business through a hotel beginning with the reservation process and ending with check-out settlement. Examines various elements of effective front office management, paying particular attention to planning and evaluating front office operation and to personnel management. Front office procedures and management are placed within the context of the overall operation of a hotel. Includes role play and computer simulations. Completers should be competent to be a beginning front desk clerk. Lab access fee of $30 for computers applies.

**HM 1180**  
*Food and Beverage Management*  
3:3:0  
Fall, Spring

Designed for hospitality management majors and as elective credit for other business majors. Studies management principles of menu planning, purchasing, storage, food and beverage production, service, and sanitation. Includes lecture, case studies, guest speakers, field trip and project. Completers should understand the basic structure of a hospitality unit and how management principles relate to a restaurant. Lab access fee of $30 for computers applies.

**HM 2500**  
*Statistics for the Hospitality Industry*  
3:3:0  
* Prerequisite(s): MAT 1030, MAT 1035, STAT 1040, STAT 1045, MATH 1050, MATH 1055, or MATH 1090, or higher

Provides a step-by-step approach to gathering, analyzing, and using numeric market, operating, and financial data in the hospitality management industry. Hospitality/industry scenarios and hands-on exercises and labs are used to build student skills in data analysis as a platform to practice data-gathering and analysis for projects in business planning, market research, revenue management, or designing customer- employee satisfaction surveys. Canvas Course Mats $72/Wiley applies

**HM 281R**  
*Cooperative Work Experience*  
2 to 9:2 to 9:0  
Fall, Spring, Summer  
* Prerequisite(s): Approval of School of Business Career and Corporate Manager

Provides opportunities to apply classroom theory on the job. Students work as paid employees in a job that relates to their careers while enrolled at the College. Credit is determined by the number of hours a student works during the semester. Completers meet individually set goals. A total of six credits may be applied toward graduation with a diploma or AAS degree and three credits toward Certificate programs. May be graded credit/no credit.

**HM 2890**  
*Industrial Work Experience*  
1 to 8:0:5 to 40  
Fall, Spring, Summer

Designed for hospitality management majors as elective credit. Provides practical work experience in an actual restaurant, applying management theory in carrying out duties assigned by the manager/owner.


**Course Descriptions**

**HM 296R**

Hospitality Management Seminar
1 to 3:1 to 3:0  On Sufficient Demand
* Prerequisite(s): Instructor/Department Chair Approval
Provides short courses, workshops, and special programs in hospitality management or culinary arts topics. Repeatable for up to three credits.

**HM 297R**

Independent Study
1 to 3:1 to 3:0  Not Offered
* Prerequisite(s): Department Chair Approval
Offers independent study as directed in reading, in individual projects, etc., in the area of hospitality management or culinary arts at the discretion and approval of the department chair. May be repeated for up to 6 credits toward graduation.

**HM 3020**

Hospitality Managerial Accounting I
3:3:0  Fall, Spring
* Prerequisite(s): ACC 2010, Matriculation into the Woodbury School of Business, and University Advanced Standing
Presents managerial accounting concepts and explains how these concepts apply to specific operations within the hospitality industry. Utilizes lectures, demonstrations, and case studies in class. May be delivered hybrid and/or online. Lab access fee of $30 for computers applies.

**HM 3030**

Hospitality Managerial Accounting II
3:3:0  Fall, Spring
* Prerequisite(s): ACC 2010, HM 3020, Matriculation into the Woodbury School of Business and University Advanced Standing
* Prerequisite(s) or Corequisite(s): HM 3020
Is the second in a two-part series designed to integrate principles of operations and managerial accounting as they relate to the hospitality industry. Emphasizes developing competencies in analyzing real world hospitality industry scenarios using spreadsheet software. Includes: cost volume profit analysis and applications, forecasting, production controls, budget creation and uses, flexible budgets, depreciation, taxation, time value of money basics, capital budgeting, evaluating and financing investments, and cost benefit analysis.

**HM 3050**

Country Club Management
3:3:0  Not Offered
* Prerequisite(s): University Advanced Standing
Provides a basic understanding of country club management with golf operations. Analyzes management's functions and responsibilities in such areas as administration, organization, communications, accounting, marketing, and human relations. Examines industry opportunities and future trends. Includes lectures, field trips, guest speakers, films, and tapes. Completers should have knowledge of career opportunities and basic hospitality management principles.

**HM 3100**

Hospitality Law
3:3:0  Fall
* Prerequisite(s): University Advanced Standing
Teaches rights and responsibilities that the law grants to or imposes upon a hotelkeeper, and illustrates the possible consequences of failure to satisfy legal obligations. Explains the issues surrounding the need for individualized security programs; examines a wide variety of security and safety equipment and procedures, and discusses guests safety. Presents a systematic approach to the legal issues affecting human resource management. Includes lecture, case studies, videos, and site visits. May be delivered online and/or hybrid. Lab access fee of $30 for computers applies.

**HM 3150**

Hospitality Finance
3:3:0  Fall, Spring
* Prerequisite(s): HM 3020 and University Advanced Standing
Presents the general conceptual framework for understanding and applying techniques of value creation for a hospitality firm. Includes risk and value, timing and value of cash flows, valuation and required rates of return, capital expenditure analysis, project valuation criteria, capital structure management, and financial markets. Introduces financial topics and practices application techniques. Includes lecture, demonstration, case studies, and guest speakers. May be delivered online. Lab access fee of $30 for computers applies.

**HM 3200**

Global Tourism
3:3:0  Spring
* Prerequisite(s): MKTG 2200 or ENGL 2100 and University Advanced Standing
( Cross-listed with: MGMT 3200)
Studies the history and future of tourism, the impacts (environment, culture, economy) of tourism, and tourist behavior. Includes lectures, case studies, field trips, and guest speakers. Completers should be sophisticated travelers and understand the nature of the world's largest industry and its impacts on society and national economies.

**HM 3210**

Event Venue and Convention Management
3:3:0  Fall, Spring
* Prerequisite(s): ENGL 2100 and University Advanced Standing
( Cross-listed with: MGMT 3210)
Analyzes and explores the conventions and meetings market, event venue management, and the corresponding relationship with convention and visitors bureaus. Covers various procedures in site selection, site layout and logistics, operations, negotiations and contracts, food and beverage service, and convention sales.

**HM 3390**

Hotel Operations II
3:3:0  Fall, Spring
* Prerequisite(s): HM 1130 and University Advanced Standing
Overviews fundamentals of housekeeping management. Describes the management functions, tools, and practices required in today's lodging and institutional housekeeping departments. Provides students with information they need to successfully manage a physical plant and work effectively with engineering and maintenance. Includes lecture, role play, site visits, film, and tapes. Completers should have a basic understanding of housekeeping and facility management. Lab access fee of $30 for computers applies. Canvas Course Mats $54/Wiley applies.

**HM 3640**

Food and Beverage Controls
3:3:0  Fall, Spring
* Prerequisite(s): ACC 2010 and University Advanced Standing
Designed for hospitality management majors and as elective credit for other business majors. Covers the principles and procedures involved in an effective food and beverage control system, including standards determination, the operating budget, income and cost control, menu pricing, and computer applications. Includes lecture and computer simulation. Completers should have a basic understanding of control functions within a hospitality unit and be familiar with computer control systems. Lab access fee of $30 for computers applies. Canvas Course Mats $54/Wiley applies.

**HM 3710**

Marketing of Hospitality Services
3:3:0  Fall, Spring
* Prerequisite(s): MKTG 2200 and University Advanced Standing
For hospitality management majors and as elective credit for other business majors. Provides basic knowledge and practical experience which will enable students to develop strategic marketing plans for hotel/motel properties. Focuses on practical sales techniques, proven approaches to selling to targeted markets, and advertising's role in sales. Includes lecture, role play, case studies, simulations and projects. Completers should be able to develop a marketing study of hospitality unit and understand marketing and sales techniques. Lab access fee of $30 for computers applies. Canvas Course Mats $54/Wiley applies.

**HM 3800**

Vacation Rental Management
3:3:0  Fall, Spring
* Prerequisite(s): University Advanced Standing
Introduces management practices used in the short term rental market of the lodging industry. Provides an overview of the industry including regulations and accounting, marketing and reservations, guest and neighbor relations, maintenance and housekeeping, design and décor, security and guest safety, tech devices and innovations, and opportunities for entrepreneurial entry.
HM 4150 Hospitality Revenue Management 3:3:0 Spring
* Prerequisite(s): HM 1130, and University Advanced Standing
* Prerequisite(s) or Corequisite(s): HM 3710

Designed for Hospitality Management majors. Addresses the emerging revenue management process and the keys to effective revenue management planning. Explores how to develop, implement, and evaluate strategic management processes. May be delivered hybrid and/or online.

HM 4200 Event Planning 3:3:0 Fall, Spring
* Prerequisite(s): HM 3210 and University Advanced Standing

Introduces the event industry, its scope and responsibilities, and the multidimensional nature of an event experience. Develops needs assessment, feasibility studies, and project management techniques to help students understand events in greater detail. Explores the interaction between attendee and the environment that enhances the event experience. Provides experience managing food and beverage services, technical services, ancillary activities, and marketing for events.

HM 4250 Advanced Event Production 3:3:0 Fall, Spring
* Prerequisite(s): HM 4200 and Advanced University Standing

Explores advanced techniques and procedures to effectively execute an event production. Includes creating feasible site plans, lighting and sound design, table-top and stage décor, menu and food set-up designs, and event marketing plans. Focuses on how to successfully manage an event from inception to implementation to evaluation. Provides hands-on experience in event production and the creation of a professional event portfolio.

HM 4300 Food and Beverage Consulting 3:3:0 Spring
* Prerequisite(s): HM 1180, HM 3030, and University Advanced Standing

Provides a consulting experience with a local company. Promotes application of principles taught throughout the hospitality management program with a specific focus on effectively managing food and beverage functions. Tailors projects to students completing the food and beverage track. Recommends but does not require at least a year of experience working in the foodservice industry. Uses student-led consulting teams to complete real-world projects.

HM 4550 Hospitality Strategic Management 3:3:0 Spring
* Prerequisite(s): HM 3030 and Matriculation into the Woodbury School of Business and University Advanced Standing.

Examines delivery of the organization's product or service. Includes investigative and production planning, scheduling of operations, allocation of resources, manpower and equipment decisions, inventory control, production planning, and quality. May be delivered online. Lab access fee of $30 for computers applies. Canvas Course Mats $54/Wiley applies.

HM 481R Internship 1 to 8:1 to 8:0 Fall, Spring, Summer
* Prerequisite(s): Approval of School of Business Career and Corporate Manager and University Advanced Standing

For Bachelor of Science Degree students in Business Management or Hospitality Management. Provides opportunities to apply classroom theory on the job. Allows students to work as employees in a job that relates to their careers while enrolled at the College. Credit is determined by the number of hours a student works during the semester. Completers meet individually set goals. 3 credits may be applied toward a Bachelor of Science degree in Business Management; 6 credits may be applied to the Hospitality Management degree. May be graded credit/no credit.

HM 496R Hospitality Management Seminar 1 to 3:1 to 3:0 On Sufficient Demand
* Prerequisite(s): Instructor/Department Chair Approval and University Advanced Standing

Provides short courses, workshops, and special programs in hospitality management. Repeatable for up to 3 credits.

HM 497R Independent Study 1 to 3:1 to 3:0 Not Offered
* Prerequisite(s): Department Chair Approval and University Advanced Standing

For bachelor's degree students and other interested persons. Offers independent study as directed in reading, in individual projects, etc., in the area of hospitality management at the discretion and approval of the department chair.

Honors (HONR)

HONR 100R Honors Colloquium 1:1:0 Fall, Spring
* Prerequisite(s): Current enrollment in Honors program

Limited to students accepted to the Honors Program. Includes experiential education activities and cohort-building academic experiences, cultural events, and research/service projects. Develops reflective writing abilities. May include readings, guest lectures, community/campus service and leadership projects, research groups, outdoor excursions, and attendance at fine arts performances. May be repeated for a maximum 6 credits toward graduation. Course fee of $15 for tickets, vehicle costs, and equipment rental applies.

HONR 150R Honors Housing Colloquium 1:1:0 Fall, Spring
* Prerequisite(s): Current enrollment in Honors program and receipt of Honors Housing Scholarship.

Limited to students currently receiving the Honors Housing Scholarship. Builds collegiate and adult life skills through cohort-based collaborative learning. Develops reflective and communication abilities. May include readings, guest lectures, community or campus service and leadership projects, outdoor excursions, and attendance at fine arts or sporting events. May be repeated for a maximum 4 credits toward graduation.

HONR 2000 Ancient Legacies 3:3:0 Fall, Spring
* Prerequisite(s): Current enrollment in Utah Valley University Honors program or permission of the instructor

Provides students with the opportunity to study selected great works in the history of ideas from an interdisciplinary perspective. Examines Ancient, Medieval, and early Renaissance thought through primary texts composed before 1500 C.E. Focus of the class determined by instructor, but must include at least one text written during each of these periods, and at least one non-Western text. Emphasizes close study of primary texts drawn from disciplines including, but not limited to, astronomy, physics, biology, literature, history, philosophy, and religion. Develops strong critical thinking, writing, and rhetorical skills.

HONR 2100 Modern Legacies 3:3:0 Fall, Spring
* Prerequisite(s): Current enrollment in Honors program or permission of the instructor

Provides students with the opportunity to study selected great works in the history of ideas from an interdisciplinary perspective. Examines Modern and Contemporary thought through primary texts composed after 1500 C.E. Focus of the class determined by instructor, but must include at least one text that adds diversity (for instance, in ethnicity, class, or gender). Emphasizes close study of primary texts drawn from disciplines including, but not limited to, astronomy, physics, biology, literature, history, philosophy, and religion. Develops strong critical thinking, writing, and rhetorical skills.

HONR 300R Honors Interdisciplinary Seminar 1 to 4:1 to 4:0 to 3 On Sufficient Demand
* Prerequisite(s): Current enrollment in UVU Honors Program or instructor approval and University Advanced Standing

Topics may be drawn from any academic discipline including but not limited to business, technology and computing, education, fine and performing arts, physical and biological sciences, health science, humanities, and social sciences. Specific content determined by faculty. Consists of rigorous analysis and synthesis of innovative, current, or special topics. May include lab or performance requirement. May be repeated for a maximum of 12 credits toward graduation.

HONR 400R Honors Capstone 1:1:0 Fall, Spring
* Prerequisite(s): Senior status or permission of Honors Director and University Advanced Standing
* Corequisite(s): Enrollment in Honors Program and a GPA of at least 3.20

Prepares students to complete an Honors Thesis or Honors Project (HONR 498R or HONR 499R). Initiates the research or design for an Honors Thesis or Honors Project. Includes drafting and completing a proposal, performing background design or research, and assembling a committee of at least two faculty or community mentors. May include completion of an Institutional Review Board application for research involving human subjects. Consists of rigorous analysis and synthesis of current topics in the student's discipline. May be repeated for a maximum of 2 credits toward graduation.
Course Descriptions

HONR 498R
Honors Thesis
3:0:6  Fall, Spring
* Prerequisite(s): HONR 400R (Senior status or permission of Honors Director) and University Advanced Standing
* Corequisite(s): Enrollment in Honors Program

For students completing a baccalaureate degree and the Honors Program. Provides an opportunity for seniors in the Program to research and write on a topic related to their major, supervised by a faculty mentor. Includes independent research as necessary. Culminates in the preparation of a written paper and oral presentation describing the results of the research project. Honors Project HONR 499R may be substituted. May be repeated for a maximum of 6 credits toward graduation. Course fee of $10 for binding applies.

HONR 499R
Honors Project
3:0:6  Fall, Spring
* Prerequisite(s): HONR 400R and (Senior status or permission of Honors Director) and University Advanced Standing
* Corequisite(s): Enrollment in Honors Program

For students completing a baccalaureate degree and the Honors Program. Provides an opportunity for seniors in the Program to research, design, carry out, and report results of an project related to their major, supervised by a faculty mentor. Includes independent research and creative endeavor as necessary. Culminates in the public presentation in a seminar, colloquium, recital, show, portfolio, or other appropriate method in the discipline, and the preparation of a written section evaluating or reflecting on the project's results. May be taken as an extension of research pursued in Honors Thesis 498R; may be taken as a substitute for Honors Thesis 498R. If a student's major department requires a comparable course (with, for instance, substantial written component), that course may be substituted, with permission of the Honors Director. May be repeated for a maximum of 6 credits toward graduation. Course fee of $10 for binding applies.

Human Resource Management (HR)

HR 3430
Introduction to Human Resource Management
3:3:0  Fall, Spring, Summer
* Prerequisite(s): ENGL 2010 and University Advanced Standing

Covers labor and management relations, legal issues, job analysis and design, recruiting and selecting, job placement and orientation, training, career planning, EEO, performance appraisal, and employee benefits. Presents tools for the implementation of a human resource management program. Includes class discussions, case studies, videos, oral presentations, written assignments, group projects, and guest speakers. May be delivered online and/or hybrid. Lab access fee of $30 for computers applies.

HR 3530 (Cross-listed with: LEGL 3530)
Employment and Labor Law
3:3:0  Fall
* Prerequisite(s): ENGL 2010 and University Advanced Standing

Covers employment and labor law, cases, and policy. Includes employment discrimination along with labor relations statutes exploring the link between employment discrimination and traditional labor relations law. Presents tools necessary to formulate and write policy for profit and non-profit organizations. Includes lecture, class discussions, case studies, a service learning project, and guest speakers. Lab access fee of $30 for computers applies.

HR 3550
Organization Development
3:3:0  Spring
* Prerequisite(s): (ENGL 1010 or ENGH 1005) and University Advanced Standing

Studies the process of ensuring skills, knowledge, abilities, and performance of the workforce meet current and future individual, team, and organizational needs. Includes the development, implementation, evaluation activities, interventions, and programs that focus on customized organization development (change), performance management, training and development, career development, and other unique employee or employee group needs.

HR 3570
Training and Development
3:3:0  Fall
* Prerequisite(s): ENGL 2010 and University Advanced Standing; HR 3430 highly recommended

Studies current models, methods, and skills for training and development designed to improve individual, group, and organizational performance. Examines the organizational role of the training specialist, identifying training needs, maximizing the trainee's learning, evaluating training programs, on-site training methods, off-site training methods, developing and training leaders, management and executive development, and societal concerns. Includes teaching techniques such as lecture, class discussions, small group activities or projects, oral presentations, written assignments, guest speaker, and scholarly dialogue. Includes a semester-long training and development academic service-learning project.

HR 4000
Total Compensation I--Pay and Incentives
3:3:0  Fall
* Prerequisite(s): HR 3430 and University Advanced Standing

Studies wage and salary administration in public and private organizations; total compensation systems; interrelationship among employee performance, intrinsic and extrinsic rewards, perceived equitable payments, and employee satisfaction; employee benefits; employee incentive programs. Lab access fee of $30 for computers applies.

HR 4010
Total Compensation II--Benefits
3:3:0  Fall
* Prerequisite(s): HR 3430 and University Advanced Standing

Identifies a framework for implementing benefits systems to attract and retain a high performance workforce in a global environment; provides a comprehensive overview of benefits management strategies in organizations; discusses relevant models of compensation; and reviews various benefits influences, including laws and regulations.

HR 4050
Human Resource Information Systems
3:3:0  Fall
* Prerequisite(s): HR 3430 and University Advanced Standing

Provide students with introductory knowledge of Human Resource Information Systems. Examines HR information system adoption, implementation, and the assessment and building of management support to achieve HR strategic objectives.

HR 4060
HR Analytics
3:3:0  Fall, Spring
* Prerequisite(s): Matriculation into the Woodbury School of Business and University Advanced Standing

Explores key metrics, analyses, interpretation and communication tools necessary in developing comprehensive human capital strategies. Enables students to identify, analyze and interpret data to make human resource recommendations for individuals and organizations. Includes exploration of data analysis and presentation skills for human capital research and decision-making for planning, employee selection, compensation, employee survey data, organizational effectiveness and utilization analysis.

HR 4610
Strategic Staffing & Performance Evaluation
3:3:0  Fall
* Prerequisite(s): Matriculation into the Woodbury School of Business and University Advanced Standing; HR 3430 and HR 3530 recommended

Addresses the key HR functions of planning, staffing, and maintaining a quality workforce. Includes identifying critical specifications for filling positions, recruiting a pool of talent, developing selection methods, and creating desirable person/job matches. Lab access fee of $30 for computers applies.
HR 4800
Strategic Human Resource Management
3:3:0 Fall, Spring
* Prerequisite(s): HR 3430, HR 4050, HR 4060. Matriculation into the Woodbury School of Business, and University Advanced Standing.
Facilitates students’ understanding of the total alignment of human resource management (HRM) and business strategies. Provides an overview of the role of HRM as a capstone course. Considers the overall design of the HRM infrastructure to enable optimal employee performance relative to the strategic goals of the organization, to achieve competitive advantages. Examines the techniques, policies, processes, strategies, and practices used by companies and/or managers to effectively and efficiently utilize human resources. Teaches theories and practices in multiple HRM areas, including staffing, performance evaluation, work and job design, training, total compensation, the legal environment, labor relations, and megatrends in the external labor market. Provides extensive training to prepare for the aPHR (Associate Professional of Human Resources) exam as a professional certification from the Human Resource Certification Institute (HRCI).

HR 495R
Advanced Topics in Strategic Human Resource Management
1 to 3:1 to 3:0
* Prerequisite(s): Department chair approval and University Advanced Standing.
Provides exposure to emerging current interests in strategic human resource management topics. Topics vary each semester. May be repeated for a maximum of 6 credits toward graduation.

Humanities (HUM)

HUM 101H
Humanities Through the Arts
3:3:0 Fall, Spring
Studies the media and compositional elements of the various art forms (literature, music, visual arts, theater, film, dance, and architecture), for greater understanding and enjoyment. Teaches how to interpret artistic meaning by analyzing artworks formally as well as in their historical contexts, such as the predominant subject matters and styles of their period. Encourages students to integrate the arts into their daily lives habitually, so that they become lifelong learners and educators.

HUM 120R
Humanities Forum
3:3:0 On Sufficient Demand
Introduces students to a wide variety of aspects of the humanities. Provides enriched learning situations in which students are exposed to humanities events or noted guest scholars and other lecturers. Requires attendance of a choice of specified events on campus and off, as well as of workshop meetings with an instructor. May be repeated for a maximum of 6 credits toward graduation.

HUM 2010
World History Through the Arts I
3:3:0 Fall, Spring, Summer
Studies early societies through the 1600s, as the first part of a two-part series which examines world civilizations through the arts. Explores formative creative events in history and their relationships to modern issues. Presents perspectives of traditional humanistic values of arts and ideas. Investigates how others have dealt with problems that humans faced in the past, and possible strategies for problem solving that might aid students today.

HUM 201G
World History Through the Arts I
3:3:0 Fall, Spring, Summer
Studies early societies through the 1600s, as the first part of a two-part series which examines world civilizations through the arts. Explores formative creative events in history and their relationships to modern issues. Presents perspectives of traditional humanistic values of arts and ideas. Investigates how others have dealt with problems that humans faced in the past, and possible strategies for problem solving that might aid students today. Promotes understanding of the global, trans- and intercultural nature of human creativity and its impacts.

HUM 2020
World History Through the Arts II
3:3:0 Fall, Spring
Studies societies from the 1600s, as the second part of a two-part series which examines world civilizations through the arts. Explores formative creative events in history and their relationships to modern issues. Presents perspectives of traditional humanistic values of arts and ideas. Investigates how others have dealt with problems that humans face in the past, and possible strategies for problem solving that might aid students today.

HUM 202G
World History Through the Arts II
3:3:0 Spring
The second of a two-part series which examines world civilizations through the arts. Studies societies from the 1600's. Explores formative creative events in history and their relationships to modern issues. Presents perspectives of traditional humanistic values of arts and ideas. Investigates how others have dealt with problems that humans face in the past, and possible strategies for problem solving that might aid students today.

HUM 203G
Art Form Focus I GI
3:3:0 On Sufficient Demand
Surveys the nature, history, and possibilities of one specific art form, such as painting, sculpture, theater, architecture, dance, music, or literature, in the context of the influence that art forms exert on each other. Deals with characteristics of a chosen art form prior to 1500 in more depth than Hum 1010 or 2010 can, while highlighting how creative events in human history always are in dialogue both with the social discourses of their times and with each other.

HUM 204G
Art Form Focus II GI
3:3:0 On Sufficient Demand
Surveys the nature, history, and possibilities of one specific art form, such as painting, sculpture, theater, architecture, dance, music, or literature, in the context of the influence that art forms exert on each other. Deals with characteristics of a chosen art form after 1500 in more depth than Hum 1010 or 2020 can, while highlighting how creative events in human history always are in dialogue both with the social discourses of their times and with each other.
HUM 2100 Adventures of Ideas Through 1500 3:3:0 Fall
Studies great written or visual texts in the Western or Eastern history of ideas--artistic, literary, philosophical, religious, political, technological, or scientific--from Antiquity through 1500. Readings and thematic focus vary by instructor, but all courses interrelate texts from different disciplines and world regions under one broad topic relating to the human condition, such as love, death, war and peace, family, justice, the state etc.

HUM 210H Adventures of Ideas Through 1500 3:3:0 Fall
* Prerequisite(s): Enrollment in the UVU Honors program or approval by the instructor.

Studies great written or visual texts in the history of ideas--artistic, literary, philosophical, religious, political, technological, or scientific--from Antiquity through 1500. Readings and thematic focus vary by instructor, but all courses interrelate texts from different disciplines and world regions under one broad topic relating to the human condition, such as love, death, war and peace, family, justice, the state etc. This Honors version of HUM 2100 requires more rigorous reading and writing assignments and is open to students in the Honors program or students with special approval from the instructor only.

HUM 2200 Adventures of Ideas After 1500 3:3:0 Spring
Studies great written or visual texts in the Eastern or Western history of ideas--artistic, literary, philosophical, religious, political, technological, or scientific--from the Renaissance through the present. Readings and thematic focus vary by instructor, but all courses interrelate readings from different disciplines and world regions under one broad topic relating to the human condition, such as individuality, power, health, freedom, violence, the natural environment, etc.

HUM 220H Adventures of Ideas After 1500 3:3:0 Spring
* Prerequisite(s): Enrollment in the Honors Program or instructor's approval

Studies great written and visual texts in the Eastern or Western history of ideas--artistic, literary, philosophical, religious, political, technological, or scientific--from the Renaissance through the present. Readings and thematic focus vary by instructor, but all courses interrelate readings from different disciplines and world regions under one broad topic relating to the human condition, such as individuality, power, health, freedom, violence, the natural environment, etc. This Honors version of HUM 2200 requires more rigorous reading and writing assignments and is open to students in the Honors program or students with special approval from the instructor only.

HUM 2500 Introduction to Ancient Greek I 6:6:0 On Sufficient Demand * Prerequisite(s): ENGL 1010 or ENGH 1005
Allows students the opportunity to intensively study the Ancient Greek language at the introductory level. Focuses primarily on Attic Greek. Focuses primarily on grammar and textbook exercises with some analysis of literary and/or philosophical selections in Ancient Greek. Relates particularly to students interested in studying Ancient Greek philosophy or Ancient Greek literature, and offers an important grounding for students interested in studying the New Testament.

HUM 2510 Introduction to Ancient Greek II 6:6:0 On Sufficient Demand * Prerequisite(s): HUM 2500
Allows students to continue intensive study of the Ancient Greek language at the introductory level. Focuses primarily on Attic Greek. Focuses primarily on grammar and textbook exercises with some analysis of literary and/or philosophical selections in Ancient Greek. Relates particularly to students interested in studying Ancient Greek philosophy or Ancient Greek literature and an important grounding for students interested in studying the New Testament.

HUM 281R Internship 1 to 6:1 to 6:0 On Sufficient Demand * Prerequisite(s): Approval of Cooperative Coordinator * Prerequisite(s) or Corequisite(s): Completion of at least nine credits of class work in Humanities.
Allows pre-advanced Humanities students to receive credit for Humanities-related service as a paid or unpaid intern in a governmental, not-for-profit, or private agency. Provides practical and research development in the selected areas of service so as to further students' academic and professional interests and goals. Internship must be supervised by agency representative. Must be approved by Humanities internship advisor and department chair and written contracts must be completed and signed. Credit is determined by the number of hours a student works during the semester. May be repeated for a maximum of 9 credits toward graduation. May be graded credit/no credit.

HUM 290R Independent Study 1 to 3:1 to 3:0 to 12 On Sufficient Demand * Prerequisite(s): HUM 2500
* Prerequisite(s): University Advanced Standing
Provides independent study as directed in reading and individual projects. Request must be submitted for approval by the department. Students may do independent study for one, two or three credits with a limit of three credits applying toward graduation with an AA/AS degree.

HUM 295R Directed Readings 1 to 3:0 to 3:0 to 12 On Sufficient Demand
Provides an opportunity for second year students to do in-depth research within the Humanities. Study is limited to advanced work beyond that which can be completed in existing, available classes. A proposal must be submitted and approved by the department prior to enrollment.

HUM 3060 (Cross-listed with: ENGL 3060) Visual Rhetoric 3:3:0 Fall
* Prerequisite(s): ENGL 2010 with a grade of C- or higher and University Advanced Standing
Investigates the growing academic and cultural interest in the rhetorical nature of visual texts. Teaches critical thinking about the consumption and productions of images and multimodal texts. Explores visual grammars and other theories of visual rhetoric as articulated by contemporary image, language, and scholars of rhetoric. Encourages the development of theoretical and practical knowledge through reading, discussion, and analysis as well as through the production of visual texts and written work.

HUM 320R Topics in Humanities 1 to 3:1 to 3:0 Fall, Spring
* Prerequisite(s): (ENGL 2010 or at least sophomore status) and University Advanced Standing
Studies varying topics such as a theme (e.g., death or story-telling), figure (e.g., John Cage or Michelangelo), or movement (e.g., DaDa or Pragmatism) in humanities. Includes study of more than one art form (e.g., film, literature, and music) or discipline (e.g., art, history, and biology). May be repeated for a maximum of 6 credits toward graduation with different topics.

HUM 325R Area Studies in Humanities 3:3:0 Fall, Spring
* Prerequisite(s): (ENGL 2010 or at least sophomore status) and University Advanced Standing
 Studies the literature, philosophy, and arts of a particular geographical area. Topics vary. May be repeated for a maximum of 6 credits toward graduation with different topics.

HUM 330R Period Studies in Humanities 3:3:0 Fall, Spring
* Prerequisite(s): (ENGL 2010 or at least sophomore status) and University Advanced Standing
Studies a particular period within the humanities (such as the medieval world, Romanticism, or Modernism). Involves study of more than one art form (e.g., music, art, and literature) or discipline (such as literature and philosophy) from during the chosen period. Topics vary. Repeatable, with different topics, toward graduation.

HUM 3500 Approaches to Humanities WE 3:3:0 Fall
* Prerequisite(s): University Advanced Standing
Surveys recent critical and aesthetic theory for each art form and teaches students how to apply theoretical approaches to the interpretation of individual texts, films, artworks, buildings, performances, etc. Includes readings of seminal works by philosophers, academic or professional critics, and practicing artists. Studies examples where the apparent divide between theory and practice is collapsed, where, for instance, an artistic product in itself may have provided a new approach for future artistic productivity and interpretation, or where a theoretical contribution has been made in such a way as immediately to demonstrate a certain creative practice.
HUM 3800 (Cross-listed with: PHIL 3800)
Aesthetics
3:3:0 Fall
* Prerequisite(s): University Advanced Standing
Studies aesthetics as perceived by the disciplines of philosophy, psychology, sociology, anthropology, history, and others. Analyses art forms, including the visual arts, literature, music, and theater from the perspectives of philosophers such as Plato, Aristotle, Kant, Hume, Dewey, Danto, Bell, Collingwood, Thoreau, and Dickie.

HUM 3820 (Cross-listed with: PHIL 3820)
Philosophy Through Literature
3:3:0 Spring Even Year
* Prerequisite(s): (PHIL 1000 or PHIL 100H or PHIL 2050 or PHIL 205H or PHIL 205G or PHIL 2110 or PHIL 2150 or instructor approval) and University Advanced Standing
Provides students with an interdisciplinary approach to the study of philosophy through literature. Gives students the opportunity to read some of the most engaging thinkers and how they offer differing perspectives through a variety of texts. Breaks down some of the strict divisions placed between philosophical and literary texts.

HUM 400R
Humanism and Posthumanism
3:3:0 Fall
* Prerequisite(s): At least junior standing and University Advanced Standing
* Prerequisite(s) or Corequisite(s): ENGL 2010
Explores Humanism or Posthumanism across the arts and their diverse cultural history. Defines humanism as varieties of the traditional view that Man is the measure of all things, and Posthumanism as an umbrella term for recent theoretical approaches within the humanities that challenge this view, for instance by placing humanity in the context of global or universal, intrinsically diverse and self-generating, scientific, technological, or ecological systems. May compare aspects of humanism throughout space and time, in its diverse cultural manifestations, or may focus on a twenty-first-century view of these long traditions. May also choose the example of the humanistic or posthumanistic aspects of a single time period, culture, or interdisciplinary oeuvre. Offers an opportunity to advanced students to synthesize, critique, and strengthen their own viewpoints, and to expand their interdisciplinary understanding of human expression, in response to the most fundamental or recent currents within intellectual history. May be repeated for a maximum of 6 credits toward graduation.

HUM 401R
Forms and Genres Across the Arts
3:3:0 Spring
* Prerequisite(s): At least junior standing and University Advanced Standing
* Prerequisite(s) or Corequisite(s): ENGL 2010
Explores forms and genres of imagery, narrative, drama, composition, or performance, across all art forms. Fosters analytical and interpretative skills in reading all kinds of texts. Highlights the inexorable interrelations among all realms of sensural, intellectual, aesthetic, and cultural experience. Illuminates the polar dynamics of tradition and innovation, continuity and change, and departure and return throughout the history of human creativity. May be repeated for a maximum of 6 credits toward graduation.

HUM 414R
Advanced Topics in Humanities
3:3:0 Fall, Spring
* Prerequisite(s): At least junior standing and University Advanced Standing
* Prerequisite(s) or Corequisite(s): ENGL 2010
Studies a topic relevant to cross-disciplinary humanities at an advanced level of critical engagement. Involves more than one art form or discipline of humanistic inquiry. Requires study of secondary literature and theoretical texts. May be repeated, with different topics, for a maximum of 6 credits toward graduation.

HUM 4300 (Cross-listed with: PHIL 4300)
Environmental Aesthetics
3:3:0 On Sufficient Demand
* Prerequisite(s): (PHIL 000, PHIL 100H, PHIL 2050, PHIL 205H, PHIL 205G, ENST 3000, HUM 1010, HUM 101H, HUM 101G, or HUM 3500) and University Advanced Standing
Introduces students to emerging themes in environmental aesthetics. Evaluates concepts and attitudes toward nature including, but not limited to, the concept of beauty in natural and human-made environments from a cross-cultural perspective. Studies environmental formalism, cognitivism and non-cognitivism, as well as divergent spiritual, ecological, religious, and moral approaches to the appreciation of nature.

HUM 481R
Internship
1 to 3:1 to 3:0
* Prerequisite(s): Departmental chair approval and University Advanced Standing
Provides supervised, practical, and professional experience for lower division students. May be repeated for a maximum of 8 credits toward graduation. May be graded Credit/No Credit.

HUM 4910
Humanities Capstone
3:3:0
* Prerequisite(s): Senior Standing and University Advanced Standing
* Prerequisite(s) or Corequisite(s): HUM 3500
To be taken during the student’s last semester in the baccalaureate program. Instructs them how to conduct Humanities research, develop a complex critical argument, and write a senior thesis, building on skills and knowledge gained in earlier courses. Encourages students to explore their desired professional or graduate research interests. Includes defending the paper’s thesis, method, and conclusion before a faculty committee, as well as the creation of a portfolio helpful in applying to graduate school or seeking employment.

Interdisciplinary Studies Prog (IDST)

IDST 281R
Interdisciplinary Studies Internship
1 to 8:1 to 8:0
* Prerequisite(s): Department Approval
Provides supervised, practical, and professional experience for lower division students. May be repeated for a maximum of 8 credits toward graduation. May be graded Credit/No Credit.

IDST 481R
Interdisciplinary Studies Internship
1 to 8:1 to 8:0
* Prerequisite(s): Junior standing, department approval, and University Advanced Standing
Provides supervised, practical, and professional experience for upper division students preparing for a variety of careers associated with interdisciplinary studies. May be repeated for a maximum of 8 credit hours. May be graded credit/no credit.

IDST 4900
Interdisciplinary Studies Capstone
3:3:0 Fall
* Prerequisite(s): Senior status and University Advanced Standing
For students nearing completion of an Interdisciplinary Studies minor. Provides an opportunity for students to synthesize their interdisciplinary course work. Requires and facilitates a major research project. Addresses the theoretical and practical problems of interdisciplinary research and writing. Requires participation in peer review groups and in-class presentations.
Information Management (IM)

IM 1010 Basic Computer Applications  
3:3:0  Fall, Spring, Summer  
* Prerequisite(s): Basic keyboarding skill  
Prepares students for the IC3 certification exam. Teaches basic computer fundamentals, digital living concepts, and key applications. Includes PC computer system concepts, basics of the Windows operating system, software licensing and installation, electronic communication, Internet and research fluency, and ethical computer usage. Provides hand-on experience in the basic features of Microsoft Word, PowerPoint, Excel, and Access as common business problem solving and communication tools. May be delivered hybrid and/or online. Lab access fee of $45 for computers applies. Canvas Course Mats $78/Cengage applies. Software fee of $10 applies.

IM 101A Word Processing Applications  
1:1:0  On Sufficient Demand  
Introduces word processing software. Emphasizes commands needed to create, format, revise, save, and print documents. Includes inserting and formatting graphics, tables, and tabs into a text document. Lab access fee of $45 for computers applies.

IM 101B Presentations Applications  
.5:.5:0  On Sufficient Demand  
Introduces presentation software. Emphasizes process of creating, formatting, revising, saving, print, and showing presentations. Includes planning a slide show, choosing appropriate designs, and using templates. Lab access fee of $45 for computers applies.

IM 101I Business Letters and Envelopes  
1:1:0  Fall, Spring  
* Prerequisite(s): Basic keyboarding skills  
Develops insights regarding lifetime careers and advancement opportunities in business, education, and industry through participation in a student organization. Helps students develop professionally through opportunities to use and apply, human relations, management, social, communicative, and organizational skills. Provides opportunities for leadership positions, committee assignments, participation in school and community activities, and competition in state and national competitive events. Requires payment of local, state, and national dues. Students may choose membership in Phi Beta Lambda, the collegiate division of FBLA (Future Business Leaders of America), or IAAP (International Association of Administrative Professionals). Designed for information management and education-oriented students but open to all students interested in lifetime business skills. Graded credit/no credit. May be repeated for a maximum of 4 credits toward graduation. Lab access fee of $45 for computers applies.

IM 101R Business Leadership  
1:1:0  Fall, Spring  
* Prerequisite(s): Instructor Approval  
For Phi Beta Lambda officers and International Association of Administrative Professionals. Includes development, organization, and direction of the Program of Work for student chapters. Graded on a credit/no credit basis. May be repeated for a maximum of 4 credits toward graduation.

IM 1900 Business Computer Proficiency  
3:3:0  Fall, Spring, Summer  
* Prerequisite(s): (IM 1010 recommended) or (Basic Computer Applications Challenge Exam with a minimum score of 80% recommended)  
Encompasses two software applications, Microsoft Excel and Microsoft Access, from a business perspective. Covers intermediate level problem solving and production skills. Uses business applications in case study settings to solve problems and accomplish tasks. In company with IM 1010, meets/exceeds the Board of Regent's Business Core Advisory Committee's requirement and the Business Computer Proficiency required by the Woodbury School of Business. May be delivered online. Lab access fee of $45 for computers applies. Canvas Course Mats $96/Pearson applies. Software fee of $16 applies.

IM 201A Spreadsheet Applications  
2:2:0  On Sufficient Demand  
* Prerequisite(s): (IM 1010 with a grade of B- or higher) or (Basic Computer Applications Exam with a score of 80% or higher) or Instructor Approval  
Introduces spreadsheet software. Emphasizes process of creating, formatting, enhancing, revising, saving, and printing spreadsheets. Stresses use of formulas and functions to solve problems. Includes creating charts using spreadsheet data. Lab access fee of $45 for computers applies.

IM 201B Database Applications  
1:1:0  On Sufficient Demand  
* Prerequisite(s): (IM 1010 with a grade of B- or higher) or (Basic Computer Applications Exam with a score of 80% or higher) or Instructor Approval  
Introduces database software. Emphasizes process of designing, modifying, and creating related tables. Includes creating forms, generating reports and labels and constructing queries. Lab access fee of $45 for computers applies.

IM 2020 Information Management Principles  
3:3:0  Fall  
* Prerequisite(s): IM 1010 or IM 2100 or Instructor Approval  
Incorporates presentation templates, clip art, charts and graphs, scanned images, sound, animations, video, and hyperlinks to create projects. Software fee of $8 applies. Lab access fee of $45 for computers applies.

IM 2030 Presentation Applications  
3:3:0  On Sufficient Demand  
* Prerequisite(s): IM 1010 or IM 2100 or Instructor Approval  
Uses a presentation software tool to create computer slide presentations, business charts and graphs, illustrations for desktop publishing, text charts, and other business-oriented publications. Incorporates presentation templates, clip art, charts and graphs, scanned images, sound, animations, video, and hyperlinks to create projects. Software fee of $8 applies. Lab access fee of $45 for computers applies.

IM 2100 Spreadsheet Applications  
3:3:0  Fall, Spring, Summer  
* Prerequisite(s): IM 1010 or IM 2100 or Instructor Approval  
Uses spreadsheet software to create and format spreadsheets. Includes creating, printing, and using advanced formulas. Stresses use of complex formulas and functions to solve problems and accomplish tasks. In company with IM 1010, meets/exceeds the Board of Regent's Business Core Advisory Committee's requirement and the Business Computer Proficiency required by the Woodbury School of Business. May be delivered online. Lab access fee of $45 for computers applies. Software fee of $18 applies. Canvas Course Mats $78/Cengage applies.

IM 2390 Advanced Spreadsheet Applications  
3:3:0  Fall, Spring, Summer  
* Prerequisite(s): IM 2100 or Instructor Approval  
Introduces advanced spreadsheet software. Emphasizes process of creating and manipulating formulas and functions, and solving complex problems. Includes creating charts using spreadsheet data. Lab access fee of $45 for computers applies. Canvas Course Mats $78/Cengage applies.

IM 2391 Advanced Database Applications  
3:3:0  Fall, Spring, Summer  
* Prerequisite(s): IM 2100 or Instructor Approval  
Introduces advanced database software. Emphasizes process of designing, modifying, and creating related tables. Includes creating forms, generating reports and labels and constructing queries. Lab access fee of $45 for computers applies. Canvas Course Mats $78/Cengage applies.

IM 2400 Image Applications  
3:3:0  Fall  
* Prerequisite(s): IM 1010 or Instructor Approval  
Explores digital image editing using Adobe Photoshop and Adobe Illustrator. Provides overview of image optimization processes for the web. Lab access fee of $45 for computers applies.

IM 2500 Graphic Applications  
3:3:0  Fall  
* Prerequisite(s): IM 1010 or IM 2100 or Instructor Approval  
Explores digital image editing using Adobe Photoshop and Adobe Illustrator. Provides an overview of image optimization processes for the web. Lab access fee of $45 for computers applies.

IM 2600 Presentation Applications  
3:3:0  Fall, Spring, Summer  
* Prerequisite(s): IM 1010 or IM 2100 or Instructor Approval  
Uses a presentation software tool to create computer slide presentations, business charts and graphs, illustrations for desktop publishing, text charts, and other business-oriented publications. Incorporates presentation templates, clip art, charts and graphs, scanned images, sound, animations, video, and hyperlinks to create projects. Software fee of $8 applies. Lab access fee of $45 for computers applies.

IM 2800 Integrated Software Projects  
3:3:0  Spring  
* Prerequisite(s) or Corequisite(s): IM 2100 and IM 2600 or Instructor Approval  
Emphasizes organizing projects, prioritizing tasks, working under time pressures, and dealing with stressful situations. Requires completion of advanced document production in an automated environment using current versions of suite software packages. Course projects stress self-motivation, acceptance of responsibility, critical thinking, and effective decision making. Designed to prepare students majoring in administrative information management to enter the work force and should be taken at the end of a program in order to grasp the concepts presented and, with little supervision, produce material acceptable on the job. Software fee of $18 applies. Lab access fee of $45 for computers applies. Software fee of $8 applies.
IM 281R Internship
1 to 8:1 to 8:0 On Sufficient Demand
* Prerequisite(s): Departmental Approval
For Information Management majors only. Provides a transition from school to work where learned theory is applied to actual practice through a meaningful on-the-job experience. Includes student, employer and coordinator evaluations, on-site work visits, and written assignments. Completers should obtain experience in establishing and accomplishing individualized work objectives that improve work performance. Internship is intended for entry level IM students who are working at that level. Credit is determined by the number of hours a student works during the semester and completion of individually set goals. May be repeated for a maximum of 9 credits toward graduation. May be graded credit/no credit.

IM 290R Current Topics in Information Management
1 to 3:0 to 3:0 to 9 Fall, Spring, Summer
* Prerequisite(s): Departmental Approval
Described for students interested in specific information management tools and concepts. Includes relevant and changing topics and tools used by business and industry. Emphasizes hands-on experience along with lectures and demonstrations. May be taken for a total of 9 credits toward graduation. Lab access fee of $45 for computers applies.

IM 3500 Desktop Publishing Applications
3:3:0 Spring
* Prerequisite(s): (IM 2100 or Instructor approval) and University Advanced Standing
For administrative information management or administrative information support majors and others interested in learning desktop publishing features. Teaches the use of current desktop publishing software in a Windows environment. Emphasizes production of complex documents for the purpose of publication. Teaches formatting and design principles through the use of theory instruction, demonstration, and hands-on experience. Lab access fee of $45 for computers applies.

IM 3600 Advanced Excel for Decision Making
3:3:0 Fall, Spring
* Prerequisite(s): IM 2100 or IM 2600 and University Advanced Standing
Uses Microsoft Excel as a reporting tool and as a modeling tool for solving business problems. Focuses on reporting, analyzing data, and building analytic models to improve operations, increase profits, or reduce costs. Builds models to help make business decisions including advanced functions, dashboards, forecasting, optimization, and simulation. Lab access fee of $45 for computers applies.

IM 3700 Database Applications
3:3:0 Spring
* Prerequisite(s): Basic keyboarding skill and University Advanced Standing
Explores creating and utilizing database files using database management software. Covers basic concepts of database management emphasizing commonly used applications. Teaches use of reports, letters, labels, custom screens, and queries in a business setting. Software fee of $10 applies. Lab access fee of $45 for computers applies.

IM 4300 Information Workflow Management
3:3:0 Spring
* Prerequisite(s): (TECH 3400 or Instructor approval) and University Advanced Standing
Emphasizes leadership, organization, problem-solving, and critical thinking skills in directing the completion of documents and projects in an automated and integrated environment. Covers a variety of leadership activities including planning and organizing new projects; directing new and ongoing operations; and using available technology to process, analyze, manage, and communicate information. Stresses leadership, self-motivation, effective decision making, and critical- and creative-thinking skills. Teaches the role of a project manager or business manager. Lab access fee of $45 for software applications.

IM 481R Internship
1 to 8:1 to 8:0 Fall, Spring, Summer
* Prerequisite(s): Instructor approval and University Advanced Standing
For Information Management majors only. Provides a transition from school to work where learned theory is applied to actual practice through a meaningful on-the-job experience. Includes student, employer and coordinator evaluations, on-site work visits, and written assignments. Provides experience in establishing and accomplishing individualized work objectives that improve work performance. Internship is intended for senior IM students who are working at that level. Credit is determined by the number of hours a student works during the semester and completion of individually set goals. May be repeated for a maximum of 9 credits toward graduation. May be graded credit/no credit.

IM 490R Advanced Topics in Information Management
1 to 3:0 to 3:0 to 9 On Sufficient Demand
* Prerequisite(s): Departmental Approval and University Advanced Standing
Includes relevant and changing topics and tools used by business and industry. Emphasizes hands-on experience. May be repeated for a maximum of 9 credits toward graduation. Lab access fee of $45 for computers applies.

IM 496R Information Management Seminar
1 to 3:1 to 3:0 to 6 On Sufficient Demand
* Prerequisite(s): IM 2300 and University Advanced Standing
Provides short courses, workshops, and special programs in information management or current business topics. May be repeated for up to 6 credits toward graduation.
INFO 2100 Computer Proficiency for Technology Professionals
3:3:0 On Sufficient Demand
* Prerequisite(s): (ENGL 1010, ENGH 1005, or higher) and (MAT 1030 or higher)

For Technology Management and Construction Management students. Provides opportunities for students to gain proficiency in using Microsoft Office (Word, PowerPoint, Excel, and Access) to enhance their business productivity and problem-solving skills. Teaches students to apply information technologies to problem situations. Meets computer proficiency requirement for Technology Management degree. Lab access fee of $45 for computers applies.

INFO 2200 Computer Programming II for IS IT
3:3:0 Fall, Spring, Summer
* Prerequisite(s): (INFO 1200 or CS 1400 with a grade of C- or better within the past seven years) or Departmental Approval
* Prerequisite(s) or Corequisite(s): MATH 1050 or higher

Focuses on object-oriented design and programming methodologies. Teaches inheritance, polymorphism, and encapsulation. Develops knowledge to abstract functionality by using interfaces. Covers collection classes, generics, exception handling, file handling, and more advanced topics such as accessing databases via LINQ, socket/network programming, and multi-threading. Lab access fee of $45 for computers applies.

INFO 2410 Database Fundamentals
3:3:0 Fall, Spring, Summer
* Prerequisite(s): (INFO 1120 recommended) or (IM 2010 recommended)

Introduces concepts and use of database management systems. Presents the relational model, Structured Query Language, database design including normalization theory, and application development tools using an enterprise-level relational database management system. Lab access fee of $45 for computers applies.

INFO 2420 Web Application Design
3:3:0 Fall, Spring, Summer
* Prerequisite(s): INFO 1120 recommended or IM 1010 recommended

Focuses on the design and construction of Web pages and maintenance of Web sites. Includes foundations in standards-based HTML and CSS. Covers code markup, design concepts and web graphics manipulation, page layout, form development, and usability and accessibility issues. Teaches use of Web authoring tools for code development and site management. Requires individual projects. May be delivered hybrid and/or online. Lab access fee of $45 for computers applies.

INFO 281R Internship
1 to 8:1 to 8:0 Fall, Spring, Summer
* Prerequisite(s): Department Approval

Provides opportunities to apply classroom theory on the job. Requires work as paid employees in a job that relates to their careers while enrolled at the College. Students meet at least monthly with the Departmental Internship Coordinator. Completers meet individually set goals. Six credits may be applied toward graduation with an AAS degree and three credits toward certificate programs. May be graded credit/no credit.

INFO 297R Independent Study
1 to 3:3:0 to 9 On Sufficient Demand
* Prerequisite(s): Departmental Approval

Offers independent study as directed in reading in individual projects. Approval for this course is at the discretion of the department chairperson. May be repeated for a maximum of 9 credits toward graduation. Lab access fee of $45 for computers applies.

INFO 3120 Management Information Systems
3:3:0 Fall, Spring, Summer
* Prerequisite(s): [MKTG 2200 or ENGL 2010] and (Computer Proficiency or INFO 1120 or IM 2010 or IM 2600 with a grade of C- or better within the past five years) or departmental approval and University Advanced Standing

Introduces the field of information systems and technology. Teaches the general business manager how to use and manage the most current information technologies (IT), Studies the Internet, Intranets, and Extranets for electronic commerce and enterprise collaboration. Examines business cases demonstrating IT contributions to competitive advantage, reengineering business processes, and decision making. May be delivered hybrid. Lab access fee of $45 for computers applies.

INFO 3130 Introduction to Applied Data Analytics
3:3:0 Fall, Spring
* Prerequisite(s): Basic statistics course (MGMT 2340 or STAT 1040 or STAT 1045 or STAT 2040 or STAT 2050 or BESC 3010), and basic knowledge of Microsoft Excel, or Departmental Approval and University Advanced Standing

Intended for people who will be working with data analysts and data scientists, managing analytics projects, or investing in analytics ventures, and aspiring data scientists. Provides opportunities for students to gain skills in data-analytic thinking required to succeed in today's analytical and data-driven economy. Introduces the basics of data management and data analytics. Covers core analytic techniques: data exploration and visualization, pattern discovery (segmentation and association), predictive modeling (decision tree, logistic regression, neural network), and forecasting. Lab access fee of $45 for computers applies.

INFO 3300 Web Systems Development
3:3:0 Fall, Spring, Summer
* Prerequisite(s): [(INFO 1200 or IT 1200 or CS 1400) and (INFO 2410 or CS 3520) both with a grade of C- or higher within the past seven years] and University Advanced Standing; INFO 2420 recommended

Emphasizes interpretation of business processes, process modeling, and implementation of the models as web applications. Instructs how to implement web solutions that use a relational database backend to manage site data using an industry-standard programming language to interact with the database to produce dynamic web content. Covers parameter passing, cookie storage, and session variables. Introduces application platforms that can be customized to new business requirements. Teaches how to use content management systems (CMS) and how to customize such systems to quickly produce web applications to meet business needs. Lab access fee of $45 applies.

INFO 3330 Client-Side Web Development
3:3:0 Fall
* Prerequisite(s): [(INFO 1200 or IT 1200 or CS 1400) and (INFO 2410 or CS 3520) both with a grade of C- or higher within the past seven years] and University Advanced Standing; INFO 2420 recommended

Teaches how to create high performance and scalable web sites using JavaScript across the client and server (full development stack). Instructs how to program directly in JavaScript as well as how to utilize JavaScript libraries and frameworks. Introduces popular JavaScript libraries to perform client-side form validation, make AJAX server calls, and deploy mobile apps based on web standards. Covers web application development using client-side frameworks that implement model view controller design patterns. Introduces server-side JavaScript tools and the NoSQL database to manage application data. Lab access fee of $45 applies.

INFO 3360 Server-Side Web Frameworks
3:3:0 Spring
* Prerequisite(s): [(INFO 1200 or IT 1200 or CS 1400) and (INFO 2410 or CS 3520) both with a grade of C- or higher within the past seven years] and University Advanced Standing; INFO 2200 recommended
* Prerequisite(s) or Corequisite(s): INFO 3300

Emphasizes web application development using modern server-side frameworks for web site architecture as well as data integration technologies. Covers server-side architectural design patterns in depth using Model View Controller (MVC) frameworks. Covers Object Relational Mapping (ORM) tools for database integration as well as techniques to secure a website from common attacks. Teaches how to implement web site authentication and authorization, form validation, web services, and introduces unit testing and test-driven development. Instructs how to package and deployment applications to a web server. Lab access fee of $45 applies.
INFO 3410
Database Systems and Warehousing
3:3:0 Fall, Spring, Summer
* Prerequisite(s): (INFO 2410 or CS 3520 with a grade of C- or higher within the past seven years) and University Advanced Standing
Covers advanced database development topics and introduces a data warehouse model designed especially to support analytics and reporting needs. Database development topics covered include transaction management, performance optimization, data loading, and the development of stored procedures, triggers, and functions. Presents the data warehouse model in contrast to existing operational transaction systems. Analyzes business reporting needs, creates models for data warehouses based on the reporting needs, and uses SQL to create and populate tables based on dimensional models. Lab access fee of $45 for computers applies.

INFO 3430
Systems Analysis and Design
3:3:0 Fall, Spring, Summer
* Prerequisite(s): [INFO 2410 and (INFO 2420 or IT 2700)] or [IM 2620 and IM 2820] each with a grade of C- or higher within the past seven years] and (MKTG 2200 or ENGL 2310) and University Advanced Standing
Introduces the systems development life cycle with a focus on systematic planning; requirements, process, and data analysis; and an overview of the design phase. Covers fundamental principles, effective processes, and techniques of project management, including scheduling and project control. Covers appropriate methodologies, tools, diagrams, and techniques for systems analysis, design, and project management. Requires working in teams to complete and present the first planning and analysis phases of a project for a client. Should be taken in the end of the junior year or first semester of the senior year. Should be taken in sequence with INFO 4430 immediately following this course. Lab access fee of $45 for computers applies.

INFO 3700
Health Informatics Fundamentals
3:3:0 Fall, Spring
* Prerequisite(s): University Advanced Standing
* Prerequisite(s) or Corequisite(s): INFO 2410 or ZOOL 1090 or HLTH 3200
Introduces the concepts, practices and ethics of health informatics. Includes a survey of current health care information systems, such as electronic health records, practice management systems, patient portals, consumer health informatics, disease registries, e-prescribing, telemedicine, and public health informatics. Surveys health care information exchange and related standards and classification systems used to implement interoperable computer-based patient records. Examines privacy and security measures, such as HIPAA, HITECH Act, and Meaningful Use and how they are related to data security, privacy and public perception. Lab access fee of $45 for computers applies.

INFO 3750
Healthcare Information Systems Applications
3:3:0 Spring
* Prerequisite(s): [(INFO 1200 or IT 1200 or CS 1400) and (INFO 2410 or CS 3520) both with a grade of C- or higher within the past seven years] and University Advanced Standing
* Prerequisite(s) or Corequisite(s): INFO 3700
Provides pragmatic coverage of the topics and resources relevant to health informatics. Examines topics such as real-world examples and skills related to the acquisition, representation, management, analysis, and use of different types of HIS data. Includes assignments, a course project, and hands-on experience in applying informatics solutions in health care settings. May be delivered hybrid. Lab access fee of $45 for computers applies.

INFO 405G
Global Ethical and Professional Perspectives in IS and IT
3:3:0 Fall, Spring, Summer
* Prerequisite(s): INFO 3430 and University Advanced Standing
Examines professional and ethical issues within the information systems and information technology fields with a global perspective. Covers ethical and legal issues IT professionals face dealing with computer and cybercrimes, privacy issues, freedom of expression, intellectual property, software development including risk analysis, and social networking. Includes career professional development through resumes, cover letters, and job interview specific to information systems and technology. Focuses on global networked readiness, digital highways, and challenges that information technology organizations face. May be delivered hybrid. Lab access fee of $45 for computers applies.

INFO 4120
Business Intelligence Systems
3:3:0 Fall, Spring
* Prerequisite(s): (INFO 3120 or INFO 3130) and University Advanced Standing; INFO 2410 recommended
Focuses on extracting business intelligence from data sets for various applications including reporting and visual analytics in multiple domains including web analytics and business analytics to aid decision-making processes. Provides hands-on experience with a variety of business intelligence software for reporting and building visualizations and dashboards. Emphasizes how to extract, present and apply business intelligence to improve business decision making. Lab access fee of $45 for computers applies.

INFO 4130
Data Science and Big Data Analytics
3:3:0 Fall, Spring
* Prerequisite(s): (STAT 2050 or MGMT 2340), INFO 3130, and University Advanced Standing
Introduces the concepts of analytics to the analysis of large data-sets, and preparation of analysis reports and presentations describing implications of findings. Uses modern tools such as SAS and R for advanced analytics and Hadoop for big data. Covers the theory and methods of advanced data analytics such as clustering, association, decision trees, time series, and text analysis. Hands-on application using a big data lifecycle lab. Lab access fee of $45 for computers applies.

INFO 4135
Data Security Analytics
3:3:0 Fall
* Prerequisite(s): IT 2700 and INFO 2410 and University Advanced Standing; (INFO 3130 and INFO 3410 recommended)
Introduces students to the concept of data analytics as applied to cyber security. Includes collection, aggregation, data mining, and analysis of various data sources. Utilizes data analytics tools that correlate data in order to identify security events that may go undiscovered by traditional detection and log analysis methods. Lab access fee of $45 for computers applies.

INFO 4300
Enterprise Web Development
3:3:0 On Sufficient Demand
* Prerequisite(s): INFO 3300 and University Advanced Standing
Addresses the challenges of developing software applications in a corporate environment. Covers methods to interact with code repositories and commit developed code. Teaches how to create web applications using test-driven development and how to write unit tests for applications. Teaches how to create and group unit tests together and how to trigger the tests automatically when code changes are made. Implements cloud deployments of web applications and teaches how to manage cloud resource usage. Lab access fee of $45 for computers applies.

INFO 4410
Database Administration
3:3:0 Fall, Spring
* Prerequisite(s): (INFO 2410 or CS 3520 within the past five years) and University Advanced Standing
Introduces students to the database administration tasks and tools of a Relational Database Management System (DBMS). Includes the core areas of installation and configuration, maintaining instances and databases, optimizing and troubleshooting, managing data, implementing security, and implementing high availability. Also, introduces NoSQL database solutions and their administration and configuration. Hands-on assignments provide students with opportunities to apply the knowledge gained in the course to a popular commercial database management system. Lab access fee of $45 for computers applies.
INFO 4415 Database Security and Auditing
3:3:0 Spring
* Prerequisite(s): (INFO 3410 or IT 3700) and University Advanced Standing

Utilizing theory, scenarios, and step-by-step examples, this course provides a strong foundation in database security and auditing. Covers the following topics in depth: the importance of database security in contemporary business environments; Security; Profiles; Password policies, privileges and roles; Virtual Private Databases; Auditing; SQL injection; Database management security issues. Lab access fee of $45 for computers applies.

INFO 4420 Mobile Application Development
3:3:0 Fall
* Prerequisite(s): (INFO 1200 or CS 1400) and (INFO 2410 or CS 3520) and University Advanced Standing; (INFO 2200 recommended or CS 1410 recommended)

Focuses on the design and development of native mobile device applications. Covers mobile interface design and development using the navigation controls specific to a popular mobile development platform. Teaches methods for integrating various device capabilities such as the accelerometer, touch interface, contacts app, image displaying capabilities, and the device's storage. Introduces apps that store and retrieve data from popular cloud data stores. Lab access fee of $45 for computers applies.

INFO 4425 Web Application Security
3:3:0 Spring
* Prerequisite(s): IT 2700 and University Advanced Standing
* Prerequisite(s) or Corequisite(s): INFO 3300

Examines web application vulnerabilities and remediation techniques. Explores various tools and techniques for mapping web applications and assessing their vulnerabilities. Includes authentication management, session management, cross-site scripting, SQL injection, and web server configuration. Emphasizes practical skills developed through extensive hands-on exercises. Lab access fee of $45 for computers applies.

INFO 4430 Systems Design and Implementation
3:3:0 Fall, Spring, Summer
* Prerequisite(s): INFO 3430 and University Advanced Standing

Continuation of INFO 3430. Focuses on the design and implementation of an information system using an agile, iterative development approach. Utilizes self-organizing teams that will deliver working software with ongoing customer collaboration. Introduces use of a source control system to manage code base, an agile project management tool, and encourages continuous integration practices. Requires that students work in teams to complete and present a working system of a project for a client. Lab access fee of $45 for computers applies.

INFO 4440 Enterprise Computing Environments
3:3:0 On Sufficient Demand
* Prerequisite(s): (ACC 2200 or INFO 3120 or TECH 4420) and University Advanced Standing

Introduces students to Enterprise Computing Environments. Focuses particularly on the configuration and information processing capabilities of e-commerce systems and Enterprise Resource Planning (ERP) systems. Requires students to install, configure, and customize the Magento e-commerce system, and to manage master data. Introduces both Microsoft Dynamics and the SAP ERP system. Uses SAP and Dynamics to demonstrate how enterprise software supports business processes such as order processing, materials requirements management, shipping, invoicing, and purchasing. Requires students to configure a fictional business using the SAP ERP system. May be delivered hybrid. Lab access fee of $45 for computers applies.

INFO 4550 Senior Project
3:3:0 On Sufficient Demand
* Prerequisite(s): INFO 3430 and University Advanced Standing

Involves the implementation of a significant information system or information technology project. Requires students to work in teams to design and develop a working information system or information technology solution for a community client. Culminates in a presentation of the completed project by project developers to project stakeholders, interested faculty, and administration. Lab access fee of $45 for computers applies.

INFO 459R Current Topics in Information Systems
3:3:0 Fall, Spring
* Prerequisite(s): (Junior Standing or Department Approval) and University Advanced Standing

Provides exposure to emerging technologies and topics of current interest in information systems. Varies each semester depending upon the changes in the information systems discipline or to address a focused area within the information systems discipline. May be repeated for a maximum of 9 credits toward graduation. Lab access fee of $45 for computers applies.

INFO 4700 Healthcare Information Systems Management
3:3:0 Fall
* Prerequisite(s): University Advanced Standing

Overviews business practices related to health care information systems. Augments the study of the science of health information with an exposure to the practices whereby health care organizations set goals and objectives, design and implement IT solutions, manage the IT function and organization, and develop technology capital and operating budgets. Presents current best practices of the business of health informatics, drawn from industry journals and business analysis consultants. Covers the management aspects of the legal and ethical issues related to HIS including applying laws related to confidentiality and data security. Lab access fee of $45 for computers applies.

INFO 481R Internship
1 to 3:1 to 3:0 Fall, Spring, Summer
* Prerequisite(s): INFO 3300, INFO 3410, INFO 3430, (INFO 3130 or INFO 3330 or INFO 3700 or IT 2700, depending on emphasis), Department Approval, and University Advanced Standing

For upper-division students in information systems. Provides an opportunity to apply classroom theory while students work as employees in a job that relates to their careers in information systems. A maximum of 3 credit hours may be counted towards graduation without prior written IS&T Department approval. May be graded credit/no credit.

INFO 489R Undergraduate Research in Information Systems
1 to 4:0:5 to 20 On Sufficient Demand
* Prerequisite(s): Department approval and University Advanced Standing

Provides the opportunity to conduct research under the mentorship of a faculty member. Practices the theoretical knowledge gained in prior major courses. Creates a significant intellectual or creative product that is characteristic of the Information Systems discipline and worthy of communication to a broader audience. May be repeated for a maximum of 6 credits toward graduation.

INFO 497R Independent Study
1 to 3:0:3 to 9 On Sufficient Demand
* Prerequisite(s): Department chair approval and University Advanced Standing

For bachelor's degree students and other interested persons. Offers independent study as directed in reading, in individual projects, at the discretion and approval of the department chairperson. May be repeated for a maximum of 9 credits toward graduation. Lab access fee of $45 for computers applies.

INFO 6420 Web and Mobile Application Security
3:3:0 Fall
* Prerequisite(s): Acceptance into Graduate Certificate or Master of Science in Cybersecurity or Departmental Approval
* Prerequisite(s) or Corequisite(s): IT 6300

Examines web application vulnerabilities and remediation techniques. Explores various tools and techniques used to perform Web application assessments. Includes cross-site scripting, SQL injection, session management, and Web server configuration. Emphasizes practical skills developed through extensive hands-on exercises.
Intelligence Studies (INTS)

INTS 1000
Introduction to Intelligence Operations Studies  
3:3:0  On Sufficient Demand  
* Prerequisite(s): Acceptance into the Intelligence Studies Program

Introduces the basic elements of intelligence: collection, analysis, dissemination, counterintelligence, and covert action. Examines the difference between intelligence and information. Describes the structure, functions, capabilities, and contributions of the national intelligence community, including Congress, the military, joint and unified commands, and law enforcement agencies. Identifies the various steps of the intelligence cycle and their purposes. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.

INTS 1010  
Counterintelligence Investigations  
3:3:0  On Sufficient Demand  
* Prerequisite(s): Acceptance into the Intelligence Studies Program

Introduces the principles, objectives, procedures, and reports used to conduct counterintelligence investigations within various investigative contexts. Assesses the planning, communicating, operating, credentialing, and investigating processes associated with counterintelligence investigations. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.

INTS 1020  
Security Programs  
3:3:0  On Sufficient Demand  
* Prerequisite(s): Acceptance into the Intelligence Studies Program

Introduces the principles, objectives, and basic procedures used to develop, account for, control, protect, and arrange for the eventual destruction of sensitive information and material. Prepares students for the investigation of security crimes and the protection of classified information and material in the custody of counterintelligence agents. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.

INTS 1030  
Intelligence Law and Administration of Justice  
1:1:0  On Sufficient Demand  
* Prerequisite(s): Acceptance into the Intelligence Studies Program

Introduces the legal principles of intelligence law as those principles apply to counterintelligence investigations and operations. Prepares students to use the principles of intelligence law and the administration of justice in the performance of their duties as counterintelligence agents. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.

INTS 1040  
Analytical Process and Product  
3:3:0  On Sufficient Demand  
* Prerequisite(s): Acceptance into the Intelligence Studies Program

Introduces the three analytical processes in the intelligence cycle: intelligence preparation of the battlefield, intelligence surveillance and reconnaissance, and targeting. Leverages analytical products associated with these processes such as PMESII, ASCOPE, Link-Pattern-Nodal analysis, threat characteristics, threat objectives, threat templates, the oil spot, and the situation template. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.

INTS 1050  
Interrogation Operations  
3:3:0  On Sufficient Demand  
* Prerequisite(s): Acceptance into the Intelligence Studies Program

Introduces the basic skills and knowledge to support the collection, dissemination, and protection of intelligence information during human intelligence operations. Applies conventional and unconventional sources with students performing as members of an interrogation team during simulated operations at both tactical and strategic levels. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.

INTS 1060  
Map Reading and Analysis  
3:3:0  On Sufficient Demand  
* Prerequisite(s): Acceptance into the Intelligence Studies Program

Applies map reading and analysis including marginal data, identification of terrain features, and calculation of azimuths. Teaches analytical skills essential to information gathering, collection capabilities, and interpretation of assets. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.

INTS 1070  
Signal Theory  
3:3:0  On Sufficient Demand  
* Prerequisite(s): Acceptance into the Intelligence Studies Program

Identifies the basic skills to intercept, analyze, and report non-communication signals. Includes the handling of classified material. Examines signal and wavelength theory, radar theory, electronic intelligence parameters, and basic collection operations. Assesses worldwide non-communications threats to include weapons systems operations, message information extraction, opposing forces operations, and situation analysis. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.

INTS 1080  
Imagery Analysis Techniques  
3:3:0  On Sufficient Demand  
* Prerequisite(s): Acceptance into the Intelligence Studies Program

Develops the basic skills to successfully employ and analyze imagery in an operational environment. Introduces basic analytical techniques, sensor capabilities and limitations, characteristics of observed operational activity, spectral and stereoscopic imagery, and full motion video. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.

INTS 1090  
Signal Analysis and Security  
3:3:0  On Sufficient Demand  
* Prerequisite(s): Acceptance into the Intelligence Studies Program

Operates the applicable software. Displays automated situation map updates. Applies electronic messaging as part of an analysis control element team. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.

INTS 1100  
Remote Sensing  
3:3:0  On Sufficient Demand  
* Prerequisite(s): Acceptance into the Intelligence Studies Program

Analyzes hardcopy and softcopy imagery collected from the electronic magnetic spectrum. Utilizes intelligence databases as well as automated processing and dissemination systems to provide valid, accurate, and timely intelligence to appropriate agencies. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.

INTS 1110  
Information Security for Intelligence Operations  
1:1:0  On Sufficient Demand  
* Prerequisite(s): Acceptance into the Intelligence Studies Program

Assesses information security as it applies to intelligence operations in the military (INFOSEC). Examines specific INFOSEC issues, to include safekeeping and storage of classified materials, application of classification markings to appropriate documents, and proper destruction of classified materials. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.

INTS 1120  
Terrorism and Counterterrorism  
3:3:0  On Sufficient Demand  
* Prerequisite(s): Acceptance into the Intelligence Studies Program

Examines the history of terrorism and the tactics and technologies used by terrorist groups. Assesses the nature of the terrorist threat and countermeasures to combat terrorism. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.
INTS 1140 Reporting of Intelligence Data
3:3:0  On Sufficient Demand
* Prerequisite(s): Acceptance into the Intelligence Studies Program

INTS 1159 Introduction to Communications for Intelligence Operations
3:2:3  On Sufficient Demand
* Prerequisite(s): Acceptance into the Intelligence Studies Program

INTS 1160 Imagery Identification
6:6:0  On Sufficient Demand
* Prerequisite(s): Acceptance into the Intelligence Studies Program

INTS 1170 Symbology
3:3:0  On Sufficient Demand
* Prerequisite(s): Acceptance into the Intelligence Studies Program

INTS 1180 Intelligence Preparation of the Battlefield
3:3:0  On Sufficient Demand
* Prerequisite(s): Acceptance into the Intelligence Studies Program

INTS 1190 Introduction to Communications for Intelligence Operations
3:2:3  On Sufficient Demand
* Prerequisite(s): Acceptance into the Intelligence Studies Program

INTS 1200 Records Management
3:3:0  On Sufficient Demand
* Prerequisite(s): Acceptance into the Intelligence Studies Program

INTS 1210 Counterintelligence Investigations II
3:3:0  On Sufficient Demand
* Prerequisite(s): Acceptance into the Intelligence Studies Program

INTS 1220 Intelligence Surveillance and Reconnaissance (ISR)
3:3:0  On Sufficient Demand
* Prerequisite(s): Acceptance into the Intelligence Studies Program

INTS 1230 Targeting
3:3:0  On Sufficient Demand
* Prerequisite(s): Acceptance into the Intelligence Studies Program

INTS 1240 Cellular Communication Fundamentals
3:3:0  On Sufficient Demand
* Prerequisite(s): Acceptance into the Intelligence Studies Program

INTS 1310 Personal Identification methods in Battlefield Forensics
2:2:0  On Sufficient Demand
* Prerequisite(s): Acceptance into the Intelligence Studies Program

INTS 1410 Battlefield Forensic Investigations I
4:3:3  On Sufficient Demand
* Prerequisite(s): Acceptance into the Intelligence Studies Program

Course Descriptions

INTS 1140 Reporting of Intelligence Data
This course identifies the essential elements of information, selection of reporting vehicles, and production of concise and timely technical summaries. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.

INTS 1159 Introduction to Communications for Intelligence Operations
This course tests basic oral communication in English for non-native speakers. Practices the fundamentals of oral communications in interpersonal, small-group, and large-group situations in the field of intelligence operations. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.

INTS 1160 Imagery Identification
This course teaches how to use aerial images to identify threat and operational equipment, including: naval vessels; fixed, swing, and rotary wing aircraft; engineer and decontamination equipment; truck models and functions; armored personnel carriers (APCs); missiles, rockets, and launch sites; communication and radar sites; artillery and artillery related equipment; and tanks and armored recovery vehicles (ARVs). Teaches how to identify from aerial imagery organizations and activity in relation to the Ground Order of Battle (GOB). This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.

INTS 1170 Symbology
This course teaches the skills necessary to translate incoming message traffic into military symbols. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.

INTS 1180 Intelligence Preparation of the Battlefield
This course identifies characteristics of the modern battlefield. Analyzes how the operational environment of the battlefield can affect friendly and threat operations. Defines the operational environment, considers the effects of weather and terrain, evaluates threat, and determines potential threat courses of action. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.

INTS 1190 Introduction to Communications for Intelligence Operations
This course tests basic oral communication in English for non-native speakers. Practices the fundamentals of oral communications in interpersonal, small-group, and large-group situations in the field of intelligence operations. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.

INTS 1200 Records Management
This course introduces the procedures, regulations, and forms used to accurately account for and manage an organization's records and funds. Provides an opportunity to practice skills as custodians in a simulated large agency operating environment. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.

INTS 1210 Counterintelligence Investigations II
This course analyzes the collection, evaluation, and use of information to produce justifiable conclusions in support of the counterintelligence mission. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.

INTS 1220 Intelligence Surveillance and Reconnaissance (ISR)
This course teaches the Intelligence, Surveillance, and Reconnaissance (ISR) process across the scope of military operations from Joint Task Force level to Battalion level. Identifies the functions of the ISR process and its relationship to decision making. Requires development of an ISR plan, dissemination of information, and implementation of the plan. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.

INTS 1230 Targeting
This course examines the targeting process across the scope of intelligence operations. Introduces the Decide, Detect, Deliver, and Assess (D3A) methodology of targeting. Assesses the functions associated with the D3A methodology and how these functions interact with the decision-making process. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.

INTS 1240 Cellular Communication Fundamentals
This course teaches cellular technologies used around the world to deploy enhanced wireless capabilities. Covers the evolution of cellular capabilities to current protocols and standards. Provides a comprehensive overview of the options available in handling voice and data transmitted through wireless technologies. Explores variations among Frequency Division Multiple Access (FDMA), Time Division Multiple Access (TDMA), Code Division Multiple Access (CDMA), and Global System for Mobile communications (GSM). This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.

INTS 1310 Personal Identification methods in Battlefield Forensics
This course explores the methods used to identify individuals based on evidence collected at an incident scene in a battlefield environment. Emphasizes the identification, collection, and preservation of biological evidence for criminal investigations and legal procedures. Examines specific topics including: fingerprints, facial recognition, bloodstain analysis, and biometrics. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.

INTS 1410 Battlefield Forensic Investigations I
This course examines battlefield forensic investigation procedures and techniques. Emphasizes incident scene management and the identification, collection, and preservation of material evidence related to the manufacture and use of improvised explosive devices (IEDs). This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.
INTS 1420 Battlefield Forensic Investigations II
4:3:0 On Sufficient Demand
* Prerequisite(s): Acceptance into the Intelligence Studies Program

Explores the technical aspects of the collection and preservation of physical evidence from a battlefield environment. Emphasizes the processes involved in identifying persons assembling improvised explosive devices (IEDs), and the tactics and techniques used in the employment of those devices. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.

INTS 2000 Collection Operations
4:4:0 On Sufficient Demand
* Prerequisite(s): Acceptance into the Intelligence Studies Program

Teaches source collection operations in the operational cycle, including: collection planning, identifying, assessing, recruiting, training, tasking, interviewing, and providing source operations support. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.

INTS 2020 Force Protection Operations and Support
3:3:0 On Sufficient Demand
* Prerequisite(s): Acceptance into the Intelligence Studies Program

Teaches how to assimilate, analyze, and distribute multidiscipline counterintelligence products in support of tactical force protection. Explores specific areas of interest, to include counterintelligence operations in a deployed environment and current threat assessment technology. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.

INTS 2030 Combating Terrorism
3:3:0 On Sufficient Demand
* Prerequisite(s): Acceptance into the Intelligence Studies Program

Teaches the history and development of terrorism. Includes recognizing the phases of a terrorist incident and how to understand a terrorist group’s structure, degree of support, and scope of operations. Teaches use of basic analytical tools available to combat terrorism. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.

INTS 2040 Interrogation and Interview Techniques
3:3:0 On Sufficient Demand
* Prerequisite(s): Acceptance into the Intelligence Studies Program

Describes how to prepare for and question a source, collect all information of intelligence value, and report this information in the proper format. Identifies appropriate approach and questioning techniques, effective listening and note-taking methods, source screening procedures, and proper exploitation phases to collect intelligence information. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.

INTS 2090 Automated Intelligence Systems
3:3:0 On Sufficient Demand
* Prerequisite(s): Acceptance into the Intelligence Studies Program

Explores the use of automated intelligence systems in the field of intelligence operations. Assesses the basic system operations and conventions. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.

INTS 2100 Intermediate Remote Sensing
3:3:0 On Sufficient Demand
* Prerequisite(s): Acceptance into the Intelligence Studies Program

Applies knowledge of intelligence operations and how they use observed activity in the analysis of hardcopy and softcopy imagery. Utilizes imagery databases to provide organizations with accurate and timely reports, intelligence briefs, and assessments based on given scenarios and Priority Intelligence Requirements (PIRs). This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.

INTS 2110 Military Decision Making Process
3:3:0 On Sufficient Demand
* Prerequisite(s): Acceptance into the Intelligence Studies Program

Assesses the mission analysis and the military decision-making process. Reviews situation analysis, problem analysis, and decision analysis. Examines the relationship between the decision maker and the decision environment. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah. May be repeated for a total of nine credits toward graduation.

INTS 2120 Intermediate Imagery Analysis Techniques
3:3:0 On Sufficient Demand
* Prerequisite(s): Acceptance into the Intelligence Studies Program

Develops ability to apply photogrammetry techniques, equipment identification techniques, and softcopy and hardcopy imagery manipulation techniques to produce accurate imagery analyses and activity assessments. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.

INTS 2140 Reporting of Intelligence Data II
3:3:0 On Sufficient Demand
* Prerequisite(s): Acceptance into the Intelligence Studies Program

Teaches skills for the preparation of intelligence reports using pertinent information to satisfy the appropriate requirements. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.

INTS 2150 Briefing Skills II
3:3:0 On Sufficient Demand
* Prerequisite(s): Acceptance into the Intelligence Studies Program

Demonstrates advanced preparation and delivery of briefings in the intelligence operations field. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah. May be repeated for a total of nine credits toward graduation.

INTS 2200 Reporting of Intelligence Data III
3:3:0 On Sufficient Demand
* Prerequisite(s): Acceptance into the Intelligence Studies Program

Examines tactical human intelligence (HUMINT) issues for the advanced intelligence operations practitioner maintaining a HUMINT-specific occupational specialty. Teaches how to plan and prepare timely and effective intelligence reports in both urban and rural environments. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.

INTS 2210 Counterintelligence Investigations III
3:3:0 On Sufficient Demand
* Prerequisite(s): Acceptance into the Intelligence Studies Program

Focuses on how to understand the objectives, apply the procedures, and produce the reports used in advanced counterintelligence investigations. Expands knowledge and abilities in the planning, communicating, operating, credentialing, and investigating processes related to advanced counterintelligence investigations. Designed for the tactical human intelligence (HUMINT) practitioner. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.

INTS 2230 Intelligence Law and Administration of Justice II
1:1:0 On Sufficient Demand
* Prerequisite(s): Acceptance into the Intelligence Studies Program

Examines the legal principles and regulations of intelligence law as they apply to counterintelligence investigations and operations. Teaches the application of principles of intelligence law and of the administration of justice in the performance of duties as tactical human intelligence (HUMINT) practitioners. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.
INTS 2240
Force Protection Operations and Support II
3:3:0  On Sufficient Demand
* Prerequisite(s): Acceptance into the Intelligence Studies Program
Teaches the human intelligence (HUMINT) practitioner improved methods to assimilate, analyze, and distribute multidiscipline human products in support of tactical force protection operations. Focuses on human intelligence operations in a tactically deployed environment. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.

INTS 2250
Analytical Process and Product II
3:3:0  On Sufficient Demand
* Prerequisite(s): Acceptance into the Intelligence Studies Program
Explores the tactical human intelligence (HUMINT) field. Teaches the preparation of analytical tools to assess a combat environment. Analyzes conventional and unconventional threat forces, various types of organizations, and associated weapons and equipment, as well as the tactics, techniques, and procedures of groups or forces identified as posing a threat to U.S. interests. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.

INTS 2260
Interrogation and Interviewing Techniques II
3:3:0  On Sufficient Demand
* Prerequisite(s): Acceptance into the Intelligence Studies Program
Provides advanced preparation for questioning a human intelligence source and to collect and report information that is of intelligence value. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.

INTS 2410
Management of Intelligence and Counterintelligence Operations I
4:4:0  On Sufficient Demand
* Prerequisite(s): Acceptance into the Intelligence Studies Program
Studies the organizational management of intelligence and counterintelligence operations. Examines the theoretical and practical perspectives of managing increasing levels of responsibility, with emphasis on problem-solving and decision-making processes and on the role of the leader. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.

INTS 2420
Management of Intelligence and Counterintelligence Operations II
4:4:0  On Sufficient Demand
* Prerequisite(s): Acceptance into the Intelligence Studies Program
Explores the managerial challenges related to the multidisciplinary roles in intelligence and counterintelligence operations. Emphasizes the assessment of external and internal environments, strategic initiatives, and communication techniques, and the allocation and coordination of personnel and resources. This course is limited to students participating in the Utah National Guard’s (UNG) Military Intelligence Education Program at Camp Williams in Bluffdale, Utah.

Integrated Studies (IS)

IS 2000
Knowledge Integrated
3:3:0  Fall, Spring
Introduces questions or problems whose answers or solutions require the integration of ideas and disciplines. Focuses on ideas from a variety of cultural perspectives. Covers how important thinkers through history have approached difficult questions in ways that integrated disciplines. Provides the opportunity to complete written assignments based on research.

IS 300R
Introductory Topics in Integrated Studies
3:3:0  Fall, Spring, Summer
* Prerequisite(s): (PHIL 2050 or 205H or 205G) and (ENGL 2010 or 201H) and University Advanced Standing
Introduces a variety of topics crossing disciplines in science, religion, philosophy, history, literature, business, technology and the arts. Topics vary from semester to semester, but course remains modular in structure. Research and writing intensive. Requires final research paper. Involves writing across the curriculum. May be repeated for a maximum of 12 credits toward graduation.

IS 350R
Topics in Integrated Studies
3:3:0  Fall, Spring, Summer
* Prerequisite(s): (PHIL 2050 or 205H or 205G) and (ENGL 2010 or 201H) and University Advanced Standing
Examines a particular interdisciplinary topic; topics vary from semester to semester. Presents topics that cross one or more fields of academic specialty from the arts and sciences. Includes lecture, reading, discussion and research. Research and writing intensive, requires final research paper. May be repeated for a maximum of 12 credits toward graduation.

IS 495R
Interdisciplinary Lecture Series
1:1:0  On Sufficient Demand
* Prerequisite(s): University Advanced Standing
Explores connections between various academic disciplines. Provides a broadly based look at a range of disciplines. May be repeated for a maximum of 3 credits toward graduation.

IS 4980
Integrated Studies Capstone I
3:3:0  Fall, Spring, Summer
* Prerequisite(s): IS 300R or IS 350R; Junior or Senior Standing in the Integrated Studies bachelor degree; and University Advanced Standing
Focusing on a major research paper integrating the student’s two emphases. Addresses theoretical and practical problems associated with research and writing that combine disciplines. Includes work with a committee throughout the semester. Taken first semester in the two-semester capstone sequence.

IS 4990
Integrated Studies Capstone II WE
3:3:0  Fall, Spring, Summer
* Prerequisite(s): IS 4980 and University Advanced Standing
Focuses on a major research paper (senior thesis) integrating the student’s two or more emphases. Addresses theoretical and practical problems associated with research and writing that combine disciplines. Includes work with a committee throughout the semester, which must approve the written thesis. Requires the student to orally present the thesis in a formal defense. Taken second semester in a two-semester capstone sequence.

Information Technology (IT)

IT 1200
Scripting for Administrators
3:3:0  On Sufficient Demand
* Prerequisite(s): MAT 1010 or higher; INFO 1120 recommended
Introduces the fundamentals of script design and implementation with an emphasis on the automation of administrative tasks. Covers modular script design and the use of file input and output. Emphasizes interaction of a script with other scripts, utilities, and the operating system to form more complex systems. Manipulates values of variables (both numbers and strings). Introduces simple GUI interfaces. Lab access fee of $45 for computers applies.

IT 1510
Introduction to System Administration--Linux/UNIX
3:3:0  Fall, Spring, Summer
* Prerequisite(s): INFO 1120 recommended
Introduces the UNIX Operating System using the popular Linux OS. Explores the Linux file system, Linux administration, OS utilities, and program features and uses. Aids the student in the development, understanding, and working knowledge of the details of the Linux Operating System, memory organization, disk architectures, and demand paged virtual memory. Includes OS installation, user creation, rights management, loading daemons, and server best practices. Lab access fee of $45 for computers applies.
IT 1600 Computer Architecture and Systems Software
3:3:0 Fall, Spring, Summer
* Prerequisite(s): INFO 1120 recommended

Provides a thorough grounding in computer hardware, system software, and contemporary information system architecture. Examines hardware structure, operating systems theory, and systems software as part of a technical foundation for enterprise systems development and IT infrastructure procurement and management. Lab access fee of $45 for computers applies. Canvas Course Mat $153/TstOut applies.

IT 1700 Cybersecurity Essentials
3:3:0 On Sufficient Demand

For non-Information Technology and non-Information Systems majors. Introduces cybersecurity and its role in society in a nontechnical way. Explores cybersecurity topics, including protecting accounts, securing data, and avoiding phishing scams. Discusses current hacking and cybersecurity events. Identifies best practices for personal cybersecurity. Provides basic introduction to cybersecurity tools. Lab access fee of $45 for computers applies.

IT 2400 Voice and Data Cabling Fundamentals
3:3:0 Fall, Spring, Summer
* Prerequisite(s): INFO 1120 or INFO 1200 or CS 1030 or CS 1400

For students interested in the physical aspects of voice and data networking and installation. Focuses on cabling issues related to data and voice connections and provides an understanding of the industry and its worldwide standards. Covers types of media and cabling, physical and logical networks, as well as signal transmission. Focuses on best practices and safety using copper and fiber-optic cabling. Requires students to install a complete cable infrastructure for a simulated telecommunications room. Enforces industry and worldwide standards. Requires a community project and portfolio based on voice/data cabling skills. Lab access fee of $45 for computers applies.

IT 2530 Introduction to System Administration--Windows Client
3:3:0 Fall, Spring
* Prerequisite(s): IT 1600

Introduces operation management of operating systems using Microsoft Windows. Introduces installation methods and troubleshooting, hardware device installation and management, storage management, disaster recovery planning and management. Aids the student in the development, understanding, and working knowledge of the Windows networking framework including peer-to-peer, workgroups, user profiles, domains, NTFS, and share-level permissions. Lab access fee of $45 for computers applies.

IT 2600 Data Communication Fundamentals
3:3:0 Fall, Spring, Summer
* Prerequisite(s): INFO 1120 recommended or IT 1600 recommended or CS 1400 recommended

Provides an in-depth knowledge of data communications and enterprise networking including networking and telecommunications technologies, hardware, and software. Emphasizes underlying technologies and protocols. Design topics include wired and wireless architectures; topologies, models, standards and protocols; and operation of bridges, routers, switches, and gateways. Includes lab assignments covering TCP/IP implementations. May be delivered hybrid. Lab access fee of $45 for computers applies.

IT 2700 Information Security Fundamentals
3:3:0 Fall, Spring, Summer
* Prerequisite(s): IT 2600 or CS 2600; (IT 1600 recommended)

Explores introductory information and cybersecurity concepts: security technologies, methodologies, and tools. Topics include security models, risk assessment, threat analysis, attack types, encryption technologies, security implementation, access controls, business continuity, and security policies. Discusses current topics, trends, and career opportunities in information security. Includes lab assignments covering information security principles. Software fee of $18 applies. Lab access fee of $45 for computers applies.

IT 2800 Computer Forensic Fundamentals
3:3:0 Fall, Spring, Summer
* Prerequisite(s): INFO 1120 or INFO 1200 or CS 1030 or CS 1400

Explores procedures for identification, preservation, and extraction of electronic evidence. Emphasizes auditing and investigation of network and host system intrusions, analysis and documentation of information gathered, and preparation of expert testimonial evidence. Examines forensic tools and resources for system administrators and information system security officers. Includes ethics, law, policy, and standards concerning digital evidence. Requires lab experience and a research paper or project. Lab access fee of $45 for computers applies.

IT 281R Internship
1 to 4:1 to 4:0 On Sufficient Demand
* Prerequisite(s): Department Approval

Provides opportunities to apply classroom theory on the job. Requires work as paid employees in a job that relates to their careers while enrolled at the university. Requires students to meet at least monthly with the Departmental Internship Coordinator. Requires completers to meet individually set goals. May be repeated for a maximum of three credits toward graduation. May be graded credit/no credit.

IT 3350 Intellectual Property and Cyber Law
3:3:0 Fall, Summer

Explores the legal and policy issues associated with the Internet and cyberspace. Studies case law, statutes, regulations, and constitutional provisions that affect people and businesses interacting through computers and the Internet. Covers intellectual property (trademarks, copyrights, patents, trade secrets, and unfair competition) and examines legal requirements to create, register and protect intellectual property rights. Focuses on e-commerce, online contracts, cybercrimes, torts, and privacy issues pertaining to technology. Lab access fee of $45 for computers applies.

IT 3400 Data Cabling Signal Characteristics
3:3:0 Fall, Summer
* Prerequisite(s): ENGL 2010 and (PRLG 1000 or CS 1030 or INFO 1120 or LEGL 3000) and University Advanced Standing

Provides exposure to current and emerging information technologies. May be used to provide content to prepare students to take industry-recognized IT certification exams, such as CompTIA Linux+, CompTIA A+, Apple Certified Professional, Certified Fiber Optic Technician, IC3, CompTIA Network+, CompTIA CTP+, Access Data Certified Examiner, MCSA, Cisco CompTIA Security+, Certified Ethical Hacker, etc. Varies each semester. May be repeated for a maximum of 6 credits toward graduation. Lab access fee of $45 for computers applies.

IT 3500 Current Topics in Information Technology
1 to 3:1 to 3:0 On Sufficient Demand
* Prerequisite(s): Departmental Approval

Provides exposure to current and emerging information technologies. May be used to provide content to prepare students to take industry-recognized IT certification exams, such as CompTIA Linux+, CompTIA A+, Apple Certified Professional, Certified Fiber Optic Technician, IC3, CompTIA Network+, CompTIA CTP+, Access Data Certified Examiner, MCSA, Cisco CompTIA Security+, Certified Ethical Hacker, etc. Varies each semester. May be repeated for a maximum of 6 credits toward graduation. Lab access fee of $45 for computers applies.

IT 3600 Advanced Topics in Computer Forensics
3:3:0 Fall, Winter, Spring

Explores introductory information and cybersecurity concepts: security technologies, methodologies, and tools. Topics include security models, risk assessment, threat analysis, attack types, encryption technologies, security implementation, access controls, business continuity, and security policies. Discusses current topics, trends, and career opportunities in information security. Includes lab assignments covering information security principles. Software fee of $18 applies. Lab access fee of $45 for computers applies.

IT 3700 Introduction to Cybersecurity
3:3:0 Fall, Winter, Spring

Explores introductory information and cybersecurity concepts: security technologies, methodologies, and tools. Topics include security models, risk assessment, threat analysis, attack types, encryption technologies, security implementation, access controls, business continuity, and security policies. Discusses current topics, trends, and career opportunities in information security. Includes lab assignments covering information security principles. Software fee of $18 applies. Lab access fee of $45 for computers applies.

IT 3800 Internship
1 to 3:1 to 3:0 On Sufficient Demand
* Prerequisite(s): Department Approval

Provides opportunities to apply classroom theory on the job. Requires work as paid employees in a job that relates to their careers while enrolled at the university. Requires students to meet at least monthly with the Departmental Internship Coordinator. Requires completers to meet individually set goals. May be repeated for a maximum of three credits toward graduation. May be graded credit/no credit.

IT 399R Internship
1 to 3:1 to 3:0 On Sufficient Demand
* Prerequisite(s): Departmental Approval

Provides opportunities to apply classroom theory on the job. Requires work as paid employees in a job that relates to their careers while enrolled at the university. Requires students to meet at least monthly with the Departmental Internship Coordinator. Requires completers to meet individually set goals. May be repeated for a maximum of three credits toward graduation. May be graded credit/no credit.

IT 4000 Advanced Topics in Systems Security
3:3:0 Fall, Spring

Explores procedures for identification, preservation, and extraction of electronic evidence. Emphasizes auditing and investigation of network and host system intrusions, analysis and documentation of information gathered, and preparation of expert testimonial evidence. Examines forensic tools and resources for system administrators and information system security officers. Includes ethics, law, policy, and standards concerning digital evidence. Requires lab experience and a research paper or project. Lab access fee of $45 for computers applies.

IT 4100 Introduction to Cybersecurity--Advanced Topics
3:3:0 Fall, Winter, Spring

Explores introductory information and cybersecurity concepts: security technologies, methodologies, and tools. Topics include security models, risk assessment, threat analysis, attack types, encryption technologies, security implementation, access controls, business continuity, and security policies. Discusses current topics, trends, and career opportunities in information security. Includes lab assignments covering information security principles. Software fee of $18 applies. Lab access fee of $45 for computers applies.

IT 411R Internship
1 to 4:1 to 4:0 On Sufficient Demand
* Prerequisite(s): Department Approval

Provides opportunities to apply classroom theory on the job. Requires work as paid employees in a job that relates to their careers while enrolled at the university. Requires students to meet at least monthly with the Departmental Internship Coordinator. Requires completers to meet individually set goals. May be repeated for a maximum of three credits toward graduation. May be graded credit/no credit.

IT 412R Internship
1 to 4:1 to 4:0 On Sufficient Demand
* Prerequisite(s): Department Approval

Provides opportunities to apply classroom theory on the job. Requires work as paid employees in a job that relates to their careers while enrolled at the university. Requires students to meet at least monthly with the Departmental Internship Coordinator. Requires completers to meet individually set goals. May be repeated for a maximum of three credits toward graduation. May be graded credit/no credit.
IT 3510
Advanced System Administration--Linux/UNIX
3:3:0  Fall, Spring, Summer
* Prerequisite(s): [INFO 1200 and IT 1510 and (IT 2600 or CS 2600)] all with a grade of C- or higher within the past five years and University Advanced Standing

Explores enterprise systems administration using the UNIX/Linux operating system. Students learn advanced administrative tasks including server installation, network configuration and user management, file management, network services deployment, server security, backup and recovery, shell scripting, source compilation, performance monitoring and tuning, troubleshooting, and managing hardware and component changes. Requires a community project and portfolio based on advanced server management skills. Lab access fee of $45 for computers applies.

IT 3530
Advanced System Administration--Windows Server
3:3:0  Fall, Spring, Summer
* Prerequisite(s): [INFO 1200 and IT 2530 and (IT 2600 or CS 2600)] all with a grade of C- or higher within the past five years and University Advanced Standing

Explores enterprise systems administration using the Microsoft Windows Server operating system. Students learn advanced administrative tasks including server installation; hardware change management; software application management; network configuration and user management; file management; printing; network services deployment; server security; backup and recovery; scripting; performance monitoring, tuning, and troubleshooting. Lab access fee of $45 for computers applies.

IT 3540
Mac OS and Server Support
3:3:0  Fall, Spring, Summer
* Prerequisite(s): [INFO 1200 and IT 1510 and (IT 2600 or CS 2600)] all with a grade of C- or higher within the past five years and University Advanced Standing

Provides an in-depth exploration of the Mac OS X, and provides the skills to troubleshoot and correct problems that may arise by users. Teaches installation and configuration of a Mac OS X Server. Involves implementing and maintaining a Mac server in a network, including file sharing, mail, web, and wikis. Software fee of $14 applies. Lab access fee of $45 for computers applies.

IT 3600
Internetworking and Router Management
3:3:0  Fall, Spring, Summer
* Prerequisite(s): [(INFO 1200 or CS 1400) and (IT 2600 or CS 2600)] all with a grade of C- or higher within the past five years and University Advanced Standing

Teaches the theory and implementation skills and techniques needed to configure, troubleshoot and support reliable TCP/IP internetworks. Discusses security and management issues. Offers the opportunity to build an internetwork with cables, network cards, and routers. Emphasizes the analysis and design of networks in organizations. Includes lab assignments covering TCP/IP implementations and router configurations. Lab access fee of $45 for computers applies.

IT 3650
Information Storage and Management
3:3:0  On Sufficient Demand
* Prerequisite(s): IT 1600, IT 2600, and University Advanced Standing

Presents concepts, principles, and deployment considerations across all technologies that are used for storing and managing information. Describes challenges and solutions for data storage and data management, intelligent storage systems, and storage networking. Studies backup, recovery, and archive processes. Discusses business continuity, disaster recovery, storage security and virtualization, and managing and monitoring the storage infrastructure. Software fee of $192 applies. Lab access fee of $45 for computers applies.

IT 3700
Information Security--Network Defense and Countermeasures
3:3:0  Fall, Spring, Summer
* Prerequisite(s): IT 1510, IT 2700, (IT 3510 or IT 3530), and University Advanced Standing
* Prerequisite(s) or Corequisite(s): IT 3600

Examines advanced information security concepts through an applied viewpoint. Extends the student's understanding of security issues through hands-on application of real-world techniques and use of current security software. Topics include legal/ethical issues, use of security tools, network reconnaissance, password brute-force attacks, firewall configuration, Honey pot deployment, intrusion analysis/detection, server hardening, and penetration testing. Guest lecturers provide insight into current trends in advanced security issues. Software fee of $18 applies. Lab access fee of $45 for computers applies.

IT 385R
Current Topics in Information Technology
3:3:0  On Sufficient Demand
* Prerequisite(s): (Junior Standing or Department Approval) and University Advanced Standing

Provides exposure to emerging technologies and topics of current interest in information technology. Varies each semester depending upon the changes in the information technology discipline or to address a focused area within the information technology discipline. May be repeated for a maximum of 9 credits toward graduation. Lab access fee of $45 for computers applies.

IT 4500
Enterprise Network Architectures and Administration
3:3:0  Fall, Spring, Summer
* Prerequisite(s): IT 3600 and University Advanced Standing

Examines management of resources used in enterprise computing environments from a practical, applied viewpoint. Extends the student's understanding of these concepts through hands-on application of real-world network, server, and software management techniques and addresses the problems associated with providing a secure, stable, reliable enterprise computing infrastructure. Includes principles of IT enterprise infrastructure management; configuration, analysis, and troubleshooting of virtual servers; redundancy and failover; directory service integration, access control and security; uptime monitoring and notification; backup and recovery; Storage Area Networking; Cloud computing platform choices, functionality, cost, deployment, flexibility, and adaptability. Lab access fee of $45 for computers applies. Software fee of $118 applies.

IT 4600
Enterprise Cybersecurity Management
3:3:0  Fall, Spring, Summer
* Prerequisite(s): IT 2700 and University Advanced Standing
* Prerequisite(s) or Corequisite(s): INFO 3430

Provides perspective of key issues involved in IT activities across the organizational and technical security landscape. Examines management methodologies, staffing, and operational issues. Teaches use of financial analysis and decision-making methodologies to aid investment decisions at the operational, functional, and strategic levels. Illustrates use of risk assessment and contingency planning as applied to business continuity and disaster recovery strategies. Includes the use of Service Level Agreement for managing both internal and external relationships. Lab access fee of $45 for computers applies.

IT 4750
Network Security and Operations Capstone
3:3:0  Fall, Spring, Summer
* Prerequisite(s): University Advanced Standing
* Prerequisite(s) or Corequisite(s): IT 4700

Senior-level, capstone experience course. Enhances student cyber security knowledge with operational and business applications. Focuses on integrating cyber security principles as an organic part of an organization's processes. Covers barriers to implementing security policy, building a business case for cyber security, and incorporating cyber security into project management and software life cycles. Requires student project presentations. Lab access fee of $45 for computers applies.
IT 4760
Case Studies in Cyber Security
3:3:0  On Sufficient Demand

* Prerequisite(s): IT 2700 and University Advanced Standing

Discusses current trends and issues in cyber security. Updated regularly to reflect global events related to cyber security. Topics include data breaches, cyber warfare, emerging threats. Emphasis on the changing and transformative nature of cyber security threats, including geographical, institutional, and cultural evolution. Guest lecturers from industry will provide students with perspectives on the state of cyber security. Examines real-world examples of the application of cyber security principles and requires critical analysis of each case. Lab access fee of $45 for computers applies.

IT 4800
Advanced Mobile Devices Forensics
3:3:0  Spring

* Prerequisite(s): IT 2800 and University Advanced Standing

Discusses devices that can store digital information such as cell phones, tablets, digital camera/camcorders, thumb drives and memory cards. Focuses on lab investigations of one or more digital media through image acquisition, data analysis, and assembly of a final written report of findings. Provides opportunities to use multiple software tools in device acquisition and analysis. Covers processes and procedures through mock investigations. Lab access fee of $45 for computers applies.

IT 481R
Internship
1 to 8:1 to 8:0  Fall, Spring, Summer

* Prerequisite(s): IT 2800 and University Advanced Standing

For Information Technology bachelor's degree students. Provides opportunities to apply upper-division classroom theory while students work as employees in a job that relates to their careers. Meet periodically with a Departmental Internship Coordinator. Credit is determined by the number of hours a student works during the semester and completion of individually set goals that relate to the student's selected emphasis. Prior written department chair approval is required to apply more than three credits toward a Bachelor of Science Degree in Information Technology. May be graded credit/no credit.

IT 4850
Digital Forensics Investigations
3:3:0  On Sufficient Demand

* Prerequisite(s): IT 2800 and University Advanced Standing

Is a senior capstone course for students in the Computer Forensics emphasis. Covers one or more investigations from start to finish. Integrates knowledge and skills from previous C.J., FSCI, and IT courses in this culminating experience. Lab access fee of $45 for computers applies.

IT 489R
Undergraduate Research in Information Technology
1 to 4:0:5 to 20  On Sufficient Demand

* Prerequisite(s): Department approval and University Advanced Standing

Provides the opportunity to conduct research under the mentorship of a faculty member. Practices the theoretical knowledge gained in prior major courses. Creates a significant intellectual or creative product that is characteristic of the Information Technology discipline and worthy of communication to a broader audience. May be repeated for a maximum of 6 credits toward graduation.

IT 497R
Independent Study
1 to 3:0:3 to 9  On Sufficient Demand

* Prerequisite(s): Department chair approval and University Advanced Standing

For bachelor degree students and other interested persons. Offers independent study as directed in reading, in individual projects, at the discretion and approval of the department chairperson. May be repeated for a maximum of 9 credits toward graduation.

IT 6300
Principles of Cybersecurity
3:3:0  Fall

* Prerequisite(s): Acceptance into Graduate Certificate or Master of Science in Cybersecurity or Departmental Approval

Provides foundational knowledge of cybersecurity for graduate-level studies. Covers information security theories, terminology, and implementation. Includes networking and system fundamentals, cryptography, malware, authentication, authorization, access control, physical security, attacker profiles, appropriate threat responses, and the human elements of cybersecurity. Introduces multiple aspects of cybersecurity and various career paths within the field.

IT 6330
Cybersecurity Operations
3:3:0  Fall

* Prerequisite(s): Acceptance into Graduate Certificate or Master of Science in Cybersecurity or Departmental Approval

Focuses on operational aspects of cybersecurity. Includes incident response, network monitoring, change management, configuration management, and resource protection. Emphasizes the role of cybersecurity in the enterprise. Integrates sound cybersecurity principles into various aspects of IT operations. Includes information on secure server administration and open source security software. Teaches cybersecurity standards for government and industry sources and the application of those standards.

IT 6350
Law/Ethics/Privacy in Cybersecurity
3:3:0  Spring

* Prerequisite(s): Acceptance into Graduate Certificate or Master of Science in Cybersecurity or Departmental Approval

Explores legal, ethical, and privacy issues as they apply to cybersecurity. Includes the legalities and ethics of hacking, corporate information security and use policies, and the government's role in cybersecurity. Emphasizes the roles and responsibilities of individual cybersecurity practitioners as well as corporate entities, including vulnerability disclosure and correcting software defects. Teaches privacy policies and regulations as they relate to cybersecurity and information systems.

IT 6370
Penetration Testing and Vulnerability Assessment
3:3:0  Summer

* Prerequisite(s): Acceptance into Graduate Certificate or Master of Science in Cybersecurity or Departmental Approval

Explores advanced topics in ethical hacking, penetration testing, vulnerability assessment, and other offensive network and system techniques. Teaches network scanning, target identification, application exploitation, antivirus evasion, physical security, social engineering, phishing, and privilege escalation. Contains hands-on labs providing experience from the perspective of an attacker.

IT 6660
Advanced Network Forensics
3:3:0  On Sufficient Demand

* Prerequisite(s): Acceptance into Graduate Certificate or Master of Science in Cybersecurity or Departmental Approval

Provides a standard methodology for conducting digital forensic analysis in a network environment. Teaches the importance of network forensic principles and development of an understanding of the technologies, protocols, laws, regulations, ethics, and procedures for network forensics. Incorporates demonstrations and laboratory exercises covering the identification, acquisition, authentication, preservation, analysis, and reporting of evidence for prosecution purposes.

IT 6740
Advanced Network Defense and Countermeasures
3:3:0  Spring

* Prerequisite(s): Acceptance into Graduate Certificate or Master of Science in Cybersecurity or Departmental Approval

Explores advanced topics in network defense, server hardening, vulnerability assessment, and mitigation scanning. Teaches students about network scanning, asset identification, Linux and Windows server hardening, anti-malware tools, intrusion detection, physical security, perimeter security, and cybersecurity awareness training. Contains hands-on labs providing experience from the perspective of a defender.
IT 6750 Reverse Engineering and Malware Analysis 3:3:0 Spring
* Prerequisite(s): Acceptance into Graduate Certificate or Master of Science in Cybersecurity or Departmental Approval
* Prerequisite(s) or Corequisite(s): IT 6300
Explores the analysis tools and techniques for identifying malicious programs and recovering compromised operating systems. Provides a standard methodology for reverse engineering and eradicating malware. Includes setting up isolated malware labs and utilizing a selected set of forensic tools, such as system and network monitoring utilities, disassemblers, and debuggers for analyzing malware characteristics and the impact that malware may have on compromised systems.

IT 6760 Case Studies in Cybersecurity 3:3:0 On Sufficient Demand
* Prerequisite(s): Acceptance into Graduate Certificate or Master of Science in Cybersecurity or Departmental Approval
* Prerequisite(s) or Corequisite(s): IT 6300
Discusses current trends and issues in cybersecurity. Reflects current global events related to cybersecurity, including data breaches, cyber warfare, and emerging threats. Emphasizes the changing and transformative nature of cybersecurity threats, including geographical, institutional, and cultural evolution. Provides guest lecturers from industry with perspectives on the state of cybersecurity. Examines real-world examples of the application of cybersecurity principles and requires critical analysis of each case.

IT 6770 Cybersecurity Management 3:3:0 Summer
* Prerequisite(s): IT 6300 or Departmental approval
Teaches management skills applicable to cybersecurity, includes governance models, business continuity, disaster recovery, risk management, organizational security, cybersecurity life cycle management, and interactions between information technology and business units. Focuses on policies, procedures, and guidelines based on industry and government standards to fulfill legal, regulatory, and operational requirements.

IT 6780 Secure Coding 3:3:0 Fall
* Prerequisite(s): IT 6300 or departmental approval
Focuses on fundamentals of secure coding and current topics in application security. Includes the implementation of secure development lifecycle principles, identifying and mitigating issues in existing applications, and common security issues. Covers the most frequently encountered application security risks and how to address each of them. Includes web applications, mobile applications, and traditional desktop applications.

IT 6900 Cybersecurity Capstone 3:3:0 Spring
* Prerequisite(s): IT 6330, IT 6350, IT 6370, IT 6740, and IT 6770
Provides culmination of cybersecurity in a self-directed research or practical project that showcases student's mastery of cybersecurity topics. Provides an opportunity to conduct research and/or implement systems that incorporate topics from previous courses. Requires students to present their work at the end of the semester.

Japanese (JPNS)

JPNS 1010 Beginning Japanese I 4:4:1 Fall, Spring
Writing and reading Hiragana and Katakana, listening, speaking in the basic grammar structure, expressing opinions and describing things in a limited situation. Lab access fee of $10 applies.

JPNS 1020 Beginning Japanese II 4:4:1 Fall, Spring
* Prerequisite(s): Students need equivalent knowledge of JPNS 1010
Reviews and builds further language skills upon the grammar, reading, writing, and conversation skills learned in the first year courses. Lab access fee of $10 applies.

JPNS 115R Japanese Conversation I 1:1:0 Fall, Spring
* Prerequisite(s): Students need equivalent knowledge of JPNS 1020
Offers novice Japanese speakers opportunities to enhance their speaking proficiency in the target language by focusing on oral verbal production. Teaches how to improve authentic pronunciation, reduce errors in authenticity of language structure, generate thought in the target language spontaneously, and sharpen listening comprehension for natural conversational flow. Contrast with all other first year courses which must strive to produce mastery of the whole range of language acquisition components, including writing, grammar, etc. Facilitates lowering the affective filter when conversing in the target language by increasing the frequency of speech opportunities and defusing concern for such matters as spelling, etc. Increases mastery of lexical items through increased frequency of oral usage. May be repeated for a maximum of 3 credits toward graduation.

JPNS 1500 The Art of Japanese Calligraphy 2:2:0 On Sufficient Demand
Introduces the origin of the art of calligraphy, the reasons why calligraphy developed and became so popular in Japan, works done by famous calligraphers, how to handle a brush and India ink, and how to write letters with a brush. Demonstrates the proper usage of the brush, correct stroke orders, and develops the skills of writing letters (start from level 1- easy to level 8- difficult) with a brush.

JPNS 2010 Intermediate Japanese I 4:4:1 Fall, Spring
* Prerequisite(s): Students need equivalent knowledge of JPNS 1020
Reviews and builds further language skills upon the grammar, reading, writing (including Kanji knowledge), and conversation skills learned in the previous JPNS 1010, 1020, and 2010. Introduces reading of a variety of texts in Japanese. Lab access fee of $10 applies.

JPNS 2110 Conversational Japanese 3:3:0 On Sufficient Demand
* Prerequisite(s): Students need equivalent knowledge of JPNS 1020
Emphasizes conversation in real-life situations that may be encountered in Japan. Focuses on vocabulary and structures. Introduces a variety of readings and multimedia materials and promotes oral proficiency.

JPNS 215R Japanese Conversation II 1:1:0 Fall, Spring
* Prerequisite(s): Students should have equivalent knowledge of JPNS 1020
Offers lower division / novice Japanese speakers opportunities to enhance their speaking proficiency in the target language by focusing on oral verbal production. Teaches how to improve authentic pronunciation, reduce errors in authenticity of language structure, generate thought in the target language spontaneously as a substitute for translation, sharpen listening comprehension, and develop conversational strategies such as circumlocution and managing a conversation with useful expressions for starting a conversation, gaining time to think, helping the other speaker, seeking agreement, etc. Contrasts with all other first year courses which must strive to produce mastery of the whole range of language acquisition components, including writing, grammar, etc. Facilitates lowering the affective filter when conversing in the target language by increasing the frequency of speech opportunities and defusing concern for such matters as spelling, etc. Increases mastery of lexical items through increased frequency of oral usage. May be repeated for a maximum of 3 credits toward graduation.

JPNS 251G Introduction to Japanese Culture and Society 3:3:0 Fall
Introduces Japanese culture and society by exploring its history, religion, government, customs and traditions. Analyzes and evaluates the differences and similarities between Japanese and American cultures. Taught in English and little or no Japanese language skill required. Fulfills the requirements for a G/C course.
LANG 1000  English Literacy for Deaf Students  5:5:0  On Sufficient Demand  
* Prerequisite(s): Deaf students fluent in American Sign Language  
Individually tailored English course taught entirely in ASL. Covers a variety of topics to prepare Deaf students for entrance to courses satisfying college English requirements. Topics of study, which vary by semester and by student need, include grammar, usage, reading, comprehension and analysis, sentence construction, paragraph composition, and thematic approaches to writing. Uses students' experience with American Sign Language and Deaf culture as the basis for instruction in English as a Second Language.

LANG 281R  Language Internship  1 to 8:1 to 8:0  On Sufficient Demand  
* Prerequisite(s): Department approval  
Provides supervised, practical, and professional experience for students preparing for careers related to languages. May be repeated for a maximum of eight credit hours. May be graded credit/no credit.

LANG 291R  Independent Study  1 to 3:1 to 3:0  On Sufficient Demand  
* Prerequisite(s): JPNS 3050 and University Advanced Standing  
Designed primarily for students who will travel or live in a foreign country for a period of time and want to participate in an instructor-directed academic experience worthy of one to three hours of credit. May also be used similarly for directed studies, either on or off campus, dealing with a foreign language or culture.

LANG 3000  Cross-listed with: ANTH 3000  LH Language and Culture  3:3:0  Fall, Spring, Summer  
* Prerequisite(s): ENGL 1010 or ENGH 1005, (ANTH 101G or any foreign language 2010 course), Sophomore status, and University Advanced Standing  
Introduces cultural linguistics. Analyzes features of human languages that make possible semantic universality. Examines distinction between phonetic and phonemic units. Explores relationship between language and culture. Studies how language shapes culture and how culture shapes language.

LANG 3010  Introduction to Linguistics  3:3:0  Fall  
* Prerequisite(s): University Advanced Standing  
Focuses on achieving an understanding of language as a group of distinct yet complementary systems which interact to enable human communication, e.g., phonology, morphology, syntax, semantics, and pragmatics. Introduces implications of how languages reflect the cultures in which they are used, and discusses how language is learned, processed and interpreted and how languages change over time.

LANG 312R  Cross-listed with: CINE 312R  National Cinema History  3:3:0  Fall, Spring  
* Prerequisite(s): ENGL 2010 and University Advanced Standing  
Covers a single national cinema tradition from the early days of film to the present. Explores representative films from a nation's cinematic chronology, considering major themes, movements, controversies, and artists. Considers social and political contexts as related to the national film output. May be repeated for a maximum of 9 credits toward graduation.

LANG 4200  Methods of Teaching a Foreign Language  3:3:0  Fall  
* Prerequisite(s): (Matriculation into any secondary education bachelor degree program or departmental approval) and University Advanced Standing  
For those who plan to certify to teach a foreign language. Addresses learning approaches, methods, evaluation procedures, text analysis, and other techniques for teaching and evaluating language learning. Includes discussion about professional organizations and other resources in the field. Taught entirely in English.

LANG 450R  Translation Technology  3:3:0  On Sufficient Demand  
* Prerequisite(s): (CHIN 3050 or FREN 3050 or GER 3050 or JPNS 3050 or PORT 3050 or RUS 3050 or SPAN 3050) and University Advanced Standing  
Provides the environment for students to acquire speed and proficiency in translation. Allows students to become proficient in the use of CAT (Computer Assisted Translation) tools. Prepares students and translators of any language to obtain an SDL Trados Certification. Includes class discussion, translation practice, analysis of translation practice and a student portfolio. May be repeated for a maximum of 9 credits toward graduation.

LANG 481R  Language Internship  1 to 8:1 to 8:0  On Sufficient Demand  
* Prerequisite(s): Departmental Approval and University Advanced Standing  
Provides students real-world, closely-supervised work experiences in positions directly related to their language studies. Includes a theoretical component such as, but not limited to, papers, projects, completion of reading assignments, tests, journaling, field studies, etc. Students desiring to do language internships must get department approval and must meet with a faculty sponsor to determine individual credit hours and requirements. May be repeated for a maximum of 8 credits toward graduation. May be graded credit/no credit.

LANG 490R  Special Topics in Languages  1 to 3:1 to 3:0  On Sufficient Demand  
* Prerequisite(s): Department Approval and University Advanced Standing  
Provides an opportunity to undertake a well-defined project or academically rigorous independent research in languages. May include formal instruction and collaboration with faculty and other students. May be repeated for a total of 6 credits toward graduation.
Latn (LATN)

LATN 1010
Beginning Latin I
4:4:0
Fall
Allows students the opportunity to study Latin at the introductory level. Focuses primarily on Ancient Latin. Develops basic Latin reading skills with the help of grammar and translation exercises. Profoundly strengthens students’ general understanding of grammar, syntax, and word formation in any language, particularly Romance and Germanic languages (including English).

LATN 1020
Beginning Latin II
4:4:0
Spring
* Prerequisite(s): LATN 1010 or equivalent
Allows students the opportunity to continue to study Latin at the introductory level. Focuses primarily on Ancient Latin. Develops more advanced Latin reading skills, with the help of grammar and translation exercises. Study of Latin profoundly strengthens students’ general understanding of grammar, syntax, and word formation in any language, particularly Romance and Germanic languages (including English).

LATN 2010
Intermediate Latin I
4:4:0
Fall
* Prerequisite(s): LATN 1020 or equivalent
Studies Latin at the intermediate level. Develops more advanced reading skills through the translation of selected Classical Latin texts.

LATN 2020
Intermediate Latin II
4:4:0
On Sufficient Demand
* Prerequisite(s): LATN 2010 or equivalent
Continues study of Latin at the intermediate level. Develops more advanced reading skills through the translation of selected Classical Latin texts.

LATN 3010
Readings in Latin
3:3:0
On Sufficient Demand
* Prerequisite(s): LATN 2020 or equivalent and University Advanced Standing
Studies Latin beyond the intermediate level through translation of original Classical or Medieval Latin texts.

Legal Studies (LEGL)

LEGL 1110
Civil Litigation
4:4:0
Fall, Spring
* Prerequisite(s): PRLG 1000 and (ENGL 1010 or ENGH 1005)
Overviews court system, emphasizing the Utah State Courts, civil procedural and evidentiary rules, and stages of civil litigation. Emphasizes the paralegal’s role in investigation, preparation, and resolution of lawsuits. Lab access fee of $30 for computers applies.

LEGL 2000
Culture of Law
2:2:0
Fall, Spring
Survey course that discusses the impact of earning a law degree; professional options open to a JD; and how to manage one’s career; through lectures on pertinent issues, opportunities to interview lawyers, by film, speakers sharing their experience about different aspects of their career, opportunities to read and write on legal issues.

LEGL 2350
Evidence
3:3:0
Fall, Spring
* Prerequisite(s): PRLG 1000
Examines the admissibility of evidence in both a civil and criminal trial context. Studies the Federal Rules of Evidence, and the privileges, challenges, advancements in technology and emerging issues in the use of evidence in American courts.

LEGL 258R
Special Topics in Legal Studies
3:3:0
Spring
* Prerequisite(s): PRLG 1000
Provides exposure to emerging topics of current interest in the Legal field. Topics vary each semester. May be repeated for a maximum of 6 credits toward graduation.

LEGL 2830
Legal Studies Capstone
3:3:0
Fall, Spring
* Prerequisite(s): LEGL 1110, LEGL 3000
A capstone course for the Associate’s Degree in Legal Studies. Provides integration of all functional paralegal skills via mock trials. Requires the student to write a legal memorandum analyzing a particular case and to present a legal issue to the class.

LEGL 290R
Law Society
1:1:0
Fall, Spring
Elective credit for students interested in law or law-related professions. Provides a program of activity relating to current legal issues, encouraging social awareness and developing law and civic consciousness. Students arrange for guest speakers from the legal and criminal justice professions to present information concerning their professions. Teaches leadership skills by serving on committees. Pass/Fail grade issued. Paralegal majors and criminal justice majors may repeat this course for a total of three elective credits towards graduation. Each student must participate in the service project and fundraiser for a passing grade.

LEGL 3000
Business Law
3:3:0
Fall, Spring, Summer
* Prerequisite(s): (ENGL 1010 or ENGH 1005 or appropriate test scores) and University Advanced Standing
For School of Business students and others desiring a more complete understanding of business law. Presents the American legal system, constitutional law, statutory law, common law, and administrative law and alternatives to courts. Discusses crimes, torts, negligence, contracts, negotiable instruments, and contractual relationships. May be delivered online. Lab access fee of $30 for computers applies.

LEGL 300H
Business Law
3:3:0
Fall, Spring
* Prerequisite(s): (ENGL 1010 or ENGH 1005 or appropriate test scores) and University Advanced Standing
For School of Business students and others desiring a more complete understanding of business law at an honors level. Presents the American legal system, constitutional law, statutory law, common law, and administrative law and alternatives to courts. Discusses crimes, torts, negligence, contracts, negotiable instruments, and contractual relationships. Lab access fee of $30 for computers applies.

LEGL 3130
Real Estate Principles and Finance
3:3:0
Fall, Spring
* Prerequisite(s): ENGL 1010 or ENGH 1005 or equivalent.
Includes the nature of real property, estates in land, transfer of real property rights, encumbrances, public restrictions, and contracts. Discusses ownership in real estate, settlement, taxation, real estate finance, math in real estate applications, and real estate valuation and appraisal. Lab access fee of $30 for computers applies.

LEGL 3140
Real Estate Law
3:3:0
Fall, Spring
* Prerequisite(s): ENGL 1010 or ENGH 1005 or equivalent.
Explores the legal implications of ownership of real property, including property management and new construction. Also covers federal and Utah-specific law, and Utah licensing testing and review. Lab access fee of $30 for computers applies.

LEGL 3150
Survey of Dispute Resolution
3:3:0
Fall
* Prerequisite(s): (PRLG 1000 or LEGL 3000 or PSY 1010 or SOC 1010 or SW 1010) and University Advanced Standing
Offers an introduction to alternative dispute resolution processes, including negotiation, mediation, arbitration, and litigation. Studies conflict resolution theory and explores contemporary dispute resolution policy issues. Involves participation in simulations of various dispute resolution processes, including interviewing and counseling, negotiation, mediation, and arbitration.

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LEGL 3170 Real Estate Contracts and Agency
3:3:0 Spring
* Prerequisite(s): ENGL 1010 or ENGH 1005 or equivalent

Explores the intricacies of contracts and agency relationships in real estate transactions, including uniform real estate contracts, agency agreements and principles, the Utah standard Real Estate Purchase Contract, and other related issues.

LEGL 3210 Interviewing and Investigations
3:3:0 Spring
* Prerequisite(s): University Advanced Standing

Overview of how to conduct a factual investigation in various contexts, including criminal and civil cases, with particular emphasis on interviewing witnesses. Includes technology-driven investigative tools, social media, the Freedom of Information Act and other resources, and the ethical and legal limitations on investigative techniques.

LEGL 3250 (Cross-listed with: POLS 3250) Introduction to Law and Politics
3:3:0 Fall, Summer
* Prerequisite(s): (POLS 1010 or POLS 1100) and University Advanced Standing

Examines the relationship between law and politics. Addresses the impact politics have on the judiciary and the strengths and weaknesses of law as a means of social order. Focuses on general issues of legal and political theory and the social and political function of law.

LEGL 3310 Marketing Law
3:3:0 Spring
* Prerequisite(s): (ENGL 1010 or ENGH 1005) and University Advanced Standing

For School of Business marketing students and others desiring a more complete understanding of marketing law. Broadly presents the American legal system, with special attention to issues in constitutional law, statutory law, common law, and administrative law and alternatives to courts with respect to marketing. Discusses crimes, torts, negligence, contracts, negotiable instruments, intellectual property, and contractual relationships.

LEGL 3410 Mediation and Negotiation
3:3:0 Fall
* Prerequisite(s): PRLG 1000 or LEGL 3000) and University Advanced Standing

Prepares students to knowledgeably understand and participate on a basic level in the process of mediation and negotiation in a legal context. Focuses on conceptual knowledge of both process and practical skills and effectiveness as a mediator and negotiator.

LEGL 3530 (Cross-listed with: HR 3530) Employment and Labor Law
3:3:0 Fall
* Prerequisite(s): ENGL 2010 and University Advanced Standing

Covers employment and labor law, cases, and policy. Includes employment discrimination along with labor relations statues exploring the link between employment discrimination and traditional labor relations law. Presents tools necessary to formulate and write policy for profit and non-profit organizations. Includes lecture, class discussions, case studies, a service learning project, and guest speakers. Lab access fee of $30 for computers applies.

LEGL 3650 Tort Law
3:3:0 Spring
* Prerequisite(s): PRLG 1000, ENGL 2010, and University Advanced Standing

Provides instruction in theory and practice of tort and injury law. Successful completers should know and use legal vocabulary and demonstrate an understanding of tort and injury law. Lab access fee of $30 for computers applies.

LEGL 3760 Law Practice Management
3:3:0 Fall
* Prerequisite(s): Matriculation into any Legal Studies Program and University Advanced Standing

Covers management principles applicable in modern law practice from solo practice to large mega firms. Provides students with parameters and policies of the business of law to understand why law firms conduct business differently from other industries. Introduces students to administrative and substantive functions and procedures common to a law office that make the student's transition into legal employment easier. Encourages ethical considerations and acquisition of skills required by law firms that use efficient systems and procedures.

LEGL 3890 Certified Legal Assistant Preparation
3:3:0 Spring
* Prerequisite(s): ENGL 2010 and University Advanced Standing

Acquaints students with Certified Legal Assistant exam prerequisites. Reviews all required sections of the exam which include legal terminology, communications, legal ethics, judgment and analytical ability, legal research, human relations and interviewing techniques, and general law. Also covers some elective law portions of the exam which might include administrative law, bankruptcy law, business organizations, contract law, criminal law, estate planning and probate, family law, litigation, real estate law. Successful completers should be prepared to sit for the CLA Exam.

LEGL 4000 Advanced Business Law and E-Commerce
3:3:0 Spring
* Prerequisite(s): LEGL 3000 and University Advanced Standing

Examines contemporary issues in business law, with an emphasis in e-commerce and business in a digital environment. Studies secured transactions, business associations, investor protection, consumer protection and government regulation in an increasingly global and interconnected business environment. Recommended for students interested in graduate school, especially in law or business.

LEGL 4100 Advanced Mediation
3:3:0 Spring
* Prerequisite(s): LEGL 3410 and University Advanced Standing

Prepares students to perform at an advanced level in the mediation process. Builds on the fundamentals learned in the basic course, improves knowledge, and sharpens practical skills and effectiveness as a mediator. Uses an interactive-workshop format that blends theory with simulated class role-play.

LEGL 4130 Bankruptcy and Collections
3:3:0 Spring
* Prerequisite(s): University Advanced Standing
* Prerequisite(s) or Corequisite(s): LEGL 3000

Covers collection of debts and the discharge of certain financial obligations in bankruptcy, including Chapter 7, 11, and 13 filings. Utilizes lecture and practical experience in the preparation of collection and bankruptcy documents. Teaches basic collections, bankruptcy law, drafting collections, bankruptcy pleadings, and schedules. Lab access fee of $30 for computers applies.

LEGL 4150 Will Trusts and Probates
3:3:0 Fall
* Prerequisite(s): Matriculation into any Woodbury School of Business program and University Advanced Standing

Examines purpose and methods of estate planning, emphasizing the drafting of simple wills, trusts, and other estate planning documents. Covers testamentary and non-testamentary disposition of property, taxation, interstate succession, medical directives, power of attorney and probate and estate administration processes. Lab access fee of $30 for computers applies.

LEGL 4160 Contract Law
3:3:0 Spring
* Prerequisite(s): LEGL 3000, ENGL 2010, and University Advanced Standing

Provides a functional approach to the Law of Contracts. Teaches contract problems and defenses through case study method. Lab access fee of $30 for computers applies.
LEGL 418G
International Law
3:3:0 Spring
* Prerequisite(s): ENGL 2010 and University Advanced Standing
Examines the emergence of International Law as a reflection of changing social, cultural, religious perspectives in an increasingly global community. Studies the global relationships between states, businesses, and individuals, and the resolution of disputes on an international level, including special problems in international crime, jurisdiction, courts, contracts and trade, intellectual property, and other current issues.

LEGL 4190
Constitutional Law
3:3:0 Fall, Spring
* Prerequisite(s): Matriculation into any Legal Studies major and University Advanced Standing
Examines the relationships between individual liberty and the government, including the separation of powers, federalism and limits on the government's ability to restrict individual freedom. Studies the Bill of Rights, with emphasis on the first, fourth, and fourteenth amendments, and their practical effect in civil and criminal cases.

LEGL 4200
Domestic Mediation
3:3:0 Fall
* Prerequisite(s): (LEGL 3410 or instructor approval) and University Advanced Standing
Prepares students to understand and participate knowledgeably and effectively in the process of domestic mediation. Improves conceptual knowledge about and understanding of the domestic mediation process as well as improving practical negotiation and mediation skills. Utilizes a highly interactive workshop format that blends theory with practice.

LEGL 430G
International Business Law
3:3:0 Fall
* Prerequisite(s): ENGL 2010, Junior Standing, and University Advanced Standing
Examines current issues in international and comparative business law, including environmental protections, multinational enterprises, foreign investment, banking, labor, financing and taxation. Studies how culture, values, religion, and other factors affect law in a global business context. Recommended for students graduate work, especially in business or law. Fulfills Global/Intercultural Requirement.

LEGL 4830
Legal Capstone Course
3:3:0 Fall, Spring
* Prerequisite(s): LEGL 1110, LEGL 3000, and University Advanced Standing
A capstone course for the Bachelor's Degree in Legal Studies. Provides integration of all functional paralegal skills via mock trials. Requires the student to write a legal memorandum analyzing a particular case and to present a legal issue to the class.

LEGL 498R
Directed Research
1 to 3:1 to 3:0 Fall, Spring, Summer
* Prerequisite(s): ENGL 2010, Department Approval, and University Advanced Standing
Studies the process of researching and writing for scholarly publication. Includes understanding the concepts of scholarly conversation, managing scholarship, choosing a topic, identifying appropriate journals, using exemplars, creating a title and abstract, making an outline, developing an introduction and conclusion, writing the body of the paper, and then revising, submitting, and finally publishing in a scholarly journal. May be repeated for a maximum of 6 credits toward graduation.

LEGL 6000
Legal Challenges in Modern Business
1.5:1.5:0
* Prerequisite(s): Acceptance into the Woodbury School of Business MBA program
Examines contemporary issues in business law, with an emphasis in e-commerce and business in a digital environment. Studies secured transactions, business associations, investor protection, consumer protection and government regulation in an increasingly global and interconnected business environment. Recommended for business executives and managers.

Mathematics (MATH)

MATH 100R
Math Leap
1:1:0 Fall, Spring, Summer
For students in STEM and related fields who desire to improve problem-solving skills and/or placement level in preparation for STAT 1040 and higher-numbered MATH courses. Addresses unique strengths and weaknesses of students, by providing group problem solving activities along with an individual assessment and study plan for mastering target material. Requires mandatory class attendance and a minimum number of hours per week logged into a preparation module, with progress monitored by a mentor. May be repeated for a maximum of 4 credits toward graduation. May be graded credit/no credit.

MATH 1050
College Algebra
4:4:0 Fall, Spring, Summer
* Prerequisite(s): Within the past two years one of the following: MAT 1000 or MAT 1010 with a grade of C or better or appropriate math placement score.
Includes inequalities, functions and their graphs, polynomial and rational functions, exponential and logarithmic functions, systems of linear and nonlinear equations, matrices and determinants, arithmetic and geometric sequences, and the Binomial Theorem. May be delivered hybrid and/or online.

MATH 1055
College Algebra with Preliminaries
5:5:0 Fall, Spring, Summer
* Prerequisite(s): Within the past two years one of the following: MAT 1000 or MAT 1010 with a grade of C or better or appropriate math placement score.
Includes inequalities, functions and their graphs, polynomial and rational functions, exponential and logarithmic functions, systems of linear and nonlinear equations, matrices and determinants, arithmetic and geometric sequences, and the Binomial Theorem. May be delivered hybrid and/or online. Lab access fee of $30 applies.

MATH 1060
Trigonometry
3:3:0 Fall, Spring, Summer
* Prerequisite(s): Within the past two years: MAT 1050 or MAT 1055 with a grade of C or higher or appropriate math placement score.
Includes the unit circle and right triangle definitions of the trigonometric functions, graphing trigonometric functions, trigonometric identities, trigonometric equations, inverse trigonometric functions, the Law of Sines and the Law of Cosines, vectors, complex numbers, polar coordinates, and rotation of axes.

MATH 1080
Precalculus
5:5:0 Fall, Spring, Summer
* Prerequisite(s): Within the past two years, one of the following: MAT 1000 or MAT 1010 with a grade of B or better or an appropriate math placement score.
Is an accelerated version of MATH 1050 and MATH 1060. Includes functions and their graphs including polynomial, rational, exponential, logarithmic, trigonometric, and inverse trigonometric functions. Covers inequalities, systems of linear and nonlinear equations, matrices, determinants, arithmetic and geometric sequences, the Binomial Theorem, the unit circle, right triangle trigonometry, trigonometric equations, trigonometric identities, the Law of Sines, the Law of Cosines, vectors, complex numbers, polar coordinates, and conic sections.

MATH 1090
College Algebra for Business
3:3:0 Fall, Spring, Summer
* Prerequisite(s): Within the past two years one of the following: MAT 1000 or MAT 1010 with a grade of C or better or appropriate math placement score.
Uses linear, quadratic, power, polynomial, rational, exponential, logarithmic, and logistic functions to analyze business applications such as market equilibrium, rates of change, cost-benefit analysis, and inflation. Includes systems of linear and non-linear equations and inequalities, matrices and matrix equations, sequences and series, and financial mathematics.

MATH 1100
Introduction to Calculus
4:4:0 Fall, Spring, Summer
* Prerequisite(s): Within the past two years: MAT 1050 or MAT 1055 or MAT 1080 with a grade of C or better or appropriate math placement score.
Provides an overview of the basic concepts and techniques of differential and integral calculus. Features applications in business, economics, and the life, social, and physical sciences. Includes optimization techniques in multivariable differential calculus.
Course Descriptions

MATH 1210 Calculus I 5:5:0 Fall, Spring, Summer
* Prerequisite(s): One of the following within the past two years: (MATH 1050 or MATH 1055) and MATH 1060, each with a grade of C or higher; OR MATH 1080 with a grade of C or higher; OR appropriate placement by math placement test.
Covers limits, continuity, differentiation, applications of differentiation, integration, and applications of integration, including derivatives and integrals of polynomial functions, rational functions, exponential functions, logarithmic functions, trigonometric functions, inverse trigonometric functions, hyperbolic functions. Is a prerequisite for calculus-based sciences.

MATH 121H Calculus I 5:5:0 Fall, Spring
* Prerequisite(s): One of the following within the past two years: (MATH 1050 or MATH 1055) and MATH 1060, each with a grade of C or higher; OR MATH 1080 with a grade of C or higher; OR appropriate placement by math placement test.
Covers limits, continuity, differentiation, applications of differentiation, integration, and applications of integration, including derivatives and integrals of polynomial functions, rational functions, exponential functions, logarithmic functions, trigonometric functions, inverse trigonometric functions, and hyperbolic functions. Is a prerequisite for calculus-based sciences. Is an honors course with student projects.

MATH 1220 Calculus II 5:5:0 Fall, Spring, Summer
* Prerequisite(s): MATH 1210 or MATH 121H with a grade of C or higher
Includes integration techniques, arc length, area of a surface of revolution, moments and centers of mass, sequences and series, parametrization of curves and polar coordinates, vectors in 3-space, and quadric surfaces.

MATH 122H Calculus II 5:5:0 Fall, Spring, Summer
* Prerequisite(s): MATH 1210 or MATH 121H with a grade of C or higher
Includes integration techniques, arc length, area of a surface of revolution, moments and centers of mass, sequences and series, parametrization of curves and polar coordinates, vectors in 3-space, and quadric surfaces. Honors course which requires a student project.

MATH 2000 Algebraic Reasoning with Modeling QL 3:3:0 Fall, Spring, Summer
* Prerequisite(s): Within the past two years, one of the following: MAT 1000 or MAT 1010 with a grade of C or better or an appropriate math placement score.
Presents the basic ideas of sets and functions in the context of and motivated by modeling bivariate data. Includes basic set theory such as unions, intersections, Venn diagrams, etc. Includes the basic ideas and the algebra of functions including polynomial, exponential, and logarithmic functions. Also includes some basic combinatorics and counting principles as well as arithmetic and geometric sequences. Culminates in a pictorial introduction to the basic ideas of calculus presented with minimal computation.

MATH 2010 Mathematics for Elementary Teachers I 3:3:0 Fall, Spring, Summer
* Prerequisite(s): Within the past two years: MATH 1050 or MATH 1055 or MATH 2000 with a grade of C or better or appropriate math placement score.
Is for pre-elementary education majors. Includes problem solving, sets, numeration systems, arithmetic of whole numbers, integers, rational numbers, real numbers, elementary number theory, ratios, proportions, decimals, and percents.

MATH 2020 Mathematics for Elementary Teachers II 3:3:0 Fall, Spring, Summer
* Prerequisite(s): MATH 2010 with a grade of C or higher
Is for pre-elementary education majors. Includes topics on probability, statistics, geometry, and measurement.

MATH 2210 Calculus III 3:3:0 Fall, Spring, Summer
* Prerequisite(s): MATH 1220 or MATH 122H with a grade of C or higher
Includes partial derivatives, gradient, Lagrange multipliers, multiple integrals, line integrals, Green's Theorem, surface integrals, the Divergence Theorem, and Stokes' Theorem.

MATH 221H Calculus III 3:3:0 Fall, Spring
* Prerequisite(s): MATH 1220 or MATH 122H with a grade of C or higher
Includes partial derivatives, gradient vectors, Lagrange multipliers, multiple integrals, line integrals, Green's Theorem, surface integrals, the Divergence Theorem, and Stokes' Theorem. Is an honors course which includes a student project.

MATH 2250 Differential Equations and Linear Algebra 4:4:0 On Sufficient Demand
* Prerequisite(s): MATH 1220 or MATH 122H with a grade of C or higher

MATH 2270 Linear Algebra 3:3:0 Fall, Spring
* Prerequisite(s): MATH 1220 or MATH 122H with a grade of C or higher
Includes matrices and systems of equations, determinants, vector spaces, linear transformations, orthogonality, and eigenvalues and eigenvectors.

MATH 2280 Ordinary Differential Equations 3:3:0 Fall, Spring
* Prerequisite(s): MATH 2210 or MATH 221H with a grade of C or higher

MATH 281R Cooperative Work Experience 2 to 9:2 to 9:0 Fall, Spring, Summer
* Prerequisite(s): Approval of Cooperative Coordinator
Designed for mathematics majors. Provides paid work experiences in the student's major. Course content is individualized, with the student setting the objectives by consulting with a faculty coordinator and the on-the-job supervisor. Credit is determined by the number of hours the student works during the semester. Repeatable for a maximum of 16 credits toward graduation. May be graded credit/no credit.

MATH 290R Topics in Mathematics 3 to 5:3 to 5:0 On Sufficient Demand
* Prerequisite(s): Departmental approval
Studies a chosen topic in mathematics; topic will vary depending upon student demand and course development needs. May be taken more than once for different topics and for a maximum of 6 credit hours counted toward graduation.

MATH 3000 History of Mathematics 3:3:0 Spring
* Prerequisite(s): MATH 2210 or MATH 221H with a grade of C or higher and University Advanced Standing
Provides a survey of the history of mathematics.

MATH 3010 Methods of Secondary School Mathematics Teaching 3:3:0 Fall
* Prerequisite(s): MATH 2210 or MATH 221H with a grade of C or higher and EDSC 4550 with a grade of B- or higher and University Advanced Standing
Is for Mathematics Education majors. Presents different methods of teaching mathematical ideas at the secondary school level. Includes classroom instruction, student presentations, and field experiences. Studies various techniques of assessment and classroom management.

MATH 3020 Computer Based Mathematics for Secondary School Mathematics Teachers 3:3:0 Fall
* Prerequisite(s): (MATH 2210 and MATH 2270 each with a grade of C or higher) and University Advanced Standing; MATH 2280 with a grade of C or higher is recommended
For Mathematics Education majors. Presents one or more popular mathematical computer software packages. Includes mathematical problem solving and presentations of mathematical concepts using a computer as an aid. Introduces appropriate programming language.
Course Descriptions

MATH 3030
Algebra for Secondary Mathematics Teaching
3:3:0 Spring
* Prerequisite(s): Math 1210 with a grade B- or higher and University Advanced Standing and Mathematics Department Adviser Approval

For Mathematics Education Majors: Includes the exploration of important conceptual underpinnings, common misconceptions and students' ways of thinking, appropriate use of technology, and instructional practices to support and assess the learning of algebra. Teaches algebra as an extension of number, operation, and quantity, various ideas of equivalence as it pertains to algebraic structures, patterns of change as covariation between quantities; connections between representations (tables, graphs, equations, geometric models, context); and the historical development of content and perspectives from diverse cultures. Focuses on deeper understanding of rational numbers, ratios and proportions, meaning and use of variables, functions (e.g., exponential, logarithmic, polynomials, rational, quadratic), and inverses.

MATH 3100
Foundations of Geometry
3:3:0 Fall, Spring
* Prerequisite(s): MATH 2270 with a grade of C or higher and MATH 2210 with a grade of C or higher and University Advanced Standing

* Prerequisite(s) or Corequisite(s): MATH 2280

Introduces logic and mathematical proof. Offers an axiomatic development of Euclidean and non-Euclidean geometries.

MATH 3200
Foundations of Analysis
3:3:0 Spring, Summer
* Prerequisite(s): MATH 3100 with a grade of C or higher and MATH 2280 with a grade of C or higher and University Advanced Standing

Covers material from beginning analysis including the axioms of the real numbers, sequences, mathematical induction, limits, topology of the real line, continuity, differentiation, and integration.

MATH 3210
Complex Variables
3:3:0 Fall
* Prerequisite(s): MATH 2210 or MATH 221H with a grade of C or higher and University Advanced Standing

Introduces complex analysis. Includes algebra of complex numbers, analytic functions, mapping properties of elementary functions, the Cauchy integral formula, complex series, residues, and conformal mapping.

MATH 3250
Introduction to Advanced Calculus
3:3:0 Fall, Spring
* Prerequisite(s): MATH 2210 or MATH 221H with a grade of C or higher and MATH 2270 with a grade of C or higher and University Advanced Standing

* Prerequisite(s) or Corequisite(s): MATH 2280

Introduces mathematical logic and proof. Covers the first topics of advanced calculus including the axioms of the real numbers, sequences, mathematical induction, limits, topology of the real numbers, continuity, differentiation, and integration.

MATH 3300
Foundations of Abstract Algebra
3:3:0 Fall, Spring
* Prerequisite(s): MATH 3100 or MATH 3250 with a grade of C or higher and University Advanced Standing

Provides an introduction to algebraic structures. Covers the theory of groups including modular arithmetic, normal subgroups, factor groups, and cyclic groups. Introduces rings, integral domains, and fields.

MATH 3310
Discrete Mathematics
3:3:0 On Sufficient Demand
* Prerequisite(s): MATH 1220 with a grade of C or higher and University Advanced Standing

Includes logic, sets, functions, elementary number theory, mathematical induction, equivalence relations, and cardinality. Emphasizes the writing of proofs.

MATH 3320
Graph Theory and its Applications
3:3:0 Fall Even Year
* Prerequisite(s): MATH 2270 with a grade of C or higher and University Advanced Standing

Introduces the most important topics of graph theory including graphs and modeling, trees, paths, circuits, and connectivity, matching, planar graphs and coloring, and applications.

MATH 3400
Partial Differential Equations
3:3:0 Spring
* Prerequisite(s): MATH 2280 with a grade of C or higher and University Advanced Standing

Introduction to partial differential equations. Topics include Bessel functions, Legendre polynomials, Fourier analysis, partial differential equations, and boundary value problems.

MATH 3640
Introduction to Optimization
3:3:0 Fall Odd Year
* Prerequisite(s): MATH 2210 or MATH 221H and MATH 2270 with a grade of C or higher and University Advanced Standing

Includes linear, quadratic, and nonlinear programming, network problems, convexity, necessary and sufficient optimality conditions, numerical algorithms, and special topics.

MATH 3750
Financial Mathematics
3:3:0 Fall, Spring, Summer
* Prerequisite(s): MATH 1220 or FIN 3100 each with a grade of C or higher and University Advanced Standing

Prepares students to take Exam FM/Exam 2 given by the Society of Actuaries/Casualty Actuarial Society. Trains students to answer complex questions under significant time pressure. Teaches the principles and mathematics of interest, annuities, amortization, investments, financial economics, derivative investment contracts and financial risk management.

MATH 4015
Actuarial Problems Laboratory
1:0:3 On Sufficient Demand
* Prerequisite(s): STAT 4710 and University Advanced Standing

Provides preparation for the first actuarial examination by linking concepts of probability and mathematical statistics to actuarial applications.

MATH 4025
Actuarial Problems Finance Laboratory
1:0:3 On Sufficient Demand
* Prerequisite(s): (MATH 3750 or Departmental Approval) and University Advanced Standing

Provides preparation for the second actuarial examination by linking concepts of finance and derivative markets to actuarial applications frequently found on Exam FM/2.

MATH 4030
Geometry for Secondary Mathematics Teaching
3:3:0 Fall
* Prerequisite(s): Math 3100 with a grade C or higher and University Advanced Standing

For Mathematics Education Majors. Includes the exploration of important conceptual underpinnings, common misconceptions and students' ways of thinking, appropriate use of technology, and instructional practices to support and assess the learning of geometry. Teaches constructions and transformations, congruence and similarity, analytic geometry, solid geometry, conics, trigonometry, and the historical development of content and perspectives from diverse cultures. Makes explicit connections to various mathematical content strands (modeling, complex numbers, function, and algebra).

MATH 4040
Statistics and Probability for Secondary Mathematics Teaching
3:3:0 Fall
* Prerequisite(s): Math 1210 with a grade B- or higher and Math 2040 with a grade C or higher and University Advanced Standing

Includes logic, sets, functions, elementary number theory, mathematical induction, equivalence relations, and cardinality. Emphasizes the writing of proofs.

MATH 4015
Actuarial Problems Laboratory
1:0:3 On Sufficient Demand
* Prerequisite(s): STAT 4710 and University Advanced Standing

Provides preparation for the first actuarial examination by linking concepts of probability and mathematical statistics to actuarial applications.

MATH 4025
Actuarial Problems Finance Laboratory
1:0:3 On Sufficient Demand
* Prerequisite(s): (MATH 3750 or Departmental Approval) and University Advanced Standing

Provides preparation for the second actuarial examination by linking concepts of finance and derivative markets to actuarial applications frequently found on Exam FM/2.

MATH 4030
Geometry for Secondary Mathematics Teaching
3:3:0 Fall
* Prerequisite(s): Math 3100 with a grade C or higher and University Advanced Standing

For Mathematics Education Majors. Includes the exploration of important conceptual underpinnings, common misconceptions and students' ways of thinking, appropriate use of technology, and instructional practices to support and assess the learning of geometry. Teaches constructions and transformations, congruence and similarity, analytic geometry, solid geometry, conics, trigonometry, and the historical development of content and perspectives from diverse cultures. Makes explicit connections to various mathematical content strands (modeling, complex numbers, function, and algebra).

MATH 4040
Statistics and Probability for Secondary Mathematics Teaching
3:3:0 Fall
* Prerequisite(s): Math 1210 with a grade B- or higher and Math 2040 with a grade C or higher and University Advanced Standing

Includes logic, sets, functions, elementary number theory, mathematical induction, equivalence relations, and cardinality. Emphasizes the writing of proofs.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Term</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 4210</td>
<td>Advanced Calculus I</td>
<td>3:3</td>
<td>Fall</td>
<td>* Prerequisite(s): MATH 3250 with a grade of C or higher and University Advanced Standing &lt;br&gt; Covers limit and differentiation theorems, L'Hopital's rule, integration, the Fundamental Theorem of Calculus, series convergence, Taylor series, compactness, and an introduction to the geometry and topology of Euclidean spaces.</td>
</tr>
<tr>
<td>MATH 4220</td>
<td>Advanced Calculus II</td>
<td>3:3</td>
<td>Spring</td>
<td>* Prerequisite(s): MATH 4210 with a grade of C or higher, and University Advanced Standing &lt;br&gt; Covers the topology of Euclidean spaces, vectors and linear transformations, multivariable limits and continuity, multivariable differentiation, Jordan regions, multivariable Riemann integration, and Taylor series in multiple variables.</td>
</tr>
<tr>
<td>MATH 4250</td>
<td>Introduction to Dynamical Systems</td>
<td>3:3</td>
<td>Fall</td>
<td>* Prerequisite(s): MATH 3250 with a grade of C or better, and University Advanced Standing &lt;br&gt; Provides a foundation in dynamical systems. Discusses fundamental topics of dynamics, including graphical analysis, orbits, periodic and fixed points, convergence, bifurcations, symbolic dynamics, chaos, and Sarkovskii's Theorem. May include fractals, complex functions, and fractal dimension.</td>
</tr>
<tr>
<td>MATH 4310</td>
<td>Introduction to Modern Algebra I</td>
<td>3:3</td>
<td>Fall</td>
<td>* Prerequisite(s): MATH 3300 with a grade of C or higher and University Advanced Standing &lt;br&gt; Provides a deeper treatment of topics in modern algebra. Covers direct products of groups and the classification of finite Abelian groups. Covers the theory of rings including ideals, factor rings, various kinds of integral domains, fields, and polynomial rings.</td>
</tr>
<tr>
<td>MATH 4320</td>
<td>Introduction to Modern Algebra II</td>
<td>3:3</td>
<td>Spring</td>
<td>* Prerequisite(s): MATH 4310 with a grade of C or higher and University Advanced Standing &lt;br&gt; Provides a deeper treatment of topics in the theory of groups, rings, and fields. Covers field extensions, algebraic extensions, finite fields, and Kronecker's Theorem. Includes applications to straightedge and compass geometric constructions. Covers other topics at the instructor's discretion which may include the Sylow Theorems, symmetry groups, and Galois Theory.</td>
</tr>
<tr>
<td>MATH 4330</td>
<td>Theory of Linear Algebra</td>
<td>3:3</td>
<td>Spring</td>
<td>* Prerequisite(s): MATH 3250 with a grade of C or higher and University Advanced Standing &lt;br&gt; Covers vector spaces, linear transformations and matrices, dual spaces, inner product spaces, orthogonality, bilinear forms, eigenvalues, eigenvectors and generalized eigenvectors, diagonalization, and Jordan and other canonical forms.</td>
</tr>
<tr>
<td>MATH 4340</td>
<td>Introduction to Number Theory</td>
<td>3:3</td>
<td>Spring Even Year</td>
<td>* Prerequisite(s): MATH 3250 with a grade of C or higher and University Advanced Standing &lt;br&gt; Covers divisibility, irreducibility and primality, linear Diophantine equations, Pell's equation, continued fractions, congruences, Euler's theorem, arithmetic functions, primitive roots, quadratic reciprocity.</td>
</tr>
<tr>
<td>MATH 4510</td>
<td>Foundations of Topology</td>
<td>3:3</td>
<td>Fall Even Year</td>
<td>* Prerequisite(s): MATH 3250 with a grade of C or higher and University Advanced Standing &lt;br&gt; Introduces the ideas of topologies, compactness, connectedness, countability, separability, separation axioms, homeomorphisms, and the Baire Category Theorem.</td>
</tr>
<tr>
<td>MATH 4610</td>
<td>Introduction to Numerical Analysis I</td>
<td>3:3</td>
<td>Fall</td>
<td>* Prerequisite(s): MATH 2270 and MATH 2280, each with a grade of C or higher, an approved programming language, and University Advanced Standing &lt;br&gt; Includes numerical solutions of equations in one variable, numerical solutions of linear and nonlinear system of equations, interpolations and polynomial approximation, and approximating eigenvalues and eigenvectors.</td>
</tr>
<tr>
<td>MATH 4620</td>
<td>Introduction to Numerical Analysis II</td>
<td>3:3</td>
<td>Spring</td>
<td>* Prerequisite(s): MATH 4610 with a grade of C or higher and University Advanced Standing &lt;br&gt; Introduction to numerical analysis II. Topics will include numerical differentiation and integration, numerical solutions of initial-value problems and boundary-value problems for ordinary differential equations, numerical.</td>
</tr>
<tr>
<td>MATH 4750</td>
<td>Life Contingencies</td>
<td>3:3</td>
<td>Spring Odd Year</td>
<td>* Prerequisite(s): STAT 4710 with a grade of C or higher and University Advanced Standing &lt;br&gt; Includes survival models, Markov Chains, life insurance and annuities, and Poisson processes. Prepares students for the life contingencies portion of Exam M of the Society of Actuaries.</td>
</tr>
<tr>
<td>MATH 481R</td>
<td>Internship in Mathematics</td>
<td>1 to 4</td>
<td>Fall, Spring</td>
<td>On Sufficient Demand * Prerequisite(s): Instructor Approval and University Advanced Standing &lt;br&gt; For mathematics majors. Provides mathematics-related work experience in an industrial, commercial, or research environment. Internship credit may not be used in fulfilling the mathematics major course requirements. May be taken two times for a maximum of 6 credits toward graduation. May be graded credit/no credit.</td>
</tr>
<tr>
<td>MATH 489R</td>
<td>Undergraduate Research in Mathematics</td>
<td>1 to 3</td>
<td>On Sufficient Demand</td>
<td>* Prerequisite(s): MATH 3250 with a grade of C or better, Departmental Approval, and University Advanced Standing &lt;br&gt; Allows research on a project determined by a faculty member and approved by the department chair. Emphasizes proof, modeling, or other activities associated with mathematical research. May be used as part of a senior project. May be Graded Credit/No Credit. May be repeated for a maximum of 3 credits toward graduation.</td>
</tr>
<tr>
<td>MATH 4999</td>
<td>Mathematics Capstone</td>
<td>2:2</td>
<td>Spring</td>
<td>* Prerequisite(s): Instructor approval, departmental approval, and University Advanced Standing &lt;br&gt; For mathematics majors, to be taken during the last semester before graduation. Reviews topics learned in the core undergraduate mathematics courses. Assesses student understanding through the Major's Field Test. Provides an opportunity for senior mathematics majors to participate in mathematical research under the supervision of a faculty member. Offers a setting in which students prepare a research paper and give oral presentations that describe their research.</td>
</tr>
<tr>
<td>MATH 5150</td>
<td>General Topology</td>
<td>3:3</td>
<td>Spring Odd Year</td>
<td>* Prerequisite(s): MATH 4510 or MATH 4210 with a grade of C or higher &lt;br&gt; Introduces the fundamentals of general topology, including topological spaces, separation axioms, continuity, compactness, connectedness, metric spaces, product spaces, metrization and ordinals.</td>
</tr>
<tr>
<td>MATH 6100</td>
<td>Topics in Geometry and Topology</td>
<td>1 to 3</td>
<td>Fall</td>
<td>* Prerequisite(s): MATH 3250 with a grade of C or higher &lt;br&gt; Includes manifolds, fundamental group, classification of surfaces, covering spaces, homotopy types, differential geometry, Riemannian geometry, algebraic geometry, projective geometry, and algebraic topology. May be delivered online.</td>
</tr>
</tbody>
</table>
MATH 6310
Modern Algebra
3:3:0  Fall, Spring
* Prerequisite(s): Mathematics Endorsement 4, or instructor approval
Reviews the basics of ring theory. Analyzes ideals and factor rings in detail to prepare students for the study of fields. Uses the basics of field theory, including the construction of field extensions, to prove the impossibility of the three great construction problems of antiquity. Concludes with an introduction to Galois Theory.

MATH 6350
Introduction to Combinatorics
3:3:0  Fall, Spring
* Prerequisite(s): Mathematics Endorsement 4, or instructor approval
Enumerates permutations and combinations of sets and multi-sets, inclusion-exclusion, recurrence relations, generating functions, Polya theory, and combinatorial structures.

MATH 6410
Topics in Ordinary Differential Equations
3:3:0  Fall, Spring
* Prerequisite(s): Mathematics Endorsement 4, or instructor approval
Includes the theory of linear and nonlinear ordinary differential equations and dynamical systems; the initial-value problems and behavior of solutions; the existence, uniqueness, perturbations, continuous dependence of solution on initial conditions, and introduction of nonlinear dynamical systems with applications.

MATH 6610
Numerical Methods and Modeling
3:3:0  Fall, Spring
* Prerequisite(s): Mathematics Endorsement 4, or instructor approval
Investigates modelling and numerical topics. Investigates topics from college algebra, calculus, linear algebra, and differential equations from a theoretical as well as numerical perspective. Expounds on algorithms and modelling through software packages in a hands-on approach.

MATH 6620
Topics in Numerical Analysis
3:3:0  Fall, Spring
* Prerequisite(s): Mathematics Endorsement 4, or instructor approval
Develops a deeper practical and theoretical understanding of methods used to find approximate solutions of a variety of mathematical problems and of the relationships between these algorithms. Compares accuracy, efficiency, and stability of methods used to solve nonlinear equations and large systems of linear and nonlinear algebraic equations; ordinary and partial differential equations; and to perform numerical differentiation, integration, interpolation and more general approximation of functions. Provides experience programming and applying many of the central algorithms that have powered modern advances in math and the sciences.

MATH 6700
Applications of Mathematics
3:3:0  On Sufficient Demand
* Prerequisite(s): Mathematics Endorsement 4, or instructor approval
Introduces various areas of mathematics that can be applied to other fields such as the sciences, arts, industry, etc. Includes topics such as game theory, graph theory, knot theory, number theory, etc.

Mathematics
Developmental (MAT)

MAT 0920
Math Fundamentals
3:3:0  Fall, Spring
* Prerequisite(s): Appropriate placement by a placement exam (within two years).
Designed for students requiring basic math review. Reviews basic operations with whole numbers and fractions. Includes basic operations involving decimals, percents, ratios, rates, and basic operations involving physical measurements. Lab access fee of $3 applies.

MAT 0950
Foundations for Algebra
4:4:0  Fall, Spring, Summer
* Prerequisite(s): One of the following (within department time limits): MAT 0950 or MAT 0980 with a C or higher; or appropriate placement by a placement exam.
Teaches Beginning and Intermediate Algebra in one semester. Covers linear, quadratic, and rational expressions, equations, and functions; systems of equations; logarithms; exponents; graphing; and problem solving. Prepares students for MAT 1030, STAT 1040, MAT 1050, and MAT 1090. May be delivered hybrid and/or online.

MAT 0990 (Cross-listed with: MAT 0980)
Introductory Algebra
4:4:0  Fall, Spring
* Prerequisite(s): One of the following (within two years): MAT 0950 or MAT 0980 with a C or higher; or appropriate placement by a placement exam.
For students who have completed a minimum of one year of high school algebra or who lack a thorough understanding of basic algebra principles. Teaches integers, solving equations, polynomial operations, factoring polynomials, systems of equations and graphs, rational expressions, roots, radicals, complex numbers, quadratic equations and the quadratic formula. Prepares students for MAT 1010, Intermediate Algebra. May be delivered hybrid and/or online. Lab access fee of $3 applies.

MAT 1000
Integrated Beginning and Intermediate Algebra
5:5:0  Fall, Spring, Summer
* Prerequisite(s): One of the following (within department time limits): MAT 0950 or MAT 0980 with a C or higher; or appropriate placement by a placement exam.
Integrates Beginning and Intermediate Algebra in one semester. Covers linear, quadratic, and rational expressions, equations, and functions; systems of equations; logarithms; exponents; graphing; and problem solving. Prepares students for MAT 1030, STAT 1040, MAT 1050, and MAT 1090. May be delivered hybrid and/or online.

MAT 1010
Intermediate Algebra
4:4:0  Fall, Spring, Summer
* Prerequisite(s): One of the following (within two years): MAT 0950 or MAT 0980 with a C or higher; or appropriate placement by a placement exam.
Expands and covers in more depth basic algebra concepts introduced in Beginning Algebra. Includes linear and quadratic equations and inequalities, polynomials and rational expressions, radical and exponential expressions and equations, complex numbers, systems of linear and nonlinear equations, functions, conic sections, and real world applications of algebra. May be delivered hybrid and/or online.

MAT 101R
Individualized Mathematics Review
1:1:0  Fall, Spring
* Prerequisite(s): Any MAT or MATH course
Designed as a follow-up to MATH 100R for students who desire to make further progress in their math placement through individualized instruction. Includes a diagnostic test of mathematical knowledge base which is used to develop an individualized learning plan. Provides targeted intervention to increase foundational mathematics knowledge. May be Graded Credit/No Credit. May be repeated for a maximum of 3 credits. Lab access fee of $3 applies.
MAT 1030 Quantitative Reasoning 3:3:0 Fall, Spring, Summer
* Prerequisite(s): One of the following (within department time limits): MAT 1000 or MAT 1010 with a grade of C or higher; or appropriate placement by a placement exam.
Teaches how to communicate, interpret, and analyze quantitative information found in the media and in everyday life to make sound personal, professional, and civic decisions. May be delivered online.

MAT 1035 Quantitative Reasoning with Integrated Algebra 6:6:0 Fall, Spring, Summer
* Prerequisite(s): One of the following (within department time limits): MAT 0950 with a grade of C or higher; appropriate placement by a placement exam
Teaches students to communicate, interpret, and analyze quantitative information found in the media and in everyday life to make sound personal, professional, and civic decisions. Provides the necessary algebraic content taught in context.

MAT 103H Quantitative Reasoning 3:3:0 Fall, Spring, Summer
* Prerequisite(s): One of the following (within department time limits): MAT 1000 or MAT 1010 with a grade of C or higher; or appropriate placement by a placement exam.
Teaches how to communicate, interpret, and analyze quantitative information found in the media and in everyday life to make sound personal, professional, and civic decisions. Covers the material at an honors level. May be delivered online.

MAT 1110 Foundations of Mathematical Thinking and Reasoning 3:3:0 On Sufficient Demand
* Prerequisite(s): One of the following (within two years): MAT 1000 or MAT 1010 with a grade of C- or higher; or appropriate placement by a placement exam.
Reviews and reflects on mathematics taught in K-12 to learn mathematical thinking and reasoning. Includes six topics: (1) Early mathematics experiences and mathematics anxiety (2) Why and how mathematics is as important as language literacy (3) The language features of mathematics, and mathematics as a way of thinking (4) Making mathematical arguments: mathematical structure and reasoning (5) Different ways of working with mathematics: mathematical cognition and methodology (6) Mathematical problem solving.

MECH 1010 Fundamentals of Mechatronics 3:3:0 Fall, Spring
Covers the fundamental skills and theory of the Mechatronics discipline. Covers integrated system design which includes electrical, mechanical, and microprocessor programming theory. Discusses the fundamentals of materials science, manufacturing processes, and the application of automation systems in a production environment. Course fee of $20 for materials applies. Lab access fee of $45 applies.

MECH 1020 Electronics in Automation Design 3:3:0 Fall
* Prerequisite(s): MECH 1010
Teaches basic DC and AC electronics theory including voltage, current, resistance, reactance, and complex impedance as well as basic electronic components such as resistors, capacitors, and inductors. Includes the analysis of series, parallel, and complex circuits as well as troubleshooting and measurement techniques. Teaches principles of algebra and trigonometry which will be utilized for circuit analysis. Emphasizes the application of algebraic and trigonometric concepts and theories in the design of automation systems. Course Lab fee of $40 for materials, lab applies.

MECH 2200 Semiconductors in Mechatronic Systems 3:3:0 Spring
* Prerequisite(s): MECH 1200
Teaches the theory of semiconductor PN junctions and discrete semiconductors such as diodes, bipolar junction transistors, and MOSFET's applied to automation control. Also introduces the utilization of opto-isolators, triacs, and SCR's in controlling automation power devices. Course Lab fee of $25 for materials, lab applies.

MECH 2300 Microcontroller Architecture and Programming 4:4:0 Spring
* Prerequisite(s): MECH 2205
Teaches computer architecture and the fundamentals of computer programming in C language. Uses an IDE to develop, compile and debug C code. Introduces structured top down design and program documentation. Teaches the organization of I/O ports including alternate functions. Utilizes microcontroller communications, functions and I/O methods to interface to sensors and actuators. Course Lab fee of $50 for materials, lab applies. Software fee of $29 applies.
Course Descriptions

MECH 2305
Microcontroller Architecture and Programming Lab
1:0:3 Spring
* Corequisite(s): MECH 2300
Applies computer architecture and the fundamentals of computer programming in C language. Uses an IDE to develop, compile and debug C code. Introduces structured top down design and program documentation. Teaches the organization of I/O ports including alternate functions. Utilizes microcontroller communications, functions and I/O methods to interface to sensors and actuators. Lab access fee of $45 for computers applies.

MECH 2400
Mechanical Components
4:4:0 Fall
* Prerequisite(s): MECH 1010
Teaches students how to select, design, and analyze mechanical components that are used in manufacturing systems. Reviews and reinforces the concepts of the structure of metals, metals selection, and mechanical properties. Focuses on the selection of belt and chain drives, gear and gearbox selection, design of shafts, specification of rolling element bearings, and the use of threaded fasteners. Integrates the selection and design of mechanical components into a design project. Lab access fee of $45 applies.

MECH 2500
Introduction to PLCs in Mechatronic Design
2:2:0 Fall
* Prerequisite(s): MECH 1200, MECH 2300
* Corequisite(s): MECH 2505
Covers the theory and programming of industrial control systems and programmable logic controllers (PLC). Introduces PLC programming stressing Ladder Logic and PLC programming, troubleshooting, and maintenance. Covers connection of PLCs to external components. Presents the fundamentals of digital logic using ladder logic. Covers number systems and Boolean algebra. Course Lab fee of $15 for materials, lab applies. Software fee of $29 applies.

MECH 2505
Introduction to PLCs in Mechatronic Design Laboratory
2:0:6 Fall
* Prerequisite(s): MECH 1200, MECH 2300
* Corequisite(s): MECH 2500
Applies the theory and programming of industrial control systems and programmable logic controllers (PLC). Applies PLC programming stressing Ladder Logic and PLC programming, troubleshooting, and maintenance. Applies connection of PLCs to external components. Lab access fee of $45 for computers applies.

MECH 2510
Fundamentals of Automation Controls
2:2:0 Fall
* Corequisite(s): MECH 2515
* Prerequisite(s) or Corequisite(s): MECH 2500
Covers how to select, install, and troubleshoot sensors in a manufacturing environment. Emphasizes the application of proximity sensors in automation equipment as well as the use of encoders to measure speed and position, pressure transducers, and the use of thermocouples and thermistors to measure temperature. Covers signal conditioning methods to interface sensors to microprocessors and PLC's. Course Lab fee of $20 for lab notebook, lab applies.

MECH 2515
Fundamentals of Automation Controls Laboratory
1:0:3 Fall
* Corequisite(s): MECH 2510
* Prerequisite(s) or Corequisite(s): MECH 2500
Applies methods for proper selection, installation, and troubleshooting of sensors in a manufacturing environment. Emphasizes the application of proximity sensors in automation equipment as well as the use of encoders to measure speed and position, pressure transducers, and the use of thermocouples and thermistors to measure temperature. Utilizes signal conditioning methods to interface sensors to microprocessors and PLC's. Lab access fee of $45 for computers applies.

MECH 2520
Advanced PLC Programming and Applications
2:2:0 Spring
* Prerequisite(s): MECH 2500
* Corequisite(s): MECH 2555
Covers the principles of program structure, subroutines, interrupts, debugging, and simplifying. Illustrates the measurement and scaling of analog signals. Covers networking principles such as Ethernet and serial. Course Lab fee of $15 for materials, lab applies. Software fee of $29 applies.

MECH 2550
Advanced PLC Programming and Applications Laboratory
2:0:6 Spring
* Prerequisite(s): MECH 2500
* Corequisite(s): MECH 2555
Applies the principles of program structure, subroutines, interrupts, debugging, and simplifying using a PLC. Applies the use of PLCs in the measurement and scaling of analog signals. Applies networking principles such as Ethernet and serial to communicate with a PLC. Lab access fee of $45 for computers applies.

MECH 2600
Introduction to Fluid Power Systems
3:2:3 Spring
* Prerequisite(s): MECH 2400
Develops the concepts used to design, build, and control a fluid power system that is used in an industrial automation process. Employs laboratory exercises to illustrate the selection and use of actuators, valves, and controls to selectively control a process. Course Lab fee of $15 for materials, lab applies. Lab access fee of $45 for computers applies. Software fee of $30 applies.

MECH 3050
Mechatronics Management
3:3:0 On Sufficient Demand
* Prerequisite(s): MECH 2550 and University Advanced Standing
Provides management principles, processes, and standards commonly used in manufacturing and other industries. Covers basic concepts in project management, operations management, quality management, and safety management. Familiarizes students with applicable software tools. Lab access fee of $45 for computers applies.

MECH 3220
Automation Motors and Controllers
3:3:0 Fall
* Prerequisite(s): (MECH 2550, or EART 2270, or Department Approval) and University Advanced Standing
* Corequisite(s): MECH 3225
Presents the selection and application of AC and DC servo motors and how to control the speed and position in automation systems. Teaches variable frequency drives and servo drives in automation system design. Applies algebra, trigonometry, integrals, and derivatives. Course Lab fee of $15 for materials, lab applies. Software fee of $29 applies.

MECH 3225
Automation Motors and Controllers Laboratory
1:0:3 Fall
* Prerequisite(s): (MECH 2550, or EART 2270, or Department Approval) and University Advanced Standing
* Corequisite(s): MECH 3225
Presents the selection and application of AC and DC servo motors and how to control the speed and position in automation systems. Teaches variable frequency drives and servo drives in automation system design. Lab access fee of $45 for computers applies.

MECH 3300
Industrial Networks
2:2:0 Spring
* Prerequisite(s): MECH 3220, University Advanced Standing
* Corequisite(s): MECH 3305
Covers the principles of designing, configuring, integrating, and maintaining an industrial network. Covers the use of software to integrate PLC's, sensors, HMI's, computers, and smart devices into a manufacturing data management network. Course Lab fee of $25 for materials, lab applies. Software fee of $29 applies.

MECH 3305
Industrial Networks Laboratory
1:0:3 Spring
* Prerequisite(s): MECH 3300
Covers the principles of designing, configuring, integrating, and maintaining an industrial network. Covers the use of software to integrate PLC's, sensors, HMI's, computers, and smart devices into a manufacturing data management network. Lab access fee of $45 for computers applies.
MECH 3400  
Statics and Material Properties for Mechatronics  
4:4:0  Spring  
* Prerequisite(s): University Advanced Standing  
* Corequisite(s): MECH 3400  
Teaches the concept of forces as vectors, the equations of equilibrium, calculation of normal forces, and the calculation of centroids and area moments of inertia. Teaches how to calculate tensile and shear stress in machine components and compare the resultant forces to standard theories of failure using the principles of statics. Teaches algebra, trigonometry, and elementary calculus in terms of the application of statics.

MECH 3405  
Statics and Material Properties for Mechatronics Laboratory  
1:0:3  Spring  
* Prerequisite(s): University Advanced Standing  
* Corequisite(s): MECH 3400  
Applies the concept of forces as vectors, the equations of equilibrium, calculation of internal forces, and the calculation of centroids and area moments of inertia. Covers how to calculate tensile and shear stress in machine components and compare the resultant forces to standard theories of failure by using the principles of statics. Lab access fee of $45 for computers applies.

MECH 3500  
Industrial Robots  
2:2:0  Spring  
* Prerequisite(s): MECH 2550, University Advanced Standing  
* Corequisite(s): MECH 3505  
Covers the principles of industrial robotics, programming, and the application of vision systems using industry created curriculum. May be delivered hybrid and/or online. Course Lab fee of $11 for flat ribbon cable, lab applies. Lab access fee of $45 for computers applies. Software fee of $50 applies.

MECH 3505  
Industrial Robots Laboratory  
1:0:3  Spring  
* Prerequisite(s): MECH 2550, University Advanced Standing  
* Corequisite(s): MECH 3500  
Applies the principles of industrial robotics, programming, and the application of vision systems using industrial robots. Lab access fee of $45 for computers applies.

MECH 3570  
Design Analysis and Rapid Prototyping  
3:3:0  Fall  
* Prerequisite(s): University Advanced Standing  
Covers the fundamentals of geometric dimensioning and tolerancing based on the ASME Y14.5 standard. Explores how a design is affected by manufacturing tolerances and how to specify the fit of parts on a detail print. Emphasizes assembly analysis using SolidWorks Motion and rapid prototyping to verify the form, fit, and function of a design. Lab access fee of $45 for computers applies.

MECH 3700  
CNC Machines in Mechatronic Design  
2:2:0  Fall  
* Prerequisite(s): MECH 3220, University Advanced Standing  
* Corequisite(s): MECH 3705  
Covers the application, programming, and maintenance of CNC machines. Emphasizes the integration of CNC machines into automation systems. Covers specifiers, performance, interfacing with industrial robots, tooling, programming, and integrating the CNC machine into factory system. Course lab fee of $35 for materials applies. Software fee of $29 applies.

MECH 3705  
CNC Machines in Mechatronic Design Laboratory  
1:0:3  Fall  
* Prerequisite(s): MECH 3220, University Advanced Standing  
* Corequisite(s): MECH 3700  
Applies the application, programming, and maintenance of CNC machines. Emphasizes the integration of CNC machines into automation systems. Applies specifications, performance, interfacing with industrial robots, tooling, programming, and integrating the CNC machine into a factory system. Lab access fee of $45 for computers applies.

MECH 3700  
CNC Machines in Mechatronic Design Laboratory  
1:0:3  Fall  
* Prerequisite(s): MECH 3220, University Advanced Standing  
* Corequisite(s): MECH 3700  
Applies the application, programming, and maintenance of CNC machines. Emphasizes the integration of CNC machines into automation systems. Applies specifications, performance, interfacing with industrial robots, tooling, programming, and integrating the CNC machine into a factory system. Lab access fee of $45 for computers applies.

MECH 4000  
Advanced Fluid Power Design  
2:2:0  Fall  
* Prerequisite(s): MECH 2600, University Advanced Standing  
* Corequisite(s): MECH 4305  
Expands on the basics taught in MECH 2600 covering motion control of a fluid power system using a PLC, proportional flow control valves, and analog sensors. Course lab fee of $15 for equipment applies.

MECH 4300  
Advanced Fluid Power Design Laboratory  
1:0:3  Fall  
* Prerequisite(s): MECH 2600, University Advanced Standing  
* Corequisite(s): MECH 4300  
Expands on the basics taught in MECH 2600 by applying motion control of a fluid power system using a PLC, proportional flow control valves, and analog sensors. Lab access fee of $45 for computers applies.

MECH 4305  
Advanced Fluid Power Design Laboratory  
1:0:3  Fall  
* Prerequisite(s): MECH 2600, University Advanced Standing  
* Corequisite(s): MECH 4300  
Expands on the basics taught in MECH 2600 by applying motion control of a fluid power system using a PLC, proportional flow control valves, and analog sensors. Lab access fee of $45 for computers applies.

MECH 4400  
Polymer/Composites and Processes  
3:3:0  Spring  
* Prerequisite(s): MECH 3400, University Advanced Standing  
Teaches students the selection of polymers, design of polymer products and manufacturing processes associated with polymer based products. Also teaches types of composites and design of composite products. Course lab fee of $18 for supplies applies. Lab access fee of $45 for computers applies.

MECH 4500  
Advanced Automation Controls  
3:3:0  Spring  
* Prerequisite(s): MECH 4300, University Advanced Standing  
* Corequisite(s): MECH 4505  
Introduces methods of advanced control of high speed components, analog controls, temperature, pressure, and time delay processes using digital and analog methods of control. Covers algebra, trigonometry, and basic applied calculus in the context of complex control systems. Course lab fee of $45 for equipment applies. Lab access fee of $45 for computers applies.

MECH 4505  
Advanced Automation Controls Laboratory  
1:0:3  Spring  
* Prerequisite(s): MECH 4300, University Advanced Standing  
* Corequisite(s): MECH 4500  
Integrates methods of advanced control of high speed components, analog controls, temperature, pressure, and time delay processes using digital and analog methods of control. Implements practical applications of the concepts discussed in the lecture portion of the class. Lab access fee of $45 for computers applies.

MECH 4800  
Capstone Project  
3:1:6  Spring  
* Prerequisite(s): MECH 3570, University Advanced Standing  
Integrates the concepts of the Mechatronics Engineering Technology curriculum into a semester-long design project. Requires students to conceive, define, design, document, and prototype a mechatronic project. Lab access fee of $45 for computers applies. Software fee of $29 applies.

MECH 481R  
Mechatronics Internship  
1 to 3:1 to 3:0  Fall, Spring  
* Prerequisite(s): Matriculation into Mechatronics Engineering Technology, Instructor Approval, and University Advanced Standing  
Provides opportunity to use work experience to add to educational background and academic experience. A maximum of 6 credit hours may be counted towards graduation. May be graded credit/no credit. May be delivered hybrid and/or online.

MECH 490R  
Topics in Mechatronics  
3:3:0  Spring  
* Prerequisite(s): University Advanced Standing  
Covers a chosen topic in the mechatronics discipline. May be taken more than once for different topics and for a maximum of 6 credit hours toward graduation. Lab access fee of $45 for computers applies.
Course Descriptions

Mechanical Engineering (ME)

ME 3010
Linear Systems
3:3:0
Fall
Prerequisite(s): ENGR 2030, MATH 2250, University Advanced Standing, and (Formal Acceptance into the Mechanical Engineering Program or Departmental Approval)
Covers analysis of linear systems in the time and frequency domains. Focuses on modeling and analysis of physical systems. Introduces Fourier and Laplace transforms. Includes a design component. Lab access fee of $45 for computers applies.

ME 3130
Kinematics
3:3:0
Spring
Prerequisite(s): ENGR 2030, University Advanced Standing, and (Formal Acceptance into the Mechanical Engineering Program or Departmental Approval)
Covers the analysis of dynamic mechanisms including: relative motion of links in mechanisms; velocities and accelerations of machine parts; rolling contact; cams; and synthesis of mechanisms. Introduces computer-aided engineering techniques for mechanism analysis. Includes a design component. Lab access fee of $45 for computers applies.

ME 3140
Machine Design
3:3:0
Fall
Prerequisite(s): ENGR 2140, ENGR 2160, University Advanced Standing, and (Formal Acceptance into the Mechanical Engineering Program or Departmental Approval)
Presents methods for static and dynamic stress and failure analysis for mechanical systems. Teaches how to create machine design models and free-body diagrams, calculate stress, estimate deflection, select an appropriate failure theory, and design to prevent failure. Gives experience using commercial FEA software to create models of simple structures and machine components. Includes a design component. Lab access fee of $45 for computers applies.

ME 3160
Intermediate Materials
3:3:0
Spring
Prerequisite(s): ENGR 2140, ENGR 2160, University Advanced Standing, and (Formal Acceptance into the Mechanical Engineering Program or Departmental Approval)
Teaches in further depth the mechanical behavior of engineering materials including metals, woods, plastics, ceramics and composites. Looks at characteristics, failure mechanisms, and designing with various engineering materials. Lab access fee of $45 for computers applies.

ME 3170
Introduction to Plastics and Composites
3:3:0
Spring
Prerequisite(s): ENGR 2140, ENGR 2160, CHEM 1210, MATH 2250, University Advanced Standing, and (Formal Acceptance into the Mechanical Engineering Program or Departmental Approval)
Introduces the structure, processing, properties and uses of plastic and composite materials. Surveys manufacturing methods. Teaches the use of plastic and composite materials in various products. Lab access fee of $45 for computers applies.

ME 3210
Manufacturing Processes for Engineers
3:3:0
Spring
Prerequisite(s): ENGR 2140, ENGR 2160, University Advanced Standing, and (Formal Acceptance into the Mechanical Engineering Program or Departmental Approval)
Introduces manufacturing processes, including machining, injection molding, casting, 3D printing, and forming. Introduces Computer Numeric Control (CNC) machining and Computer Aided Manufacturing (CAM). Lab access fee of $45 for computers applies.

ME 3300
Applied Thermodynamics
3:3:0
Spring
Prerequisite(s): ENGR 2300, University Advanced Standing, and (Formal Acceptance into the Mechanical Engineering Program or Departmental Approval)
Introduces thermodynamic analysis and design of vapor, gas, refrigeration and heat pump systems, along with exergy analysis. Covers thermodynamic relations, ideal gas mixture and psychometric applications, reacting mixtures, and combustion. Includes a design component. Lab access fee of $45 for computers applies.

ME 3335
Thermal/Fluid Experimentation
2:0:6
Spring
Prerequisite(s): ENGR 2300 or Departmental Approval and University Advanced Standing
Corequisite(s): ME 3320
Covers temperature, pressure, and flow measurement, along with calibration of thermal/ fluid sensors in a lab setting. Focuses on experiments to investigate various phenomena in fluid flow, thermodynamics, and heat transfer. Investigates the performance of pumps, fans, and heat exchangers. Includes a writing component. Lab access fee of $45 for computers applies.

ME 4010
Automatic Controls
3:3:0
Fall
Prerequisite(s): ME 3010 and University Advanced Standing
Covers analysis of control systems using Evans, Nyquist and Bode methods. Introduces digital control and feedback compensation concepts for system performance improvement. Includes a design component. Lab access fee of $45 for computers applies.

ME 4015
Control and Vibration Experimentation
2:0:6
Spring
Prerequisite(s): ME 4010 and University Advanced Standing
Introduces system modelling and characterization in the time and frequency domains, feedback and compensation, Proportional Integral Derivative (PID) control, control of velocity and position in a lab setting. Covers motion measurement, force measurement, free vibration, frequency response, impact response, noise, and signal processing. Includes a writing component. Lab access fee of $45 for computers applies.

ME 4180
Compliant Mechanisms
3:3:0
On Sufficient Demand
Prerequisite(s): ME 3130, ME 3140, and University Advanced Standing
Covers the design and analysis of compliant mechanisms and compliant structures. Includes large-deflection analysis/force displacement relationships, prediction of failure of compliant members, and synthesis of compliant mechanisms. Includes a design component. Lab access fee of $45 for computers applies.

ME 4380
Design of Thermal/Fluid Systems
3:3:0
On Sufficient Demand
Prerequisite(s): ENGR 2300, ME 3320, and University Advanced Standing
Applies the principles of thermodynamics, fluid mechanics, and heat transfer to the design of conventional and emerging thermal/ fluid systems. Includes lectures and design projects. Lab access fee of $45 for computers applies.
ME 4390
Heating Ventilating and Air Conditioning Design
3:3:0 On Sufficient Demand
* Prerequisite(s): ENGR 2300, ME 3320, and University Advanced Standing
Covers air conditioning components and systems, moist air properties and conditioning processes. Covers indoor environmental quality indicators, space heating and cooling load calculations, and building energy consumption estimation. Focuses on water- and air-system design, refrigerants and refrigeration systems. Includes lectures and design projects. Lab access fee of $45 for computers applies.

ME 4410
Computer Aided Engineering
3:3:0 Fall
* Prerequisite(s): ME 3140, ME 3320 and University Advanced Standing
Covers the application of computer-aided engineering tools in design; 3-D geometry and solid modeling; finite element analysis, kinematic analysis, and other software in engineering analysis. Includes a design component. Lab access fee of $45 for computers applies.

ME 4420
Finite Element Methods
3:3:0 Spring
* Prerequisite(s): ENGR 2140, ME 3320 and University Advanced Standing
Covers discrete approximation of engineering problems, energy and weighted residual methods, and coordinate systems and mapping. Focuses on one-, two-, and three-dimensional formulation of problems in solid and fluid mechanics and heat transfer, time-dependent problems, and optimization techniques. Lab access fee of $45 for computers applies.

ME 4510
Mechanical Engineering Seminar
1:1:0 Fall
* Prerequisite(s): University Advanced Standing
* Prerequisite(s) or Corequisite(s): ME 4810
Introduces various mechanical engineering careers and related industries. Emphasizes importance of life-long learning and active participation in professional societies and communities through lectures given by practicing engineers using their own experiences. Introduces various engineering codes of ethics. Intended as a culminating seminar for graduating seniors to prepare for their engineering careers. Lab access fee of $45 for computers applies.

ME 4550
Global Engineering
3:3:0 Spring
* Prerequisite(s): University Advanced Standing and Formal Acceptance into the Mechanical Engineering Program or Department Approval
Focuses on importance of issues associated with global product development including product development needs in unfamiliar cultures, managing distributed design teams and manufacturing at remote and/or distributed sites. Introduces first-hand how global companies approach these issues. Lab access fee of $45 for computers applies.

ME 4810
Mechanical Engineering Capstone I
3:3:0 Fall
* Prerequisite(s): University Advanced Standing, Formal Acceptance into the Mechanical Engineering Program, and Departmental Approval
Serves as a comprehensive two-semester design experience from conception to modeling or prototype. Uses, where possible, multidisciplinary team application of the engineering design process along with project management, manufacturing methods and economic analysis. Culminates in a design review based on formal presentations of fully documented, detailed proposed designs. Capstone I and II must be taken in consecutive semesters. Lab access fee of $45 for computers applies.

ME 481R
Mechanical Engineering Internship
1 to 3:1 to 3:0 Fall, Spring, Summer
* Prerequisite(s): University advanced standing. Admission into the Mechanical Engineering program and instructor approval.
Provides opportunities to apply classroom theory while students work as employees in a job that relates to their careers. Includes regular communication between students and the course coordinator. Credit is determined by the number of hours a student works during the semester and completion of individually set goals. May apply for up to 3 credits; may be graded as credit/no credit.

ME 4820
Mechanical Engineering Capstone II
3:3:0 Spring
* Prerequisite(s): ME 4810 and University Advanced Standing
Serves as a second semester of the two-semester design experience from conception to modeling or prototype. Uses, where possible, multidisciplinary team application of the engineering design process along with project management, manufacturing methods and economic analysis. Culminates in a demonstration of a final product (model or working prototype) with verification and documentation of how final product meets customer needs. Capstone I and II must be taken in consecutive semesters. Lab access fee of $45 for computers applies.

ME 490R
Advanced Current Topics in Mechanical Engineering
1 to 3:1 to 3:0 On Sufficient Demand
* Prerequisite(s): University Advanced Standing and Formal Acceptance into the Mechanical Engineering Program or Department Approval
Provides exposure to emerging topics and technologies of current interest in mechanical engineering. Varies each semester depending upon the state of technology. May be repeated for a maximum of 6 credits toward graduation without prior written department approval. Lab access fee of $45 for computers applies.

Meteorology (METO)

METO 1010
Introduction to Meteorology
3:3:0 Fall, Spring, Summer
PP
Introduces the study of our atmosphere. Studies the Earth's dynamic weather systems. Covers structure and compositions of the atmosphere; weather patterns; air masses; and types of weather fronts, weather forecasting, and climates.

METO 1020
Introduction to Meteorology Laboratory
1:0:2 Fall
Provides hands-on experience for students investigating various meteorologic phenomena discussed in METO 1010. Students desiring credit for a science major should take METO 1010 and METO 1020. Course fee of $10 for lab applies.

METO 1060
Fundamentals of Weather Forecasting
3:3:0 Fall
* Prerequisite(s) or Corequisite(s): METO 1010
Introduces the fundamental principles of meteorological processes and mid-latitude weather forecasting. Focuses on the analysis of surface and upper-air weather maps, of soundings, of satellite and radar imagery to analyze current meteorological conditions. Explores the application of techniques to perform forecasts for basic weather variables such as temperature and precipitation. Course fee of $10 for lab applies.

METO 3100
Climate and the Earth System
3:3:0 Spring
PP
Introduces the study of our atmosphere. Studies the Earth's dynamic weather systems. Covers structure and compositions of the atmosphere; weather patterns; air masses; and types of weather fronts, weather forecasting, and climates.

Marriage and Family Therapy (MFT)

MFT 6000
Systemic Foundations of Marriage and Family Therapy
3:3:0 Fall
* Prerequisite(s): Admission to the Master of Marriage and Family Therapy, M.A. program
Introduces students to the historical development of the relational/systemic perspective. Emphasizes a systemic paradigm for clinical intervention. Includes conceptual foundations and founders of MFT. Compares early models of MFT.
Course Descriptions

MFT 6010
Contemporary Approaches to MFT
3:3:0  Spring
* Prerequisite(s): Admission to the Master of Marriage and Family Therapy, M.A. program
Introduces students to contemporary models of MFT. Compares post-modern models of MFT. Includes evidence-based practice and the biopsychosocial perspective.

MFT 6100
Ethical Issues in Marriage and Family Therapy
3:3:0  Fall
* Prerequisite(s): Admission to the Master of Marriage and Family Therapy, M.A. program
Promotes MFT identity. Develops student competence in ethical decision making. Includes application of the American Association for Marriage and Family Therapy Code of Ethics and relevant Utah law to clinical scenarios.

MFT 6200
Systemic Assessment and Diagnosis
3:3:0  Fall
* Prerequisite(s): Admission to the Master of Marriage and Family Therapy, M.A. program
Develops student competence in treatment approaches specifically designed for use with families. Includes evidence-based practice for clinical work with young children, adolescents, families in mid-life, and elderly families.

MFT 6210
Couples Therapy
3:3:0  Spring
* Prerequisite(s): MFT 6200 and admission to the Marriage and Family Therapy, M.A. program
Develops student competence in treatment approaches specifically designed for use with a range of diverse couples, including sex therapy, same-sex couples, elderly, and interfaith couples. Includes evidence-based practice and crisis intervention with couples.

MFT 6220
Group Therapy
2:2:0  Spring
* Prerequisite(s): MFT 6200 and admission to the Marriage and Family Therapy, M.A. program
Develops student competence in treatment approaches specifically designed for use with groups. Evaluates group work with addiction, abuse and trauma. Includes evidence-based practice and crisis intervention with groups.

MFT 6230
Family Therapy
3:3:0  Summer
* Prerequisite(s): MFT 6000 and admission to the Marriage and Family Therapy, M.A. program
Develops student competence in treatment approaches specifically designed for use with families. Introduces students to crisis intervention with families. Includes evidence-based practice for clinical work with young children, adolescents, families in mid-life, and elderly families.

MFT 6240
Individual Therapy
2:2:0  Fall
* Prerequisite(s): MFT 6200 and admission to the Marriage and Family Therapy, M.A. program
Introduces students to a variety of common presenting problems including addiction, suicide, trauma, abuse, intra-familial violence, and acute chronic medical conditions. Utilizes a relational/systemic philosophy. Includes evidence-based practice and crisis intervention with individuals.

MFT 6300
Working with Diversity in MFT
3:3:0  Summer
* Prerequisite(s): Admission to the Master of Marriage and Family Therapy, M.A. program
Builds student awareness of diversity, power, privilege, and oppression as these relate to race, age, gender, ethnicity, sexual orientation, gender identity, socioeconomic status, disability, health status, religious affiliation, nation of origin, spiritual orientation, or other relevant social categories.

MFT 6310
Child and Adolescent Development
3:3:0  Fall
* Prerequisite(s): MFT 6000 and admission to the Marriage and Family Therapy, M.A. program
Introduces students to individual and family development during stages of childhood and adolescence. Addresses human sexuality. Discusses biopsychosocial health during childhood and adolescence.

MFT 6320
Adult Issues in Human Development
3:3:0  Spring
* Prerequisite(s): MFT 6300 and admission to the Marriage and Family Therapy, M.A. program
Introduces students to individual and family development across stages of adulthood. Addresses human sexuality. Discusses biopsychosocial health during adulthood.

MFT 6400
Research in Marriage and Family Therapy
3:3:0  Fall
* Prerequisite(s): MFT 6000 and admission to the Marriage and Family Therapy, M.A. program
Introduces students to basic research methodology. Examines evidence-based practice in MFT. Evaluates usefulness of couple, marriage, and family therapy research.

MFT 6500
Community Intervention
1:1:0  Spring
* Prerequisite(s): Admission to the Master of Marriage and Family Therapy, M.A. program
Introduces students to practice within defined contexts (e.g., healthcare settings, schools, military settings, private practice). Addresses nontraditional MFT professional practice using therapeutic competencies (e.g., community advocacy, psycho-educational groups). Considers multidisciplinary collaboration.

MFT 6510
Contemporary Issues in MFT
1:1:0  Fall
* Prerequisite(s): MFT 6000 and admission to the Marriage and Family Therapy, M.A. program
Develops student competence in emerging and evolving contemporary challenges. Examines problems and/or recent developments at the interface of MFT knowledge and practice and the broader local, regional, and global context. Includes discussion of contemporary issues such as immigration, technology, same-sex marriage, and violence in schools.

MFT 6520
Clinical Business Development and Practice
2:2:0  Spring
* Prerequisite(s): Admission to the Master of Marriage and Family Therapy, M.A. program
* Prerequisite(s) or Corequisite(s): MFT 6930
Introduces students to the development of private clinical practices. Specific emphasis on business practice in the mental health field. Includes discussion of HIPAA and telehealth.

MFT 6600
Capstone in MFT
1:1:0  Spring
* Prerequisite(s): Admission to the Master of Marriage and Family Therapy, M.A. program
* Prerequisite(s) or Corequisite(s): MFT 6930
Emphasizes achievement of the program-level outcomes. Integrates knowledge across the program to promote student awareness of their own potential contributions to and positioning in the MFT field.

MFT 6900
Pre-Practicum
3:3:0  Fall
* Prerequisite(s): Admission to the Master of Marriage and Family Therapy, M.A. program
Introduces basic skills and competencies needed for effective and ethical clinical practice. Guides self-awareness and self-reflection. Presents expectations of competency in basic MFT interventions, sensitivity to client contextual variables, completion of case documentation, and use of supervision and feedback.

MFT 6910
Practicum I
3:3:0  Spring
* Prerequisite(s): Approval of MFT faculty and admission to the Marriage and Family Therapy, M.A. program
* Prerequisite(s) or Corequisite(s): MFT 6900
Advances competence in MFT assessment and intervention. Includes practice with diverse, international, multicultural, marginalized, and/or underserved communities. Guides competence in working with sexual and gender minorities and their families as well as anti-racist practices. Guides self-awareness and self-reflection.
Course Descriptions

MGMT 6920
Practicum II
3:3:0  Summer
* Prerequisite(s): MFT faculty approval and admission to the Marriage and Family Therapy, M.A. program
* Prerequisite(s) or Corequisite(s): MFT 6910
Advances student competence in MFT assessment and intervention. Includes practice with diverse, international, multicultural, marginalized, and/or underserved communities. Guides competence in working with sexual and gender minorities and their families as well as anti-racist practices. Guides self-awareness and self-reflection.

MGMT 6930
Practicum III
3:3:0  Fall
* Prerequisite(s): Approval of MFT faculty and admission to the Marriage and Family Therapy, M.A. program
* Prerequisite(s) or Corequisite(s): MFT 6920
Advances student competence in MFT assessment and intervention. Includes practice with diverse, international, multicultural, marginalized, and/or underserved communities. Guides competence in working with sexual and gender minorities and their families as well as anti-racist practices. Guides self-awareness and self-reflection.

MGMT 6940
Practicum IV
3:3:0  Spring
* Prerequisite(s): Approval of MFT Faculty and admission to the Marriage and Family Therapy, M.A. program
* Prerequisite(s) or Corequisite(s): MFT 6930
Advances student competence in MFT assessment and intervention. Includes practice with diverse, international, multicultural, marginalized, and/or underserved communities. Guides competence in working with sexual and gender minorities and their families as well as anti-racist practices. Guides self-awareness and self-reflection.

Business Management (MGMT)

MGMT 1010
Introduction to Business
3:3:0  Fall, Spring, Summer
Overviews the business world, its structure, procedures, and vocabulary. Provides information to assist in making occupational choices. Methods include lectures, class discussions, group activities, videos, and guest speakers. Completers should have a general knowledge of business and career opportunities. May be delivered online. Canvas Course Mats $13/Lumen applies.

MGMT 1250
Principles of Leadership
3:3:0  Fall, Spring
Required course for integrated studies degree students with an emphasis in leadership. Overviews principles of leadership. Provides students with information on successful leadership styles. Includes lectures, videos, cases, group activities, and class discussion. Lab access fee of $30 for computers applies.

MGMT 2030
Women in Business
3:3:0  Fall, Spring
* Prerequisite(s): ENGL 1010 or ENGH 1005
Explores the foundations of women in business today. Discusses the opportunities, challenges, and solutions of women as employees, managers, and leaders within all types of organizations. Includes topics such as opportunities for success, work-life issues, gender differences and role development, organizational culture and diversity, the glass ceiling and other barriers to success, career development, developing leadership, personal goals and ambitions, leadership styles, mentoring and coaching, and women in business professions. Includes lecture, in-class and online discussions, guest speakers, group activities, case studies, presentations, and written assignments.

MGMT 2110 (Cross-listed with: COMM 2110)
Interpersonal Communication
3:3:0  Fall, Spring, Summer
Examines the role of communication in interpersonal relationships. Includes the history of interpersonal communication research and theory, and applications such as negotiation, conflict management, listening, and assertiveness.Canvas Course Mats $69/McGraw applies.

MGMT 2240
Business Calculus
3:3:0  Fall, Spring, Summer
* Prerequisite(s): MATH 1050, MATH 1055 or MATH 1090 taken within the last two years with grade of C- or better or appropriate placement assessment score.
Analyzes profit, revenue, cost and average cost functions through rates of change, both average and instantaneous. Applies graphical, numerical, and algebraic techniques to optimization in business-related problems. Covers compound interest including present value and future value of ordinary annuities. Focuses on solving a variety of problems in economics and finance using derivatives and integrals. May be delivered hybrid and/or online. Canvas Course Mats $78/Cengage applies. Lab access fee of $30 for computers applies.

MGMT 2340
Business Statistics I
3:3:0  Fall, Spring, Summer
* Prerequisite(s): MATH 1050, MATH 1055, or MATH 1090 or higher, or appropriate test scores
Presents an application of statistics in business and economics covering methods of collecting, analyzing, and presenting data. Includes frequency distributions, averages, index numbers, probability, sampling, estimation, analysis of variance, time series, regression and correlation, and chi-square. May be delivered online. Canvas Course Mats $78/McGraw applies. Lab access fee of $30 for computers applies.

MGMT 2450
The Principles of Personal Excellence
3:3:0  Not Offered
Introduce students to a holistic framework for the development of personal effectiveness and peak performance. Reviews principles, processes, and practices used by peak performers in many life disciplines. Offers students a chance to apply many practices and techniques, which they can apply within the many performances arenas of their life. Course fee of $15 applies.

MGMT 258R
Current Topics in International Business
1 to 3:1 to 3:0  Not Offered
* Prerequisite(s): Department Chair Approval
Provides exposure to emerging topics of current interest in international business. Topics vary each semester. May apply a maximum of three hours toward graduation.

MGMT 281R
Cooperative Work Experience
2 to 8:2 to 8:0  Fall, Spring, Summer
* Prerequisite(s): Approval from School of Business Career and Corporate Manager
Provides opportunities to apply classroom theory on the job. Students work as paid employees in a job that relates to their careers while enrolled at the institution. Credit is determined by the number of hours a student works during the semester. Completers meet individually set goals. Six credits may be applied toward graduation. May be graded credit/no credit.

MGMT 290R
Independent Study
1 to 3:1 to 3:0  Not Offered
Provides independent study as directed in reading and individual projects. Requests must be submitted for approval by the department. Approval for this program will be coordinated with the instructor. May be repeated for up to three credits.

MGMT 292R
Seminar
1 to 3:1 to 3:0  Not Offered
Designed to give the student added insight into management principles essential for successful management of a business. Includes guest experts from the field of business. May be repeated for a total of three credits.

MGMT 297H
Honors Seminar in Leadership Development
3:3:0  Not Offered
Emphasizes factors that impact leadership effectiveness and skill development in organizations. Features lectures on topics such as leadership, participative management, negotiations, team building, and women's issues by local experts in a seminar setting. Includes group interaction and discussions, written summaries and instructor critique of student performance.
MGMT 3000
Organizational Behavior WE
3:3:0 Fall, Spring, Summer
* Prerequisite(s): MKTG 2200 or ENGL 2010 and University Advanced Standing

Studies behavioral theories and concepts for creating effective organizations. Emphasizes knowledge of individual, group, and organizational processes and variables regarding people’s attitudes and behaviors in organizational settings. Presents topics on communication, leadership, motivation, conflict, management, socialization, team building, decision making, diversity, ethics, and culture. Includes lectures, case studies, oral presentations, written assignments, and group projects. May be delivered hybrid and/or online. Lab access fee of $32 for computers applies.

MGMT 3020
Individual Action and Corporate Social Responsibility
3:3:0 Fall, Spring, Summer
* Prerequisite(s): ENGL 2010 and University Advanced Standing

Focuses on moral issues in organizations and the role and importance these have in today's complex business environment. Explores the challenges that arise across the spectrum of business activity and studies human conduct in a business context and what constitutes right and wrong. Examines issues of ethics as they apply to business entities, managers, shareholders, customers, society, and other consultants. Focuses on identifying and solving real-world ethical dilemmas in business, and evaluates various individual and corporate decision-making models.

MGMT 3070
Total Quality Management
3:3:0 Fall, Spring, Summer
* Prerequisite(s): MGMT 3450, Matriculation into Woodbury School of Business, and University Advanced Standing

Covers universal principles of quality assurance management, mechanics of a quality information system, and quality management practices. Emphasizes system elements, controls, and fitness for use. Includes process charting, quality costing concepts, statistical process control (SPC), sampling, variability, attribute charting, and continuing improvement strategies. May be delivered online. Lab access fee of $30 for computers applies.

MGMT 3200 (Cross-listed with: HM 3200)
Global Tourism
3:3:0 Fall, Spring
* Prerequisite(s): MKTG 2200 or ENGL 2010 and University Advanced Standing

Studies the history and future of tourism, the impacts (environment, culture, economy) of tourism, and tourist behavior. Includes lectures, case studies, field trips, and guest speakers. Completers should be sophisticated travelers and understand the nature of the world's largest industry and its impacts on society and national economies.

MGMT 3210 (Cross-listed with: HM 3210)
Event Venue and Convention Management
3:3:0 Fall, Spring
* Prerequisite(s): ENGL 2010 and University Advanced Standing

Analyzes and explores the conventions and meetings market, event venue management, and the corresponding relationship with convention and visitors bureaus. Covers various procedures in site selection, site layout and logistics, operations, negotiations, and contracts, food and beverage service, and convention sales.

MGMT 330G
Survey of International Business
3:3:0 Fall, Spring, Summer
* Prerequisite(s): ENGL 2010 or MKTG 2200, ECON 2010, and University Advanced Standing

Studies the history and future of tourism, the impacts (environment, culture, economy) of tourism, and tourist behavior. Includes lectures, case studies, field trips, and guest speakers. Lab access fee of $32 for computers applies.

Course Descriptions
MGMT 3500  
**Leadership Theory and Application**  
3:3:0  
Fall, Spring  
* Prerequisite(s): University Advanced Standing  
Examines leadership theory and how it applies to real-world situations. Facilitates thinking and dialogue about leaders and the leadership process. Covers leadership development strategies and approaches for individuals, teams, and organizations. Includes readings, discussions, reflections, experiential activities, guest speakers, written papers, and innovative assignments. Required course for Integrated Studies Degree students with a Leadership emphasis. Lab access fee of $30 for computers applies.

MGMT 3700  
**Supply Chain and Logistics Management**  
3:3:0  
* Prerequisite(s): MGMT 3450 and University Advanced Standing  
Teaches planning and controlling of supply chains and distribution networks. Covers concepts of network design, forecasting, aggregate planning, transportation, sourcing decisions, performance metrics, and the role of information technology in supply chain.

MGMT 3730  
**Opportunities in Direct Sales**  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): University Advanced Standing  
Discusses direct sales and the impact on our society. Covers basic terminology of the direct sales industry. Introduces distinctions between legal and illegal activity in the industry. Teaches the history of direct sales, compensation plans, and industry ethics. Analyzes communication skills in the direct sales industry. Explores the unique nature of the relationship between the company and the independent representative. Uses discussion, lecture, presentations, and group activities to increase understanding and ability to analyze business under the umbrella of direct sales.

MGMT 3740  
**Relationship Marketing**  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): MGMT 3730 and University Advanced Standing  
For students interested in understanding relationship marketing as it applies to the direct selling industry. Focuses on the relationship between companies and their independent sales forces. Covers business ethics, compensation, structures, company conventions, distributor services, and online community building. Uses lectures, discussions, guest speakers, analyses in the field, and presentation of analysis in both oral and written format.

MGMT 4350  
**Business Intelligence and Data Visualization**  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): MGMT 2240, MGMT 2340, Matriculation into Woodbury School and University Advanced Standing.  
Utilizes data and data visualization tools to support business intelligence and inform business decisions. Identifies key variables and methods of presenting data. Prepares for industry certifications, software credentials, and internships.

MGMT 4470  
**Strategic Operational Planning**  
3:3:0  
* Prerequisite(s): MGMT 3450 and University Advanced Standing  
Integrates planning concepts in the planning hierarchy within a manufacturing framework. Explores in depth the concepts of capacity planning, advanced sales and operational planning, demand management and forecasting, advanced MRP/ERP, inventory control, scheduling and lot sizing. Focuses on linkages between production planning and execution.

MGMT 4480  
**Management Science and Optimization**  
3:3:0  
* Prerequisite(s): MATH 1100 (or higher) or MGMT 2240, MGMT 2340, and University Advanced Standing  
Explores management science and optimization models in depth, focusing on business applications and computer modeling. Introduces linear programming, integer programming, nonlinear programming, goal programming and network flow models. Studies transportation, assignment and transshipment problems. Also studies stochastic models, simulation and decision analysis.

MGMT 450R  
**Leadership Practicum**  
1 to 3:0 to 3  
* Prerequisite(s): University Advanced Standing  
Designed for upper-division students interested in acquiring and practicing applied leadership skills. Covers project management, team participation and/or leadership, effective meeting management, decision-making, and budgeting. May be repeated for a maximum of 6 credits toward graduation.

MGMT 458R  
**Advanced Topics in International Business**  
1 to 3:1 to 0  
On Sufficient Demand  
* Prerequisite(s): Department Chair Approval and University Advanced Standing  
Provides exposure to emerging topics of current interest in international business. Topics vary each semester. May apply a maximum of 6 hours toward graduation.

MGMT 4620  
**Developing Business in China**  
3:3:0  
Spring  
* Prerequisite(s): ENGL 2100, Junior Standing, and University Advanced Standing  
Introduces the key factors driving the economy and companies doing business in and with China. Compares the institutions and characteristics of the Chinese economy and business system. Identifies issues facing managers of western corporations producing and selling in the Chinese market, sourcing from Chinese industry and competing with Chinese rivals.

MGMT 481R  
**Internship**  
1 to 8:1 to 8  
Fall, Spring, Summer  
* Prerequisite(s): Approval from School of Business Career and Corporate Manager and University Advanced Standing  
For upper-division students working toward a Bachelor of Science Degree in Business Management. Provides a transition from school to work where learned theory is applied to actual practice through meaningful on-the-job experience. No more than three credit hours of internship work experience will apply toward graduation in any Business Management Specialization; may be repeated for a maximum of 8 credits. May be graded credit/no credit.

MGMT 4835  
**Management Consulting Strategy Implementation**  
1:1:0  
* Prerequisite(s): Department Approval  
* Corequisite(s): MGMT 4840  
Builds on strategic management concepts and consulting course material using a hands-on, competitive business simulation.

MGMT 4840  
**Management Consulting**  
3:3:0  
Fall, Spring  
* Prerequisite(s): FIN 3100 with a minimum grade of B-, Instructor approval, and University Advanced Standing  
* Corequisite(s): MGMT 4835  
Builds knowledge and capability in the consulting process, competitive- and corporate-level strategic management elements, and client management strategies. Develops a business project with teams of students working together with a specific, recruited, local company. Applies knowledge and skills from the business curriculum, student teams will gather needed data, analyze it, problem-solve, and craft recommendations in order to improve competitive implementation and meet firm objectives using strategic management and project management tools.

MGMT 4860  
**Business Strategy Formulation and Implementation**  
4:4:0  
* Prerequisite(s): FIN 3100, MKTG 3600, MGMT 3000, MGMT 3450 and Matriculation into the Woodbury School of Business and University Advanced Standing. Senior standing is recommended.  
The capstone course for the Bachelor's Degree in Business Management. Provides a program of study and the necessary lab work to integrate major functional management area skills using case analysis and methods and a competitive business simulation while instilling strategic management concepts and thinking processes. Includes written and oral reports, lectures, class discussions, group projects, simulations, and when appropriate, utilizes videos and guest speakers. May be delivered online. Canvas Course Mats $78/McGraw- Hill applies.
MGMT 4870
International Management
3:3:0 Spring
* Prerequisite(s): MGMT 3000, MKTG 3600, Matriculation into the Woodbury School of Business, and University Advanced Standing
Examines in depth the leading forces and trends shaping the opportunities and challenges confronted by multinational corporations (MNCs) as they assemble, grow, mature, coordinate and control their international network of subsidiaries, joint-ventures, alliances, and supplier firms. Examines the strategies pursued by MNCs in response to opportunities and challenges in this process, consistent with their distinctive strengths and weaknesses; and theories. Contrasts the models and strategic frameworks relating these strategies and forces/trends. Includes group project (written and oral presentations) on a multinational corporation developing or maturing its network in a selected market.

MGMT 490R
Independent Study
1 to 3:1 to 3:0 On Sufficient Demand
* Prerequisite(s): Department Chair Approval and University Advanced Standing
For bachelor's degree students and other interested persons. Offers independent study as directed in reading, in individual projects, etc., in the area of marketing and/or international business at the discretion and approval of the department chairperson. May apply a maximum of 6 hours toward graduation.

MGMT 492R
Human Resource Seminar
1:1:0 On Sufficient Demand
* Prerequisite(s): Department Chair Approval and University Advanced Standing
Presents guest speakers on emerging human resource (HR) research and issues: strategy, international, culture, legal issues, planning and job analysis, recruitment and selection, performance management, compensation and benefits, and career development. May be repeated for 2 credits toward graduation.

MGMT 494R
Seminar
.5 to 3:5 to 3:0 On Sufficient Demand
* Prerequisite(s): University Advanced Standing
Provides short courses, workshops, and special programs in business management, leadership, or current business topics. Repeatable for up to 3 credits toward graduation.

MGMT 495R
Executive Lecture Series
1:1:0 Fall, Spring
* Prerequisite(s): University Advanced Standing
Consists of lectures presented by guest speakers on current business topics concerning the student, community, nation, business world, etc. May be required in business programs; see specific program listings for details. May apply a maximum of 3 credits toward graduation.

MGMT 497H
Business Honors Seminar
1 to 3:1 to 3:0 On Sufficient Demand
* Prerequisite(s): Permission required, 3.4 GPA or higher, senior status, and University Advanced Standing
Provides in-depth exposure to an issue of current interest in business by a local expert in a seminar setting. Includes group interaction and discussion, critical analysis of readings, and critique of student writings. Topics vary each semester.

MGMT 4980
Business Research Seminar
3:3:0 On Sufficient Demand
* Prerequisite(s): Instructor Approval and University Advanced Standing
Studies the process of researching and writing for scholarly publication. Includes understanding the concepts of scholarly conversation, managing scholarship, choosing a topic, identifying appropriate journals, using exemplars, creating a title and abstract, making an outline, developing an introduction and conclusion, writing the body of the paper, and then revising, submitting, and finally publishing in a scholarly journal.

MGMT 6000
Career Development and Advancement
1.5:1:5:0
* Prerequisite(s): Acceptance into the UVU MBA program
Develops ability to implement the career management process by exploring the structure of career research and networking. Enhances interviewing and salary negotiation skills and abilities. Also addresses the transitional soft skills needed in a career management position. Provides interaction between students and successful leaders of business and nonprofit organizations throughout the semester.

MGMT 6215
Managing and Facilitating Professional Teams
3:3:0
* Prerequisite(s): Admission to Master of Accountancy or the Master of Business Administration Program
Enhances the ability to analyze and function in team-based, professional environments. Teaches what actions are needed to increase the effectiveness of a team, solve interpersonal problems, and remove common roadblocks.

MGMT 6440
Advanced Project Management
3:3:0 Fall, Spring, Summer
Focuses on advanced tools and techniques to develop strategic project management skills with an emphasis on managing technical projects. Explores best practices aligned for Program Management, Project Portfolio Management, and Strategic Project Leadership and Management. Analyzes basic cost justification techniques for making economic decisions in technical organizations.

MGMT 6450
Operations Management
3:3:0 Fall
* Prerequisite(s): Acceptance in the MBA program
Analyzes operations and production activities. Reviews basic processes. Analyzes managing a production or service organization, evaluation of concepts such as inventory control, production control, procurement, quality management, planning, and forecasting.

MGMT 6470
Organization Information Technologies
3:3:0 Fall, Spring, Summer
Examines in depth how information and information management affect the strategy, structure and operations of organizations. Covers Technical and organizational foundations of information systems along with contemporary approaches to building, managing and protecting information systems including hands-on work with a modern Enterprise Resource Planning (ERP) system. Introduces concepts of Enterprise Architecture and compares to cloud-based Software as a Service offerings. Emphasizes how information technology affects decision-making. Uses Excel as a decision support tool. Examines the ethical and legal issues raised by the capabilities of information technology. May be delivered online.

MGMT 6500
Managing Individuals and Groups
3:3:0 Fall
* Prerequisite(s): Acceptance in the MBA program
Exposes students to the concepts, theories, and practices related to the behavior and attitudes of people in organizations. Examines issues at the individual, group, and organizational levels, including topics such as individual differences, motivation, leadership, human resource management, teamwork, and organizational design, and structure.

MGMT 6510
Information Systems and Project Management
3:3:0 Spring
* Prerequisite(s): Acceptance into the Woodbury School of Business MBA program
Examines information systems at the general management level. Employs a strategic look at needs of any organization and how the function of information systems assists in the effectiveness of organizations.

MGMT 6740
Operations and Supply Chain Management
3:3:0
* Prerequisite(s): MGMT 6450
Utilizes advanced topics in operations research which develop decision making processes for complex organizations and systems. Identifies creative methods to analyze problems, develop alternative processes for decision making, and optimum processes for business and organizations.
MGMT 6800 Global Business Strategy 3:3:0 Summer
* Prerequisite(s): Acceptance in the MBA program
Integrates case analysis considered from the CEO's perspective. Evaluates global competitiveness, strategic assessment, policy development, and strategy implementation. Canvas Course Mats $78/McGraw Hill applies.

MGMT 6910 Designing Business 1.5:1.5:0 Fall
* Prerequisite(s): Acceptance into the Woodbury School of Business MBA program
Provides an opportunity to integrate the functional areas of business using a simulation, a comprehensive business case, or a consulting project with a community-based organization.

MGMT 6930 International Engagement 1.5:1.5:0
* Prerequisite(s): Acceptance into the Woodbury School of Business MBA program
Provides an integrated, engaged, learning opportunity for students to experience differences in culture and business operations of another country through the completion and reflection of an international consulting project or case studies, and a possible international experience. Projects or case studies will require the integration of functional areas of business in an international setting, and will highlight how these functions are interrelated.

MGMT 6940 MBA Consulting Project 3:3:0
* Prerequisite(s): Acceptance into the Woodbury School of Business MBA program
Utilizes community consulting to focus on business development through identifying, evaluating, and executing business opportunities within new and existing businesses. Implements consulting processes and strategies, and allows students to practice tools and techniques for developing business models.

Microbiology (MICR)

MICR 2060 Microbiology for Health Professions 3:3:0 Fall, Spring, Summer
* Prerequisite(s): BIOL 1610 and (ENGL 1010 or ENGH 1005) with a C- or higher in each. CHEM 1110 or higher is highly recommended
* Corequisite(s): MICR 2065
Studies the history of microbiology. Explores bacterial, fungal, parasitic, and viral diseases and their causes. Discusses the classification, physiology, genetics, and physical and chemical control of microbes. Emphasizes clinical applications. Is designed for those planning a career in the health professions such as nursing, dental hygiene, medicine, pharmacy, and dentistry. Includes weekly laboratory as a corequisite.

MICR 2065 Microbiology for Health Professions Laboratory 1:0:2 Fall, Spring, Summer
* Prerequisite(s): (BIOL 1010 or BIOL 1610) and (ENGL 1010 or ENGH 1005). CHEM 1110 highly recommended
* Corequisite(s): MICR 2060
Studies the history of microbiology. Explores bacterial, fungal, parasitic, and viral diseases and their causes. Discusses the classification, physiology, genetics, and physical and chemical control of microbes. Emphasis is on clinical applications. Designed for those planning a career in the health professions such as nursing, dental hygiene, medicine, pharmacy, and dentistry. Includes weekly laboratory. Course Lab fee of $44 for materials, lab applies.

MICR 3200 Emerging and Re Emerging Diseases and Zoonoses 3:3:0 Fall Even Year
* Prerequisite(s): MICR 2060 or MICR 3450 with a C- or higher in each and University Advanced Standing
Utilizes the most current infectious disease entities as examples for new (emerging) or old (re-emerging) diseases currently affecting mankind. Discusses zoonotic diseases (those transmissible from animals to humans and vice-versa) in detail. Emphasizes the underlying mechanisms of disease, and includes fundamental aspects of virology, bacteriology, and parasitology. Covers fundamental concepts in epidemiology, how the public health system deals with these diseases once they have been identified and instances where the public health system has failed in controlling these diseases along with the reasons for these failures. Investigates historical aspects of infectious diseases.

MICR 3450 General Microbiology 3:3:0 Fall, Spring
* Prerequisite(s): BIOL 3400 with a C- or higher and University Advanced Standing; BIOL 3600 recommended
* Corequisite(s): MICR 3455
Covers taxonomy, physiology and genetics of bacteria, archaea, viruses and eukaryotic microbes. Introduces industrial microbiology, biotechnology, and immunology and the biochemical basis of infectious diseases. Is designed for biology majors who desire an in-depth coverage of microbiology.

MICR 3455 General Microbiology Laboratory 1:0:2 Fall
* Prerequisite(s): BIOL 3400 and University Advanced Standing; BIOL 3600 recommended
* Corequisite(s): MICR 3450
Hands-on laboratory procedures that studies the methods of taxonomy and distinguishes physiology and genetics of prokaryotes (bacteria, Archaea), viruses and eukaryotic pathogens. Introduces methods used in industrial microbiology, biotechnology, and immunology and the biochemical basis of infectious diseases. Designed for biology majors who desire an in-depth coverage of microbiology. Course Lab fee of $60 for materials, lab applies.

MICR 4100 (Cross-listed with: ZOOL 4100) Parasitology 4:3:2 On Sufficient Demand
* Prerequisite(s): (BIOL 1620 or MICR 2060) with a C- or higher and University Advanced Standing
Introduces the study of parasites. Emphasizes the biology of principal groups of parasites affecting humans, livestock, and other animals, including their medical economic, and ecological significance. Emphasizes parasites causing zoonotic diseases. Includes weekly laboratory experience involving identification of parasites. Course Lab fee of $25 applies.

MICR 4200 Microbiomes 3:3:0 Fall Even Year
* Prerequisite(s): BIOL 1620, BIOL 3500, and University Advanced Standing
Explores the historical background, current knowledge and ongoing research on microbiomes and their role in evolution of biodiversity, ecology of diverse species and communities, behavior of individuals, and impact on host development and physiology.

MICR 4300 Pathogenic Microbiology 4:3:2 Spring Even Year
* Prerequisite(s): MICR 3450 or MICR 2060 and University Advanced Standing
Discusses fundamentals of microbial pathogenesis, replication, infection, and immune mechanisms. Explores the biology of bacterial, viral, fungal, protozoan, and helminth pathogens. Discusses identification, control, and treatments of various microbial pathogens. Includes weekly laboratory. Course Lab fee of $25 applies.

MICR 4450 (Cross-listed with: BIOL 4450) Immunology 3:3:0 On Sufficient Demand
* Prerequisite(s): (MICR 2060 or MICR 3450 or ZOOL 2420) and University Advanced Standing
* Corequisite(s): MICR 4455
Explores the macromolecules, cells and organs involved in innate and adaptive immunity. Examines the development of lymphocyte repertoire, positive and negative selection of lymphocytes and the production of effector lymphocytes. Studies properties of antigens, vaccines, antigen presenting cells and the mechanisms of antigen presentation. Reviews major immunological methods for medical diagnostics and other applications. Examines causes and consequences of autoimmune and lymphoproliferative diseases and immunodeficiencies. Probes how immune response could be manipulated for cancer therapy and transplantation medicine.

MICR 4500 Virology 3:3:0 Fall
* Prerequisite(s): BIOL 3400 and (MICR 3450 or MICR 2060) and University Advanced Standing; BIOL 3600 recommended
Examines the fundamentals of virology. Covers viral structure, biochemistry, genomics, viral multiplication cycles in prokaryotic and eukaryotic cells, and techniques used in viral studies. Discusses viral diseases, transmission, therapy, evolution, and epidemiology.
Course Descriptions

MICR 490R
Special Topics in Microbiology
1 to 4:1 to 4:1 to 8 On Sufficient Demand
* Prerequisite(s): BIOL 1620 and University Advanced Standing
Explores and examines special topics relating to the field of microbiology. Emphasizes areas of rapid growth in microbiology or current importance to society. May be repeated for a total of 9 credits toward graduation.

Military Science (MILS)

MILS 1200
Introduction to Leadership Excellence I
2:2:0 Fall
* Corequisite(s): MILS 145R
Presents historical overview and development of military value systems and philosophies. Studies individual leadership styles, organization and time management, and writing skills. Includes ethics and code of an officer, role of an officer in the military, drill and ceremonies, fire team tactics, map reading, and basic rifle marksmanship. Lab required.

MILS 1210
Introduction to Leadership Excellence II
2:2:0 Spring
* Prerequisite(s): MILS 1200 or Department Approval
* Corequisite(s): MILS 145R
Compares and analyzes leadership styles found in the U.S. Army, as well as business, academic, and government organizations. Studies Army organization, active and reserve forces; winter survival, advanced fireteam and aggressor tactics. Lab required.

MILS 143R
Military Fitness
1:0:3 Fall, Spring
For Army ROTC students and all other interested students. Uses the Army Physical Fitness Test to evaluate the student's performance and improvement in the areas of flexibility, strength, and endurance. Includes instruction in foot care and road marching techniques. Repeats are required. See advisor for details.

MILS 145R
Introduction to Leadership Dynamics and Techniques
1:0:3 Fall, Spring
* Prerequisite(s): Department Approval
Leadership lab for UVU Army ROTC students and other students interested in the study of leadership. Studies the dynamics of leadership of groups and individuals in various environments. Provides opportunities for students to apply leadership principles and techniques in challenging situations and conditions. Required lab for students enrolled in UVU Military Science 1000- and 2000-level classes. Students not enrolled in Army ROTC may take this class up to six credits with department approval.

MILS 2050
Small Unit Combat Tactics
2:2:0
Introduces cadets to the personal challenges and competencies that are critical for effective leadership by introducing cadets to the personal development of life skills, critical thinking, goal setting, time management, and physical/mental fitness.

MILS 2200
Advanced Organizational Leadership I
2:2:0 Fall
* Prerequisite(s): MILS 1210 or Dept. Approval
* Corequisite(s): MILS 245R
Builds on skills and fundamentals learned in MILS 1200 and 2210. Studies the dynamics of leadership of groups and individuals in a field environment. Provides opportunities for students to apply leadership principles and techniques in challenging situations to further prepare them for leadership positions in the military or any career field they choose.

MILS 2210
Advanced Organizational Leadership II
2:2:0 Spring
* Prerequisite(s): MILS 2200 or Dept. Approval
* Corequisite(s): MILS 245R
Builds on skills and fundamentals learned in MILS 2200 and 1210. Studies the dynamics of leadership of groups and individuals in a field environment. Provides opportunities for students to apply leadership principles and techniques in challenging situations to further prepare them for leadership positions in the military or any career field they choose.

MILS 245R
Leadership Studies
1:0:3 Fall, Spring
* Prerequisite(s): MILS 145R or instructor approval
Studies the dynamics of leadership of groups and individuals in a field environment. Provides opportunities for students to apply leadership principles and techniques in challenging situations to further prepare them for leadership positions in the military or any career field they choose. May be repeated for up to four credits with department approval.

MILS 259R
Current Topics in Military Science
3:3:0 On Sufficient Demand
Provides exposure to emerging issues of current interest in military science. Topics vary each semester. May be repeated for a maximum of 9 credits toward graduation.

MILS 3200
Small Unit Leadership I
3:3:0 Fall
* Prerequisite(s): MILS 2210
* Corequisite(s): MILS 345R
Prerequisite to attendance at National Advanced Leadership Camp. Prepares for successful completion of camp. Studies land navigation, squad and platoon tactics, combat operations, physical fitness, and physical leadership. Lab required.

MILS 3210
Small Unit Leadership II
3:3:0 Spring
* Prerequisite(s): MILS 3200
* Corequisite(s): MILS 345R
Prerequisite to attendance at National Advanced Leadership Camp. Prepares for successful completion of camp. Studies land navigation, squad and platoon tactics, combat operations, physical fitness, and physical leadership. Lab required.

MILS 345R
Advanced Leadership Dynamics and Techniques
1:0:3 Fall, Spring
* Prerequisite(s): Departmental Approval
Leadership lab for UVU Army ROTC students and other students interested in the study of leadership. Studies the dynamics of leadership of groups and individuals in various environments. Provides opportunities for students to apply leadership principles and techniques in challenging situations and conditions. Required lab for students enrolled in UVU Military Science 3000- and 4000-level classes. Students not enrolled in Army ROTC may take this class four times for credit with department approval.

MILS 4200
The Profession of Arms I
3:3:0 Fall
* Prerequisite(s): Departmental Approval
* Corequisite(s): MILS 445R
Prepares the prospective officer for initial training and subsequent assignment into the U.S. Army. Includes overview of U.S. Army training management, military writing, administration, logistics, professionalism, and ethics. Lab required.

MILS 4210
The Profession of Arms II
3:3:0 Spring
* Prerequisite(s): MILS 4200 or Departmental Approval
* Corequisite(s): MILS 445R
Prepares the prospective officer for successful completion of Army assignments. Includes advanced U.S. Army leadership training, training management, military justice and law, pre-commissioning orientation, military briefing skills, and junior officer leadership.

MILS 445R
Transition to Officership
1:0:3 Fall, Spring
* Prerequisite(s): Departmental Approval
Leadership Lab for UVU Senior Army ROTC students. Studies the dynamics of leadership of groups and individuals in various environments. Provides opportunities for students to refine leadership skills in preparation for service with the United State Army. Required lab for students enrolled in UVU Military Science 4000-level classes. ROTC students may take this course up to 4 credits with department approval.
MKTG 2200
Written Business Communication WE
3:3:0 Fall, Spring, Summer
Teaches written business correspondence and business reports using direct and indirect approaches; emphasizes analysis of audience and purpose in drafting documents with accurate and clear content, organization, and style; includes application of punctuation, grammar, and usage principles to business writing situations; emphasizes teamwork and collaboration. May be delivered online. Lab access fee of $32 for computers applies.

MKTG 2390
Professional Business Presentations
3:3:0 Fall, Spring, Summer
For students and others interested in developing professional business presentations skills. Teaches students to plan, develop, deliver, and evaluate business presentations using informative and persuasive formats in diverse settings using a variety of media. Provides additional presentation software training. Lab access fee of $30 for computers applies.

MKTG 259R
Current Topics in Marketing
1 to 3:1 to 3:0 On Sufficient Demand
* Prerequisite(s): Department Chair Approval
Provides exposure to emerging topics of current interest in marketing. Topics vary each semester. May apply a maximum of three hours toward graduation.

MKTG 281R
Marketing Cooperative Work Experience
1 to 3:1 to 3:0 On Sufficient Demand
* Prerequisite(s): Internship Orientation and Departmental Approval
Provides opportunities to apply classroom theory on the job. Students work as paid employees in a job that relates to their careers while enrolled at the college. Credit is determined by the number of hours a student works during the semester. Completers meet individually set goals. May be repeated for a maximum of 6 credits toward graduation. Graded Credit/No Credit.

MKTG 290R
Independent Study .5 to 3:5 to 3:0 On Sufficient Demand
* Prerequisite(s): Department Chair Approval
Provides independent study as directed in reading and individual projects specifically related to the Marketing field at the discretion and approval of the Dean and/or Department Chair. May be repeated for a maximum of 6 credits toward graduation.

MKTG 3220
Retail Management
3:3:0 Fall, Spring
* Prerequisite(s): MKTG 3600 and University Advanced Standing
Combines theoretical concepts with practical applications from a strategic management perspective. Includes lectures and discussions of current events within the retail industry to provide the primary basis for the integration of course materials with actual retail enterprise operations. Includes participation in a number of experiential learning exercises such as group and individual case analyses, outside research on the retail industry and specific retail firms, class presentations, guest speakers, and quizzes on selected retailing issues and practices. Lab access fee of $30 for computers applies. Canvas Course Mats $78/ McGraw applies

MKTG 335G
International Marketing
3:3:0 Fall, Spring
* Prerequisite(s): MKTG 3600 and University Advanced Standing
Presents the problems of marketing in the international marketplace and how marketers approach and solve them. Focuses on concepts and principles by teaching the theory and practice of international marketing through the use of practical examples and actual case studies of international (both US and foreign) marketing organizations. Includes international marketing position of the US, market entry strategies, analysis of foreign markets, culture and marketing, product design, pricing, distribution, promotion and sales. May be delivered online. Lab access fee of $30 for computers applies.

MKTG 3390
Business and Professional Presentations
3:3:0 On Sufficient Demand
* Prerequisite(s): MKTG 2200 and (complete one of the following: IM 2400, IM 2010, IM 101B, or business computer proficiency or Instructor Approval) and University Advanced Standing
For those interested in developing business and professional presentation skills. Emphasizes critical thinking as students plan, develop, deliver, and evaluate presentations using informative and persuasive formats in diverse settings using a variety of media. Incorporates aspects of multimedia. Successful completers should be able to take charge of all the elements of a presentation and present them cohesively, logically, and confidently. Lab access fee of $30 for computers applies.

MKTG 3460
Internal Marketing and Corporate Imaging
3:3:0 On Sufficient Demand
* Prerequisite(s): MKTG 3600 and University Advanced Standing
Introduces students to the fundamentals of Internal Marketing and Corporate Imaging. Focuses on internal marketing strategy, critical incident management, organizational change, employer brand, cause marketing, corporate citizenship, internal business communication and event management. Includes other topics, such as contingency planning, organizational culture, employee programs and training, motivation and internal reward programs. Includes case analysis, lectures, class discussions, group work and evaluation, videos, oral presentations, written assignments, and guest speakers.
MKTG 3650
Professional Selling
3:3:0  Fall, Spring
* Prerequisite(s): MKTG 3600 and University Advanced Standing

Emphasizes theoretical skills in the personal selling process and the management of a sales force. Studies the recruiting, training and supervising of salespersons, organization of territories, compensation schemes, and forecasting. Includes lectures, guest speakers, video tapes, role playing, case analysis, oral presentations, and written assignments. Lab access fee of $30 for computers applies. Canvas Course Mats $35/Cengage applies.

MKTG 3660
Digital Marketing
3:3:0  Fall, Spring
* Prerequisite(s): MKTG 3600 and University Advanced Standing

Provides an introduction to the many business uses of the Internet to create competitive advantage. Features discussions of e-business strategic components and practice with Web page exercises. Uses guided exercises to explore the Net, both in and out of class. Includes projects, research, and Net use in a particular industry. Emphasizes the sharing of concepts discussed in lectures, class activities, the assigned readings, and group projects. Lab access fee of $30 for computers applies.

MKTG 3670
Advertising and Promotion
3:3:0  Fall, Spring
* Prerequisite(s): MKTG 3600 and University Advanced Standing

Provides an understanding of advertising, its purposes, and production. Includes sequence of activities in preparing productive, persuasive marketing and advertising campaign plans. Covers the social, legal, and economic considerations involved in the campaign planning process. Includes lectures, class discussions, guest speakers, videos, and student presentations. Lab access fee of $30 for computers applies.

MKTG 3680
Marketing with Social Media
3:3:0  * Prerequisite(s): MKTG 3600 and University Advanced Standing

Teach students how to use social media platforms to market products and services. Includes the creation and marketing of a blog using WordPress and engaging with a local small business to write and execute a social media marketing campaign. Teaches the fundamentals of social media marketing and the most popular platforms like WordPress, Facebook, Twitter, Pinterest, and LinkedIn.

MKTG 3685
Content Marketing
3:3:0  * Prerequisite(s): MKTG 3600, University Advanced Standing, and matriculation in the Woodbury School of Business

Introduces content marketing which includes blogging, infographics, video, podcasts, and email marketing as a way to bring commercial marketing messaging to targeted customers through marketing channels. Provides experience with blogging software, photo and image design software, video editing software, and email automation software using WordPress and Email Marketing Automation.

MKTG 3690
Web Analytics and Digital Advertising
3:3:0  Fall, Spring
* Prerequisite(s): MKTG 3660 and University Advanced Standing

Teaches advanced digital marketing concepts and skills, including advanced training in web analytics, pay-per-click advertising, and display advertising. Includes a live client digital advertising engagement and preparation for Google certifications in analytics and advertising.

MKTG 3695
Digital Marketing Capstone
3:3:0  Fall, Spring
* Prerequisite(s): MKTG 3660, MKTG 3685, MKTG 3680, MKTG 3690, University Advanced Standing, and matriculation in the Woodbury School of Business; Senior Standing is recommended.

Applies digital marketing theories, principles, and tactics to a live learning engagement project. Provides a framework for developing a complete digital marketing plan and gives students an opportunity to learn software, automation tools, and digital marketing creative strategy.

MKTG 3890
Career Preparation
3:3:0  Fall, Spring, Summer
* Prerequisite(s): MKTG 2200 and University Advanced Standing

Emphasizes the development of effective techniques for successfully locating, applying for, securing employment, and advancing in a career. Provides opportunities to do self-analysis, research industry and job opportunities, and internalize appropriate etiquette in a variety of business and social settings. Includes demonstrations, role playing and application exercises, and group projects. May be delivered online. Lab access fee of $30 for computers applies.

MKTG 4220
Management Communication
3:3:0  Spring
* Prerequisite(s): MKTG 2200, Matriculation into the Bachelor’s Degree Program, and University Advanced Standing

Studies elements of communication in management. Concentrates on written and oral communication in business settings and includes communicating electronically, managing conflict, and dealing with change. Lab access fee of $30 for computers applies.

MKTG 4300
Marketing Analytics
3:3:0  Fall, Spring
* Prerequisite(s): University Advanced Standing and MGMT 2340 or STAT 2040 or STAT 1040 or BESC 3010 or appropriate test scores

Uses software to apply specific models and analytic techniques to solve important and common marketing management problems. Models contemporary marketing problems using such analytic tools as SPSS, SEMTool, Sawtooth Software, CRM database software, and Bass Diffusion Modeling.

MKTG 4400
Competitive Intelligence
3:3:0  On Sufficient Demand
* Prerequisite(s): MKTG 3600 and University Advanced Standing

Teaches Competitive Intelligence (CI), the study of processes and techniques leading to business analysis applied to industry and company investigation. Overviews the Competitive Intelligence process including information collection, intelligence analysis, and intelligence process assessment.

MKTG 459R
Advanced Topics in Marketing
1 to 3:1 to 3:0
* Prerequisite(s): Department Chair Approval and University Advanced Standing

Provides exposure to emerging topics of current interest in marketing. Topics vary each semester. May apply a maximum of 12 hours toward graduation.

MKTG 4600
Marketing Research
3:3:0  Fall, Spring
* Prerequisite(s): MKTG 3600, MGMT 2340 or STAT 2040 or STAT 1040 or BESC 3010 or appropriate test scores, and University Advanced Standing

Covers managerial uses of marketing research in formulating marketing strategy. Includes determination of situations requiring research, appraisal of alternative research methods, and evaluation of studies. Presents theoretical concepts in research methodology. Includes lectures, class discussions, group projects, case analyses, oral presentations, written assignments, and speakers. Lab access fee of $30 for computers applies.

MKTG 4610
Sales Operations
3:3:0  Fall, Spring
* Prerequisite(s): MKTG 3650 and University Advanced Standing

Provides a diagnosis of sales problems and data-driven solutions including decision support, SPSS modeling, and an introduction to data mining. Covers sales forecasting, correlation, regression, and survival analysis, CRM analysis, and territory analysis and design. Presents analytical decisions such as independent versus direct representation, compensation effects, and account customer life-time value.
MKTG 4650
Marketing Management Capstone
3:3:0 Fall, Spring
* Prerequisite(s): MKTG 3600, MKTG 3620, MKTG 3650, MKTG 3660, MKTG 335G. Matriculation into the Woodbury School of Business and University Advanced Standing; For Marketing Majors only; Senior Standing is recommended.

Practical learning experience; case analysis; and marketing problems designed to provide comprehensive exposure to advanced management practice. Provides independent study as directed in reading and written case studies. Includes lectures, class discussions, videos, projects, case analyses, oral presentations, written assignments, and guest speakers.

MKTG 481R
Marketing Internship
1 to 3:1 to 3:0 Fall, Spring, Summer
* Prerequisite(s): Department Chair Approval and University Advanced Standing

For upper-division students working toward a Bachelor of Science Degree in Marketing. Provides a transition from a Bachelor of Science Degree in Marketing. Provides a transition from school to work where learned theory is applied to actual practice through meaningful on-the-job experience. May be repeated for a maximum of 6 credits toward graduation. May be graded as CR/ND credit.

MKTG 482R
Sales Internship
1 to 8:1 to 8:0 On Sufficient Demand
* Prerequisite(s): Departmental Approval and University Advanced Standing

For upper-division students working toward a Bachelor of Science Degree in Marketing. Provides a transition from school to work where learned theory is applied to actual practice through meaningful on-the-job experience. May be repeated for a maximum of 6 credits toward graduation. May be graded as CR/ND credit.

MKTG 483R
Digital Marketing Internship
1 to 8:1 to 8:0 On Sufficient Demand
* Prerequisite(s): Departmental Approval and University Advanced Standing

For upper-division students working toward a Bachelor of Science Degree in Marketing. Provides a transition from school to work where learned theory is applied to actual practice through meaningful on-the-job experience. May be repeated for a maximum of 6 credits toward graduation. May be graded as CR/ND credit.

MKTG 484R
Independent Study
1 to 3:1 to 3:0
* Prerequisite(s): Department Chair Approval

Provides independent study as directed in reading and individual projects specifically related to the Marketing field at the discretion and approval of the Dean and/or Department Chair. May be repeated for a maximum of 6 credits toward graduation.

MKTG 4880
Research Seminar in Marketing
3:3:0 On Sufficient Demand
* Prerequisite(s): Department Chair Approval and University Advanced Standing

Studies the process of researching and writing for scholarly publication. Includes understanding the concepts of scholarly conversation; managing scholarship; choosing a marketing topic; identifying appropriate journals; using exemplars; creating a title and abstract; making an outline; developing an introduction and conclusion; writing the body of the paper; and then revising, submitting, and finally publishing in a scholarly journal.

MKTG 6400
Technology Marketing and Customer Experience
3:3:0 Fall, Spring, Summer

Teaches conceptual frameworks and analytical tools for marketing decision making in technology businesses from a cross-functional and strategic orientation. Focuses on understanding user needs, technology standards and network externalities, forecasting and planning, solution design and architecture, platform strategy, and managing adoption. Examines through cases, assignments, and projects how to use marketing analytics for intelligence gathering, analysis, and decision making, how to develop high-value solutions for users based on a deep understanding of their needs, and how to communicate the value of and provide access to those solutions through marketing technology.

MKTG 6600
Marketing Strategy
3:3:0 Summer
* Prerequisite(s): Acceptance in the MBA program

Analyzes current marketing management problems. Emphasizes marketing concepts, research techniques, decision making, and marketing strategy development.

MKTG 6660
Marketing Channels and Communications
3:3:0 Fall, Spring
* Prerequisite(s): Acceptance into MBA program

Explores key advanced marketing practices related to delivering and communicating value. Examines retailing, e-commerce, websites, personal selling, lead generation, digital marketing, as well as promotion and campaign management.

MKTG 6680
Applied Business Research
3:3:0 Fall
* Prerequisite(s): Acceptance into the Woodbury School of Business MBA program

Provides students with the capability to design and conduct applied business research projects in the varied disciplines as well as integrative across disciplines. Examines the philosophy of science, research design, measurement and scaling, reliability and validity, communication of research results, and related issues.

MKTG 6920
Creativity and Innovative Problem Solving
1.5:1.5:0 Fall
* Prerequisite(s): Acceptance into the Woodbury School of Business MBA program

Applies an understanding of the nature of creativity and expansive problem solving within the business environment through projects, simulations and/or case study. Provides awareness about individual and organizational characteristics which impact creative thinking and limit imaginative solutions.

Masters of Public Service (MPS)

MPS 6000
Public Services Administration
3:3:0 Fall
* Prerequisite(s): Acceptance into the Masters of Public Services Program

Explores senior level administrative functions within a public service organization. Analyzes and assesses positive and negative practices within public service organizations, including managerial actions and bureaucracy. May be delivered online.

MPS 6010
Public Services Finance and Budgeting
3:3:0 Summer
* Prerequisite(s): Acceptance into the Masters of Public Services Program

Analyzes financial and budgeting operations occurring in the public sector. Assesses funding streams, budget development, financial management concerns, and fiduciary responsibilities of public service leaders. May be delivered online.
MPS 6020  
Public Services Policy and Evaluation  
3:3:0  
Spring  
* Prerequisite(s): Acceptance into the Masters of Public Services Program

Provides the investigative, ethical, and development tools needed to form public policy and evaluate program success. Develops analysis skills to examine new ideas, test their viability, determine program needs, and organize to meet these needs. Designed to address how to make policy, how to assess if policy is working, and how to fix the flaws in existing policy. May be delivered online.

MPS 6030  
Legal Issues for the Public Services  
3:3:0  
Fall  
* Prerequisite(s): Acceptance into the Masters of Public Services Program

Evaluates the law and its application within the public services. Examines constitutional principles in relation to public service functions. May be delivered online.

MPS 6040  
Organizational Behavior in the Public Services  
3:3:0  
Summer  
* Prerequisite(s): Acceptance into the Masters of Public Services Program

Examines organizational behavior within the public services and compares and contrasts it to the private sector. Researches the public services to make comparisons and develop a theoretical basis, for use in administrative decision-making in dealing with organizations and their people. Applies conceptual frameworks, case discussions, and skill-oriented activities which include: motivation, learning and development, group dynamics, leadership, communication, power and influence, change, diversity, organizational design, and culture. Helps participants acquire skills and analytic concepts to improve organizational relationships and effectiveness. May be delivered online.

MPS 6050  
Public Services Leadership and Ethics  
3:3:0  
Spring  
* Prerequisite(s): Acceptance into the Masters of Public Services Program

Analyzes leadership approaches within the public services. Identifies the need for people-centric leadership that serves both the public servants and the community. Uses case study analysis to differentiate between leadership approaches to people and the management of processes. Explores ethical issues in public service delivery. May be delivered online.

MPS 6060  
Research Methods for the Public Services  
3:3:0  
Fall  
* Prerequisite(s): Acceptance into the Masters of Public Services Program

Identifies qualitative and quantitative research methods within a public services framework. Introduces the impact social science discovery has on the formulation of public policy. Illustrates research designs utilized within qualitative and quantitative methodologies. May be delivered online.

MPS 6400  
Public Services Program Development and Evaluation  
3:3:0  
Fall, Spring  
* Prerequisite(s): Acceptance into the Master of Public Service program

Provides program planning and evaluation responsibilities in public service settings. Focuses on the critical components of most planning models which include: performing a needs assessment; priority setting; creating a problem statement; establishing goals and objectives; developing and implementing interventions; evaluation; and budgeting.

MPS 679R  
Special Topics in Public Services  
1 to 6:1 to 6:0  
On Sufficient Demand  
* Prerequisite(s): Acceptance into the Master of Public Service Program  
* Prerequisite(s) or Corequisite(s): MPS 6060

Provides students with an opportunity to study and/or research special public service topics. Requires students to identify relevant topics of public services, analyze their issues and impacts, and synthesize possible solutions/ models for application in the public services arena. Calls for creation of a significant research paper worthy of communication to a broader peer audience. May be repeated for a maximum of 6 credits toward graduation.

MPS 690R  
Public Services Project  
3:3:0  
Summer  
* Prerequisite(s): Acceptance into the Masters of Public Services Program  
* Prerequisite(s) or Corequisite(s): MPS 6060

Teaches synthesis of public service/emergency services coursework and primary/secondary research in order to formulate a public policy or empirical work relating to public services administration. This course is intended to be successfully completed in one semester. In exigent circumstances, students may repeat this course for a total of 6 credits toward graduation, with departmental approval. May be delivered online.

MUSC 1010  
Introduction to Music  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): MUSC 1050

A survey course designed to make music more meaningful. Studies melody, harmony, form, and rhythm together with historical and biographical information. Canvas Course Mats $50/Norton

MUSC 101H  
Introduction to Music  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): MUSC 1100

Develops an appreciation and understanding of music. Studies melody, harmony, form, and rhythm. Focuses on the historical development of Western art music, including the contributions of major composers. Examines musical genres such as the chant, motet, madrigal, concerto grosso, opera, cantata, oratorio, symphony, music drama and tone poem. Practices the aural identification of specific compositions.

MUSC 102G  
American Popular Music  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): Acceptance into the Masters of Public Services Program

Studies the emergence, development, and characteristics of American music including Jazz, Blues, Country, Rock, Motown, Hip-Hop, and other popular styles. Examines the contributions of European, African, Latin and other cultural traditions on American popular music. Studies the influences of mass media and technology. Examines the marketing and dissemination of popular music by the music industry. Studies the role of popular music as a symbol of race, class, gender, and generation. Fulfills the Fine Arts general education distribution requirement and addresses the Intellectual and Practical Skills Foundation essential learning outcomes of qualitative reasoning.

MUSC 1030  
Beginning Piano I  
2:2:0  
Fall  
* Prerequisite(s): MUSC 1110

Provides group instruction for students with little or no piano and note-reading experience. Covers melodic and rhythmic notation, key recognition, and major and minor finger patterns. Teaches basic harmonization, transposition and improvisation. Course Lab fee of $20 for equipment applies.

MUSC 1050  
Beginning Piano II  
2:2:0  
On Sufficient Demand  
* Prerequisite(s): MUSC 1050

Builds on the skills learned in Beginning Piano I. Studies notation, scales, chord progressions, sight-reading, basic harmonization, transposition, and improvisation.

MUSC 1070  
Fundamentals of Music  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): MUSC 1070

Examines the fundamentals of music theory such as pitch notation, meter, rhythm, time signatures, intervals, major and minor scales, key signatures, and triads. Fulfills the Fine Arts general education distribution requirement and addresses essential learning outcomes of quantitative reasoning. Lab access fee of $10 for computers applies.

MUSC 1080  
Music Theory I  
3:3:0  
Fall, Spring  
* Prerequisite(s): MUSC 1180

Studies the fundamentals of music theory including elementary harmony, primary and secondary triads with inversions, non-harmonic tones and modulation.

MUSC 1090  
Music Theory II  
3:3:0  
Spring, Summer  
* Prerequisite(s): MUSC 1190

Provides further study of the fundamentals of music theory. Covers the analysis and composition of music using leading tone triads, seventh chords, secondary dominants, sequences, voice leading and modulation.
MUSC 1130
Aural Skills I
1:1:1
Fall, Spring
* Corequisite(s): MUSC 1110
Provides training in the aural identification of intervals and triads. Practices rhythmic dictation in simple, compound, and mixed meters, and melodic dictation of major and minor keys. Studies the solfeggio movable "Do" system.

MUSC 1140
Aural Skills II
1:1:1
Spring, Summer
* Prerequisite(s): MUSC 1130
* Corequisite(s): MUSC 1120
Provides further training in the aural identification of intervals and triads. Practices rhythmic dictation in simple and compound meters, and melodic dictation in major and minor keys. Studies the solfeggio movable "Do" system.

MUSC 1150
Group Piano I
1:1:1
Fall, Spring
* Corequisite(s): MUSC 1110 recommended
Develops fundamental piano skills including five-finger major and minor scales, arpeggios, chord progressions, sight-reading, and performance. Prepares students for music major keyboard examinations. Course Lab fee of $20 for equipment applies.

MUSC 1160
Group Piano II
1:1:1
Spring, Summer
* Prerequisite(s): MUSC 1150 or equivalent proficiency examination
* Corequisite(s): MUSC 1120 recommended
Builds on the skills learned in Group Piano I. Develops facility in two-octave major scales, arpeggios, chord progressions, sight-reading, harmonization, transposition, and performance. Prepares students for music major keyboard examinations. Course Lab fee of $20 for equipment applies.

MUSC 1170
Group Guitar I
2:2:0
Fall, Spring
Teaches fundamental skills used in playing popular guitar styles. Covers essential left and right hand techniques as well as basic musical rudiments.

MUSC 1180
Group Guitar II
2:2:0
On Sufficient Demand
* Prerequisite(s): MUSC 1170
Develops a variety of right and left hand techniques. Teaches both standard and tablature-style notation. Provides solo and ensemble performance opportunities.

MUSC 124R
UVU Concert Choir
1:2:0
Fall, Spring
Provides group training in the various styles of choral literature. Basic skills in note reading, matching pitch and blending with the ensemble expected. Requires participation at scheduled performances. May be repeated as desired.

MUSC 125R
University Band
1:0:2
Fall, Spring
Provides group training in the various styles of band literature. Requires participation at scheduled performances. May be repeated as desired.

MUSC 1400
Music Technology I
2:2:0
Fall
Examines the fundamental concepts and usage of technologies in music. Studies the history of analog and digital recording and the emergence of synthesis. Details the historical and current uses of Musical Instrument Digital Interface (MIDI). Introduces the basics of a Digital Audio Workstation (DAW) and contemporary music notation. Software fee of $15 applies. Course Lab fee of $10 for computers applies.

MUSC 1402
Music Technology II
2:2:0
Spring
* Prerequisite(s): MUSC 1400
Builds on the concepts covered in Music Technology I. Examines the uses of Musical Instrument Digital Interface (MIDI) and virtual instruments in the modern Digital Audio Workstation (DAW). Studies in greater depth the processes of contemporary music notation. Software fee of $15 applies. Course Lab fee of $10 for computers applies.

MUSC 1410
Survey of Commercial Music Careers
1:1:0
Fall
Introduces optimal career paths in contemporary music. Covers careers including but not limited to film composition, arranging, production, film music editing, studio engineering, performance, and education. Emphasizes practical skills in entrepreneurship, marketing, and networking.

MUSC 145R
Private Lessons I
1:1:0
Fall, Spring, Summer
Offers twelve 30-minute private lessons. Focuses on the individual needs of the student in developing skills and techniques. Requires personal practice as determined by instructor. Does not fulfill music major degree requirements. May be repeated as desired. Course fee of $270 for support applies.

MUSC 1630
Group Voice I
1:1:1
Fall, Spring
Provides group instruction in the development of vocal skills and techniques. Covers classical vocal production, breath management, diction, and performance skills. Provides student performance of vocal literature from several genres and style periods.

MUSC 1640
Group Voice II
1:1:1
On Sufficient Demand
* Prerequisite(s): MUSC 1630 or instructor permission
Provides more advanced group instruction in the development of vocal skills and techniques. Covers classical vocal production, breath management, English and Italian diction, performance anxiety and performance skills. Provides student performance of vocal literature from several genres and style periods.

MUSC 1800
Introduction to Music Education
3:3:0
Fall
Introduces the music education profession including history, philosophy, professional communities, career opportunities, and music teaching standards. Emphasizes the place of music and the arts in education, the role of government in schools, the challenges of 21st century education. Covers personal, professional, and musical skills necessary for successful music teaching and learning. Requires observation of music classrooms in public and private school settings outside of scheduled class time. Includes micro teaching and a final portfolio and interview which culminates in matriculation to the music education degree.

MUSC 1810
Contemporary Theory and Improvisation I
3:3:0
Fall
Studies jazz and contemporary music theory and applies this knowledge to the practice of improvisation. Introduces chord symbol spelling and notation practices. Develops aural skills through transcriptions of jazz recordings. Analyzes jazz and popular songs including repertoire with diatonic chord progressions in major and minor keys, tunes with secondary dominants, and the twelve bar blues. Provides training in melodic, rhythmic, and creative improvisational strategies.

MUSC 2001
Diction for Singers I
1:1:1
Fall
Teaches the International Phonetic Alphabet (IPA) as it pertains to the English, Italian and Latin languages. Applies IPA directly to song literature for each language. Provides basic reading, comprehension, and grammar skills in the Italian and Latin languages. Course lab fee of $15 for support applies.

MUSC 2002
Diction for Singers II
1:1:1
Spring
Teaches proficiency in the International Phonetic Alphabet (IPA) as it pertains to the German and French languages. Applies IPA directly to song literature for each language. Provides basic reading, comprehension, and grammar skills in each language. Course lab fee of $15 for support applies.
Course Descriptions

MUSC 2100
Teaching Music for Children FF
3:3:0 Fall
For Elementary Education students and other interested students and community members. Introduces concepts and techniques of music education applicable to the elementary school classroom. Teaches concepts and skills through a combination of readings and lectures. Applies vocal and instrumental basics and class projects. Addresses the Utah State Core Curriculum for music for the elementary school.

MUSC 2110
Music Theory III
3:3:0 Fall
* Prerequisite(s): MUSC 210
Studies the diatonic and chromatic materials of common practice music theory. Covers the analysis and composition of music using chromatic chords such as secondary dominants, diminished seventh chords, Neapolitan chords, and Italian, French and German sixth chords. Practices multiple methods of modulation.

MUSC 2125
Music Theory IV
3:3:0 Spring
* Prerequisite(s): MUSC 2110
Surveys compositional techniques used by post-tonal composers. Builds on the knowledge and skills learned in the tonal music theory classes.

MUSC 2130
Aural Skills III
1:1:1 Fall
* Prerequisite(s): MUSC 1140
* Corequisite(s): MUSC 2110
Provides training in the aural identification of intervals, triad inversions and chord progressions. Practices rhythmical dictation of syncopated rhythms and asymmetric and mixed meters, and melodic dictation of disjunct melodies and two-part dictation. Studies the solfeggio movable "Do" system in major, minor keys and modes with coordinating Kodaly hand signs.

MUSC 2140
Aural Skills IV
1:1:1 Spring
* Prerequisite(s): MUSC 2130
Provides further training in the aural identification of intervals, triad inversions and chord progressions. Practices rhythmical dictation of complex rhythm patterns and asymmetric and mixed meters. Teaches four-part harmonic dictation. Completes study of the solfeggio movable "Do" system.

MUSC 2150
Group Piano III
1:1:1 Fall
* Prerequisite(s): MUSC 1160 or equivalent proficiency examination
* Corequisite(s): MUSC 2110 recommended
Builds on the skills learned in Group Piano II. Develops facility in one-octave harmonic minor scales, arpeggios, chord progressions, sight-reading, harmonization, transposition, improvisation, and accompanying. Prepares students for music major keyboard proficiency examinations. Course lab fee of $20 for equipment applies.

MUSC 2160
Group Piano IV
1:1:1 Spring
* Prerequisite(s): MUSC 2150 or equivalent proficiency examination
* Corequisite(s): MUSC 2125 recommended
Builds on the skills learned in Group Piano III. Develops facility in two-octave major and harmonic minor scales, arpeggios, chord progressions, sight-reading, harmonization, transposition, improvisation in classical and contemporary styles, playing contemporary and jazz chord charts, and accompanying. Prepares students for music major keyboard proficiency examinations. Course lab fee of $20 for equipment applies.

MUSC 2170
Jazz and Contemporary Keyboard Skills I
1:1:1 Fall
* Prerequisite(s): MUSC 1160 or demonstration of equivalent keyboard proficiency
Introduces and develops basic jazz keyboard voicings and chord construction, rhythmic comping for jazz and popular styles, simple improvisation with left hand voicings, and fake book reading skills. Covers the Blues, ii-V-I, dominant cycles, tritone substitutions, diminished passing chords, and turnarounds with secondary dominants.

MUSC 2180
Jazz and Contemporary Keyboard Skills II
1:1:1 Spring
* Prerequisite(s): MUSC 2170 or demonstration of equivalent keyboard proficiency
Builds on the jazz and contemporary keyboard skills developed in MUSC 2170. Teaches complex open and closed position chord voicings using 4, 5, and 6 notes, including chords built in fourths. Develops hand independence through the performance of composed and improvised melodies in the right hand while comping with the left hand. Develops advanced melodic and harmonic techniques over the Blues, ii-V-I, dominant cycles, tritone substitutions, diminished passing chords, and turnarounds with secondary dominants.

MUSC 2210
Contemporary Theory and Improvisation II
2:2:0 Spring
* Prerequisite(s): MUSC 1810
Introduces modal harmony and develops techniques for modal jazz improvisation. Develops improvised chromatic embellishment techniques including passing tones, neighbor tones, and enclosures. Develops bebop improvisation techniques including syncopated accent patterns and #9 connectors. Introduces chord symbols and harmonic progressions not covered in MUSC 1810. Develops improvisational strategies for borrowed chords, altered chords, diminished chords, tritone substitutions, side-slipping, and dense harmonic rhythm (two chords per measure). Introduces symmetrical scales (whole tone and octatonic) and their application to tonal and modal improvisation.

MUSC 2350
Fundamentals of Conducting
2:2:0 Fall, Spring
* Prerequisite(s): MUSC 1120
Provides an introduction to the basics of conducting. Focuses on baton technique, score reading, interpretation and rehearsal.

MUSC 2400
Digital Audio Workstation
2:2:0 Fall
* Prerequisite(s): MUSC 1402 or Music Technology Certificate major
Introduces the Digital Audio Workstation, including shortcuts and commands for maximizing effectiveness and understanding within the workstation. Covers the basics of the software interface, audio and MIDI recording and editing, effects and creating a final product. Software fee of $15 applies. Course Lab fee of $10 for computers applies.

MUSC 2420
Music Production Basics
2:2:0 Spring
* Prerequisite(s): MUSC 2400
Introduces the basics of music production. Analyzes various aspects of contemporary music including sound and part selection for each instrument in the rhythm section. Discusses various recording and production techniques used in current music productions. Introduces students to technical production tools and techniques including but not limited to phasers, chorus, flange, delay, echo, reverb, compression, eq, filters, and distortion. Introduces the students to common production pitfalls such as overproduction. Software fee of $15 applies. Course Lab fee of $10 for computers applies.

MUSC 245R
Private Lessons II
1:1:0 Fall, Spring, Summer
* Prerequisite(s): Music major entrance audition required.
* Corequisite(s): MUSC 251R
Offers twelve 60-minute private lessons. Designed to meet the individual needs of the student in developing skills and techniques. Does not fulfill music major degree requirements. May be repeated as desired. Course fee of $443 for support applies.

MUSC 250R
Private Lessons for Music Majors
1:1:0 Fall, Spring, Summer
* Prerequisite(s): Music major entrance audition required.
* Corequisite(s): MUSC 251R
Offers twelve 60-minute private lessons for music majors. Focuses on the individual needs of the student in developing skills and techniques. Requires participation in weekly performance class. Includes juried evaluations. May be repeated as desired. Course fee of $443 for support applies.

MUSC 251R
Performance Class
1:1:0 Fall, Spring, Summer
* Prerequisite(s): MUSC 250R
Provides additional performance experience for music majors. Develops an ability to offer and receive constructive criticism. Explores performance-related topics such as practice strategies, performance anxiety, interpretive phrasing, technical mastery, memorization and jury preparation. May be repeated for a maximum of 12 credits toward graduation.
MUSC 281R 
Internship in Music I 
1 to 8:1 to 8:0 
On Sufficient Demand 
Prerequisite(s): Departmental Approval

Provides an opportunity for students to receive college credit and explore career options in music by working in music-related fields. Applies academic concepts to actual work experiences. Requires approval of faculty sponsor and completion and acceptance of application. Requires completion of an orientation, completion of Master Agreement between UVU and employer, completion of goals and tasks as required by academic department, and completion of final evaluation. May be repeated for a total of 8 credits towards graduation. May be graded credit/no credit.

MUSC 290R 
Independent Study 
1 to 3:0 to 9 
On Sufficient Demand 
Prerequisite(s): Instructor permission and advisor approval

Individual projects to be negotiated by student and instructor on a case-by-case basis to be approved by the departmental advisor. May be repeated for a maximum of 4 credits toward graduation.

MUSC 3005 
Vocal Literature I 
1:1:1 
Fall 
Prerequisite(s): MUSC 1120 and University Advanced Standing

Presents an overview of the English and Italian art song literature from 1500 to present. Provides performance training of stylistic elements appropriate for each time period.

MUSC 3006 
Vocal Literature II 
1:1:1 
Spring 
Prerequisite(s): MUSC 3005 and University Advanced Standing

Presents an overview of the French and German art song literature from 1500 to present. Provides performance training of stylistic elements appropriate for each time period.

MUSC 3025 
Songwriting I 
2:2:0 
Fall 
Prerequisite(s): MUSC 1400 and University Advanced Standing

Studies the creative processes and techniques involved in commercial songwriting. Covers the essential elements of lyric writing, setting lyrics to melody, and utilizing functional harmony. Explores the process of developing a production plan for a song demo. Software fee of $15 applies. Course Lab fee of $10 for computers applies.

MUSC 3026 
Songwriting II 
2:2:0 
Spring 
Prerequisite(s): MUSC 3025 and University Advanced Standing

Expands on the skills learned in Songwriting I. Focuses on the demands of commercial music projects, including the creation of lyrics and songs that have mass appeal. Discusses the professional expectations of writing on demand in a specific musical style for requisitioned purposes. Covers the business aspects of songwriting including demos, property rights, publishing, and marketing options. Software fee of $15 applies. Course Lab fee of $10 for computers applies.

MUSC 3030 
Jazz and Contemporary Arranging I 
2:2:0 
Fall 
Prerequisite(s): MUSC 1402, MUSC 2210 and University Advanced Standing

Develops skills in jazz arranging for small instrumental ensembles including trumpet, trombone, saxophone, piano, guitar, bass, and drum set. Develops arranging strategies such as instrumental textures (homophony, polyphony, unison, and combination texture), harmonization using approach techniques (diminished approach, chromatic approach, dominant approach, etc.), and voicing techniques (4-way close, drop 2, quartal voicings, slash chords). Implements strategies for planning and executing a successful arrangement. Offers the opportunity for students to have their arrangements performed and recorded by a UVU Jazz Combo.

MUSC 3031 
Jazz and Contemporary Arranging II 
2:2:0 
Spring 
Prerequisite(s): MUSC 3030 and University Advanced Standing

Develops advanced arranging techniques for large instrumental jazz ensembles. Examines and analyzes scores by major composers. Offers students the opportunity to create original arrangements for large jazz ensemble.

MUSC 306R 
Advanced Keyboard Skills 
1:0:2 
Fall, Spring 
Corequisite(s): MUSC 250R or MUSC 450R or MUSC 455R

Provides advanced study in piano technique, sight-reading, and ensemble skills. Develops pedagogical skills through masterclasses and teaching beginners. May be repeated for maximum of 12 credits toward graduation.

MUSC 3120 
Form and Analysis 
3:3:0 
Fall, Spring 
Prerequisite(s): MUSC 2110 and University Advanced Standing

Explores the structure, meaning and organization of music. Concentrates on the standard practices of European-sphere music since 1600. Teaches techniques for understanding and classifying musical structure. Places techniques and knowledge from the first three semesters of music theory into a comprehensive whole.

MUSC 3150 
Advanced Instrumental Conducting 
2:2:0 
Spring 
Prerequisite(s): MUSC 2350 and University Advanced Standing

Teaches advanced baton techniques, score preparation and basic rehearsal procedures for instrumental ensembles.

MUSC 320R 
Masterworks Chorale 
1:0:3 
On Sufficient Demand 
Prerequisite(s): Audition

Provides group training in the various styles of choral literature. Requires attendance at scheduled performances. May be repeated as desired. Course fee of $20 for support applies.

MUSC 322R 
Chamber Choir 
1:0:4 
Fall, Spring 
Prerequisite(s): Audition

For the advanced singer desiring experience in choral performance. Provides the opportunity of performing in a small group of select singers. Studies music of various styles and periods. Requires participation in concerts, programs, and tours. May be repeated as desired. Course Lab fee of $15 for support applies.

MUSC 327R 
Men's Choir 
1:0:3 
Fall, Spring 
Prerequisite(s): Audition

Provides male vocalists with advanced individual and ensemble training. Includes emphasis on auditioning, rehearsal and performance etiquette, and ensemble skills and dynamics. Requires participation in concerts, programs and tours. May be repeated as desired. Course Lab fee of $20 for support applies.

MUSC 328R 
Women's Choir 
1:0:3 
Fall, Spring 
Prerequisite(s): Audition

Provides female vocalists the opportunity to perform in a select group of treble singers. Studies music of various styles and periods. Requires participation in concerts, programs, and tours. May be repeated as desired. Course fee of $20 for support applies.

MUSC 330R 
Wind Symphony 
1:0:4 
Fall, Spring 
Prerequisite(s): Audition

Improves musical performance skills by participation in the band. Studies and performs serious concert literature. Requires attendance at all concerts, performances, and acquisition of performance attire. May be repeated as desired.

MUSC 331R 
Percussion Ensemble 
1:0:3 
Fall, Spring 
Prerequisite(s): Audition

Provides percussion ensemble experience. Emphasis on sight reading and music performance skills. Attendance is expected at all concerts, rehearsals, and tours. May be repeated as desired.
Course Descriptions

MUSC 332R
Jazz Orchestra
1:0:4  Fall, Spring
* Prerequisite(s): Audition
Provides the advanced instrumentalist the opportunity to perform traditional and contemporary repertoire for large jazz ensemble. Improvisational and sight-reading skills are emphasized. Requires attendance at all performances. May be repeated as desired.

MUSC 333R
Small Jazz and Commercial Ensembles
1:0:2  Fall, Spring
* Prerequisite(s): Audition
Provides the advanced instrumentalist and vocalist the opportunity to perform in small ensembles specializing in jazz and other commercial styles including, pop, rock, country, funk, reggae, hip hop, etc. Emphasizes improvisation, rhythmic skills, and knowledge of harmony. Requires attendance at all performances. May be repeated as desired.

MUSC 334R
Pep Band
1:0:2  Fall, Spring
* Prerequisite(s): Audition
Provides opportunities to perform band literature for athletic events, including home games, playoffs and championships. Requires participation at all rehearsals and assigned games. May be repeated as desired.

MUSC 3410
Elementary Music Methods I
2:2:0  On Sufficient Demand
* Prerequisite(s): MUSC 2110 and University Advanced Standing
Teaches the sequence, tools, materials, and philosophy of teaching musical concepts to children in grades K-3. Develops skill on classroom instruments.

MUSC 3411
Elementary Music Methods II
2:2:0  On Sufficient Demand
* Prerequisite(s): MUSC 2110, MUSC 3410, and University Advanced Standing
Teaches the sequence, tools, materials, and philosophy of teaching musical concepts to children in grades 4-6. Develops skill on classroom instruments.

MUSC 3412
Music Career Development
3:3:0  Spring
* Prerequisite(s): MUSC 2110 and University Advanced Standing
Examines various career options in the music industry. Covers the identification of audience and client and the process of supplying products appropriate to their needs. Includes advertising, client relations, social media, and creating an online presence. Explores the development of funding sources for music projects and basic music accounting practices. Covers sync fees, performance rights organizations (PRO), and multiple streams of income through royalties. Software fee of $15 applies. Course Lab fee of $10 for computers applies.

MUSC 3415
Instrumental Pedagogy and Literature I
2:2:0  Fall
* Prerequisite(s): University Advanced Standing
* Prerequisite(s) or Corequisite(s): MUSC 2110
Provides students the opportunity to study the pedagogy and literature of their major instrument. Examines various pedagogical approaches and incorporates in-class teaching demonstrations. Includes the selection of appropriate solo and chamber literature for beginning and intermediate levels.

MUSC 3416
Instrumental Pedagogy and Literature II
2:2:0  Spring
* Prerequisite(s): MUSC 3415 and University Advanced Standing
Provides students the opportunity to study the pedagogy and literature of their major instrument. Examines various pedagogical approaches and incorporates in-class teaching demonstrations. Includes the selection of appropriate solo and chamber literature for advanced levels.

MUSC 3450
Music History and Literature I
3:3:0  Fall
* Prerequisite(s): MUSC 2125 and University Advanced Standing
Covers the history of European music from ancient times to the Classic era. Surveys periods, genres, composers, works, performance practice, and sources. Emphasizes musical meaning, style, and interpretation.

MUSC 3451
Music History and Literature II
3:3:0  Spring
* Prerequisite(s): MUSC 3450 and University Advanced Standing
Covers the history of European-sphere music from the Classic era to the present. Surveys periods, genres, composers, works, performance practice and sources. Emphasizes musical meaning, style, and interpretation.

MUSC 3460R
Commercial Music Private Lessons
1:1:0  Fall, Spring, Summer
* Prerequisite(s): MUSC 250R and University Advanced Standing
Offers twelve 30-minute private lessons. Focuses on the individual needs of the student, developing skills and techniques in commercial composition, production, or improvisation. May be repeated as desired. Course fee of $270 for private instruction applies.

MUSC 3620
Percussion Techniques I
1:1:1  Fall
* Prerequisite(s) or Corequisite(s): MUSC 2110
Prepares music education majors in the pedagogy and methods of percussion instruments for beginning players.

MUSC 3621
Percussion Techniques II
1:1:1  On Sufficient Demand
* Prerequisite(s): MUSC 3620 and University Advanced Standing
Prepares music education majors in the pedagogy and methods of percussion instruments for intermediate players in secondary school programs.

MUSC 3630
Vocal Techniques
1:1:1  Spring Odd Year
* Prerequisite(s): University Advanced Standing
* Prerequisite(s) or Corequisite(s): MUSC 2110
Provides an introduction to vocal pedagogy and basic choral concepts for music education majors. Focuses on principles of healthy vocal production. Covers vocal anatomy, breath energy, phonation, resonance, articulation, registration, warm-ups, basic diction, ensemble singing, and working with adolescent voices. Involves solo and ensemble singing, rehearsal conducting, and private teacher observations.

MUSC 3649
String Techniques I
1:1:1  Fall Even Year
* Prerequisite(s): University Advanced Standing
* Prerequisite(s) or Corequisite(s): MUSC 2110
Studies the pedagogical process of a beginning and intermediate string class. Covers strategies for the recruitment and organization of an orchestra program. Discusses the selection and maintenance of string instruments, accessories and supplies.

MUSC 3650
String Techniques II
1:1:1  On Sufficient Demand
* MUSC 3649 and University Advanced Standing
Provides additional instruction in string performance skills. Studies the pedagogical process of an advanced string class. Covers the planning and execution of effective rehearsals. Discusses choices for method books and orchestra literature.

MUSC 3659
Woodwind Techniques I
1:1:1  Fall Odd Year
* Prerequisite(s): University Advanced Standing
* Prerequisite(s) or Corequisite(s): MUSC 2110
Teaches basic performing skills on the clarinet and saxophone including tone production, articulation, registers and fingerings. Studies pedagogical processes, methods and literature. Covers strategies for the recruitment and organization of a band program. Discusses instrument selection and maintenance, reeds and accessories.

MUSC 3660
Woodwind Techniques II
1:1:1  On Sufficient Demand
* Prerequisite(s): MUSC 3659 and University Advanced Standing
Provides performance instruction on the flute, oboe, and bassoon. Studies pedagogical processes and choices for method books and band literature. Covers the planning and execution of effective rehearsals. Discusses instrument selection and maintenance, reeds and accessories.
MUSC 3679  
Brass Techniques I  
1:1:1  
Spring Even Year  
* Prerequisite(s): University Advanced Standing  
* Prerequisite(s) or Corequisite(s): MUSC 2110

Teaches basic performing skills on the trumpet and French horn. Studies the assembly, mechanism, embouchure formation, tone, breath control, intonation and fingerings of each instrument. Discusses brand selection, accessories, equipment supplies and instrument care. Covers pedagogical processes, repertoire and method resources.

MUSC 3680  
Brass Techniques II  
1:1:1  
On Sufficient Demand  
* Prerequisite(s): MUSC 3679 and University Advanced Standing

Provides basic performance instruction on the trombone, euphonium and tuba. Studies the assembly, mechanism, embouchure formation, tone, breath control, intonation and fingerings of each instrument. Covers rehearsal strategies and literature selection. Discusses choices for instrument brands, accessories and supplies.

MUSC 3690  
Jazz Practicum  
1:1:1  
On Sufficient Demand  
* Prerequisite(s): (MUSC 3659 or MUSC 3679) and University Advanced Standing

Provides a practical study of basic jazz performance, improvisation, transcription, styles, history and rehearsal techniques. Prepares students to teach jazz.

MUSC 370R  
Symphony Orchestra  
1:0:4  
Fall, Spring  
* Prerequisite(s): Audition

Provides opportunity to improve musical performance skills by participating in orchestra. Studies and performs serious concert literature from all periods of music history. Requires attendance at all concerts, rehearsals, tours and acquisition of performance attire. May be repeated as desired.

MUSC 372R  
Chamber Orchestra  
1:0:2  
Fall, Spring  
* Prerequisite(s): Audition

Provides smaller orchestra experience. Improves individual and ensemble performance skills. Studies and performs serious concert literature from all periods of music history. Attendance is expected at all concerts, rehearsals, and tours. Audition is required. May be repeated as desired.

MUSC 373R  
Advanced Small Ensembles  
1:0:2  
Fall, Spring  
* Prerequisite(s): Instructor Approval

Provides opportunities for performing in small groups of select musicians. Studies music of various styles and periods. Some public performances will be required. May be repeated as desired.

MUSC 379R  
Studio Recording Workshop  
1:0:2  
Spring  
* Prerequisite(s): University Advanced Standing  
* Prerequisite(s) or Corequisite(s): MUSC 1400

Provides performance opportunities in a contemporary recording studio environment. Examines the interrelating roles of performer, engineer, and producer. May be repeated for a maximum of 6 credits toward graduation. Lab access fee of $10 for computers applies. Software fee of $140 for computers applies.

MUSC 3800  
Junior Recital  
1:0:3  
Fall, Spring, Summer  
* Prerequisite(s): University Advanced Standing  
* Corequisite(s): MUSC 450R or MUSC 455R

Provides a solo recital experience for students during their junior year.

MUSC 410R  
Music Composition  
2:2:0  
Fall  
* Prerequisite(s): University Advanced Standing  
* Prerequisite(s) or Corequisite(s): MUSC 2110

Builds on compositional techniques for music majors. Explores historical and contemporary techniques, repertoire, and concepts with an emphasis on creating and performing an original piece. Provides opportunities for students to explore their own creative process and demonstrate their knowledge through composition projects. May be repeated for a maximum of 8 credits toward graduation. Software fee of $15 applies. Course Lab fee of $10 for computers applies.

MUSC 4130  
Scoring and Arranging  
2:2:0  
Fall  
* Prerequisite(s): MUSC 3120 and University Advanced Standing

Studies techniques of scoring and arranging music for orchestra, band, choir, and small ensembles. Software fee of $15 applies. Course Lab fee of $10 for computers applies.

MUSC 4140  
Counterpoint  
3:3:0  
Not Offered  
* Prerequisite(s): MUSC 3120 and University Advanced Standing

Teaches the techniques of combining melodic voices in a historical context. Covers concepts from the entire span of music history since the emergence of polyphony around the twelfth century. Emphasizes the disciplines of sixteenth- and eighteenth-century counterpoint. Software fee of $15 applies. Course Lab fee of $10 for computers applies.

MUSC 4150  
Advanced Choral Conducting  
2:2:0  
Spring  
* Prerequisite(s): MUSC 2350 and University Advanced Standing

Develops advanced baton techniques, score preparation and basic rehearsal procedures for choral organizations. Explores advanced tools of coordination and musician ship, and covers communication and score analysis.

MUSC 420R  
Film Scoring  
2:2:0  
Spring  
* Prerequisite(s): MUSC 410R and University Advanced Standing

Covers theoretical concepts, creative and collaborative methods, and practical experiences in the process of creating music for film and video. Includes elements of film score history, dramatic structure, collaboration, spotting, musical structure and form (including leitmotif and variation), timing, temp tracks, digital mockups and production demos, recording and mixing film music, copyright and contractual concerns, developing a portfolio of musical scoring work. Activities include lecture/discussion of theoretical principles, analysis of masterworks in the film music genre, and production of a student-scored film/video clip. May be repeated as desired. Software fee of $140 applies. Course Lab fee of $10 for computers applies.

MUSC 4220  
Choral Literature and Methods  
2:2:1  
Fall  
* Prerequisite(s): MUSC 2350 and University Advanced Standing

Studies the process of developing a successful school choral program. Analyzes the quality of choral literature and its suitability for various skill levels. Studies effective rehearsal management strategies. Examines current resources and systems for choral program administration. Develops skills in singing, score analysis, conducting techniques, section leading, and microteaching.

MUSC 4221  
Advanced Choral Literature and Methods  
2:2:1  
Spring  
* Prerequisite(s): MUSC 4220 and University Advanced Standing

Provides further examination of the processes involved in developing a successful school choral program. Studies the history and performance practices of stylistic periods of choral literature. Provides opportunities to plan and lead choral ensemble rehearsals. Includes preparations of materials for professional portfolios. Covers strategies for long-term professional development.

MUSC 422R  
Commercial Music Performance Workshop  
1:0:4  
Fall, Spring  
* Prerequisite(s): University Advanced Standing  
* Corequisite(s): MUSC 250R or MUSC 450R or MUSC 455R or MUSC 360R

Provides experience performing various styles of commercial music. Explores techniques required in the performance of contemporary styles. Addresses stage presence analysis and provides opportunities for students to explore various performance techniques. Discusses the control of performance anxiety. Practices the basic techniques of stage presentation, lighting, stage direction, and costuming. Develops advanced-level commercial performance proficiency. May be repeated for a maximum of 8 credits toward graduation.
Course Descriptions

MUSC 423R
Opera Workshop
1:0:4 Fall, Spring
* Corequisite(s): MUSC 250R or MUSC 450R
* Prerequisite(s) or Corequisite(s): MUSC 455R

Provides experience performing scenes from opera. Explores the techniques of dramatic characterization and stage craft. Addresses the process of character analysis. Discusses the control of performance anxiety. Practices the basic techniques of stage makeup andcostuming. Develops advanced-level singing proficiency. May be repeated for a maximum of 12 credits toward graduation. Course Lab fee of $100 for support applies.

MUSC 4240
Vocal Pedagogy
2:2:0 Fall
* Prerequisite(s): MUSC 2002 and University Advanced Standing

Provides instruction centered on the art and science of vocalization as it pertains to teaching in a studio scenario and in personal study. Presents varied teaching methods for vocal instruction in group and one-to-one situations. Provides students the opportunity to teach and receive immediate peer and instructor evaluations on the efficacy of their teaching style and lesson content.

MUSC 4340
Marching Band Techniques
1:1:1 Fall
* Prerequisite(s): University Advanced Standing


MUSC 4360
Instrumental Literature and Methods
2:2:1 Spring
* Prerequisite(s): MUSC 2350 and University Advanced Standing

Studies literature, methodology, and administration of a junior high school instrumental music program.

MUSC 4370
Advanced Instrumental Literature and Methods
2:2:1 Spring
* Prerequisite(s): MUSC 2350, MUSC 4360, and University Advanced Standing

Studies literature, methodology, and administration of a high school instrumental music program.

MUSC 450R
Advanced Private Lessons for Music Majors
1:1:0 Fall, Spring, Summer
* Prerequisite(s): Sophomore Review required and University Advanced Standing
* Corequisite(s): MUSC 451R

Offers twelve 60-minute private lessons for music majors. Focuses on the individual needs of the student in developing advanced skills and techniques. Requires participation in weekly performance class. Includes juried evaluations. May be repeated as desired. Course fee of $443 for support applies.

MUSC 451R
Performance Class
1:1:0 Fall, Spring, Summer
* Prerequisite(s): University Advanced Standing
* Corequisite(s): MUSC 450R or MUSC 455R

Provides advanced performance experience for music majors. Develops an ability to offer and receive constructive criticism. Explores performance-related topics such as practice strategies, performance anxiety, interpretive phrasing, technical mastery, memorization and jury preparation. May be repeated for a maximum of 12 credits toward graduation.

MUSC 455R
Private Lessons for Music Performance Majors
2:2:0 Fall, Spring, Summer
* Prerequisite(s): BM in Performance major, Sophomore Review, and University Advanced Standing
* Corequisite(s): MUSC 451R

Offers twelve 60-minute private lessons for music performance majors. Focuses on the individual needs of the student in developing advanced skills and techniques. Requires participation in weekly performance class. Includes recital preparation and juried evaluations. May be repeated as desired. Course fee of $443 for recital preparation applies.

MUSC 470R
Studio Arranging and Producing
3:3:0 Fall, Spring
* Prerequisite(s): MUSC 2400, MUSC 3120, and University Advanced Standing

Covers theoretical concepts of arranging and production in the recording studio in various styles and applications. Incorporates practical experience in a working professional studio. Applies principles of orchestration, both traditional and contemporary, in the classroom and studio environment. Emphasizes communication skills with recording artists, musicians and engineers. Covers logistical protocols for scheduling, booking of studios and musicians, studio demeanor and ethics, and working with clients. May be repeated for a maximum of 12 credits towards graduation. Software fee of $140 applies. Course Lab fee of $10 for computers applies.

MUSC 4780
Pre-Service Student Teaching
2:2:0 Fall, Spring
* Prerequisite(s): University Advanced Standing
* Prerequisite(s) or Corequisite(s): MUSC 4221, MUSC 4360, or MUSC 4370

Provides placement in a secondary public school setting in one weekly class or ensemble in preparation for the final student teaching experience. Requires score preparation, assistance with sectionals, teaching music literacy concepts and mini lessons, and other work as assigned by the supervisor and cooperating teacher. Includes peer observations in various school settings. Provides formal observations by content faculty.

MUSC 4785
Student Teaching Seminar
2:2:0 Fall, Spring
* Prerequisite(s): University Advanced Standing

Provides support for the student teaching experience. Includes classroom management, ongoing content mentorship, supervision of conducting and score preparation, faculty and peer feedback, and assistance with senior portfolio. Requires written assignments and off-campus peer observations.

MUSC 4800
Senior Recital
1:0:3 Fall, Spring, Summer
* Prerequisite(s): University Advanced Standing
* Corequisite(s): MUSC 450R or MUSC 455R

Provides a solo recital experience for students during their senior year.

MUSC 481R
Internship in Music II
1 to 8:1 to 8:0 Fall, Spring, Summer
* Prerequisite(s): Departmental Approval and University Advanced Standing

Provides an opportunity for upper-division students to receive college credit and work in a music-related field. Offers students the opportunity to focus on a specific career path and prepare themselves to enter the profession. Applies academic concepts to actual work experiences. Requires approval of faculty sponsor and completion and acceptance of application. Also requires completion of an orientation, completion of Master Agreement between UVU and employer, completion of goals and tasks as required by academic department, and completion of final evaluation. May be repeated for a total of 8 credits towards graduation. May be graded credit/no credit.

MUSC 490R
Advanced Independent Study
1 to 3:0 to 9 Fall, Spring, Summer
* Prerequisite(s): MUSC 3120 and University Advanced Standing

Individual projects to be negotiated by student and instructor on a case-by-case basis. May be repeated for a maximum of 12 credits toward graduation.

MUSC 492R
Advanced Topics in Music
1 to 3:1 to 3:0 Spring
* Prerequisite(s): MUSC 3120, departmental approval, and University Advanced Standing; Certain topics may require other prerequisite

Examines advanced topics in music. Examples could include historical, theoretical, or pedagogical topics such as Schenkerian analysis or 16th century counterpoint. May be repeated for a maximum of 9 credits toward graduation. Software fee of $140 applies. Course Lab fee of $10 for computers applies.
National Security Studies (NSS)

NSS 2010
Introduction to National Security
3:3:0 Fall, Spring
* Prerequisite(s): ENGL 1010; HIST 1700 or HIST 2700 or POLS 1100 or CJ 1010
Categorizes elements of the national security field. Explores the national security system, focusing on contemporary issues. Analyzes formulation and execution of national security policy through diplomacy, intelligence operations, and military force.

NSS 301R
National Security Area Studies
3:3:0 Fall, Spring
* Prerequisite(s): University Advanced Standing; POLS 1100, HIST 1700, or HIST 2700, or CJ 1010
Examines the national security issues associated with a particular geographic area in the global community. May be repeated for a maximum of 9 credits toward graduation.

NSS 3050
US Intelligence Community
3:3:0 Summer
* Prerequisite(s): University Advanced Standing
Examines the US Intelligence Community (IC) and its core responsibilities and processes. Assesses the IC's two-fold role to support policy makers and operations, the customer-driven intelligence production cycle, how national foreign intelligence requirements are generated and prioritized, what activities are authorized and which activities are prohibited, intelligence oversight by Congress, and privacy concerns. Evaluates the missions, roles, responsibilities, and authorities of the (IC) constituent agencies and assess the IC's intelligence collection disciplines.

NSS 4210
Law of War
3:3:0 On Sufficient Demand
* Prerequisite(s): University Advanced Standing; POLS 1100, HIST 1700, HIST 2700, or CJ 1010
Examines the law that governs situations of armed conflict, including the history and development of the law. Assesses major contemporary issues in this area of the law, to include detention policy, drone warfare, terrorism as a tactic of war, and preemptive force.

NSS 4250
National Security Career Strategies
3:3:0 Summer
* Prerequisite(s): NSS 2010; University Advanced Standing
Emphasizes the development of effective techniques for successfully locating, applying for and securing employment as well as advancing in a National Security-related career path. Includes industry and job research, demonstration, role play, development of writing materials, and application exercises. Provides preparation for internship and career entry experience.

NSS 4300
Intelligence Cycle and Collections
3:3:0 Spring
* Prerequisite(s): NSS 2010, NSS 3050, and University Advanced Standing
Describes the intelligence collection and production cycle. Evaluates the nature, organization, activities, and key issues surrounding the methods of intelligence and counterintelligence collection. Examines historical development and utilization of the dominant collection activities, including human intelligence, geospatial intelligence, signals intelligence, measurement and signature intelligence, and their role in American statecraft. Explores significant policy issues related to intelligence collection in the U.S. experience, including legal, moral, ethical, organizational, strategic, and performance issues, and measures of effectiveness. Applies specific skills in writing and open source intelligence collection.

NSS 4400
Statecraft and Strategy
3:3:0 Spring
* Prerequisite(s): NSS 2010
Analyzes the theory, history, practice, and challenges of statecraft and strategy in U.S. national security. Examines the various methods of statecraft that are available to policymakers. Evaluates how these methods have been used successfully in the pursuit of national interests and purposes. Assesses instruments of national power, including military power; economic strategy; intelligence; the use of information, disinformation, and propaganda; various types of diplomacy, political, moral, and psychological influence; and other instruments of soft power.

NSS 4600
National Security Law
3:3:0 Spring
* Prerequisite(s): University Advanced Standing; POLS 1100, HIST 1700, HIST 2700, or CJ 1010
Evaluates the distribution of national security powers amongst the three branches of government. Reviews the laws and policies that govern the legality of war, military operations in wartime, intelligence collection, protection of national security information, foreign intelligence surveillance, covert action, special military operations, offensive counterterrorism operations, detention and interrogation of terrorism suspects, and other current issues in the national security area.

NSS 475R
Current Topics in National Security
3:3:0 Fall, Spring
* Prerequisite(s): University Advanced Standing; POLS 1100, HIST 1700, HIST 2700, or CJ 1010
Presents selected topics in National Security and will vary each semester. Requires a special project related to the area of study. May be repeated with different topic areas for a maximum of 9 credits toward graduation.

NSS 4800
Intelligence Analysis and Tradecraft
3:3:0 Spring
* Prerequisite(s): University Advanced Standing
Appraises structured analytic techniques commonly embraced as sound tradecraft within the Intelligence Community (IC) and applies these techniques in the context of actual intelligence cases. Applies the structured analytic techniques of decomposition and visualization, idea generation, scenarios and indicators, hypothesis generation and testing, assessment of cause and effect, challenge analysis, and decision support. Evaluates IC analytic standards and discuss ethical considerations.

NSS 481R
National Security Internship
1 to 9:1 to 9:0 Fall, Spring, Summer
* Prerequisite(s): University Advanced Standing
Provides academic credit for work for students in a paying or non-paying (volunteer) job for a national security employer or other approved related situation. Emphasizes successful work experience with emphasis on identifying and solving problems. May be repeated for a maximum of 9 credits toward graduation. May be graded credit/no credit.

NSS 491R
Directed Readings and Special Projects in National Security
1 to 3:1 to 3:0 Summer
* Prerequisite(s): University Advanced Standing
Offers independent study as directed in reading, individual projects, etc., at the discretion and approval of the department chair. May be repeated for a maximum of 9 credits.

NSS 4990
National Security Capstone Seminar
3:3:0 On Sufficient Demand
* Prerequisite(s): NSS 2010, NSS 301R, NSS 4600, NSS 475R, and University Advanced Standing
Includes readings and discussions about a variety of complex national security problems and issues. Offers directed research project tailored to each student's special interests.

NSS 6500
US National Security Policy and Strategy
3:3:0 Spring
* Prerequisite(s): Acceptance into the Masters of Public Services Program or department approval
Examines how the United States formulates national security policy and strategy. Analyzes conceptual foundations, organizational structures and functions, decision-making processes, and priority issues in US national security. Assesses the role and authorities of the President and Executive Branch, congressional oversight, national security policy development and implementation, the implementation and limits of national power, the role of intelligence, the relevant legal frameworks, and specific national security challenges.
**Course Descriptions**

**NSS 6600**
State Responses to Terrorism-Counterterrorism in a Collaborative Environment  
3:3:0  Spring  
* Prerequisite(s): Acceptance into the Masters of Public Services Program  
Outlines how federal, state, and local law enforcement have developed a standardized information sharing process in an effort to mitigate terror attacks. Analyzes state fusion centers, intelligence-led policing, community engagement, and multi-agency emergency response plans. Utilizes practical lecture, table top exercise, and case studies, to demonstrate how states act independently to prevent, thwart, and mitigate acts of terror stemming from domestic terrorists, transnational terrorist organizations, and inspired lone offenders.

**NSS 6700**
Intelligence Analysis and Tradecraft  
3:3:0  Fall  
* Prerequisite(s): Acceptance into the Masters of Public Services Program  
Appraises structured analytic techniques commonly embraced as sound tradecraft within the Intelligence Community (IC) and applies these techniques in the context of actual intelligence cases. Applies the structured analytic techniques of decomposition and visualization, idea generation, scenarios and indicators, hypothesis generation and testing, assessment of cause and effect, challenge analysis, and decision support. Evaluates IC analytic standards and discuss ethical considerations.

**NSS 6800**
U.S. Military-Strategy and Structure  
3:3:0  Fall  
* Prerequisite(s): Acceptance into the Masters of Public Services Program  
Examines the U.S. Military services, commands, and agencies, and its core responsibilities and processes. Assesses the historical roles that the U.S. Military has played in American national security policy. Evaluates the United States' military strategy. Evaluates the relationship between strategy and structure in current U.S. military doctrine and policy.

**Nursing (NURS)**

**NURS 2210**
Practical Nurse to Registered Nurse  
1:1:0  Fall, Spring  
* Prerequisite(s): Licensure as a Practical Nurse; acceptance into ASN in Nursing program  
Introduces the role of the registered nurse in providing patient-centered, safe, and quality care for adults in health care settings. Emphasizes the use of assessment to plan patient care and evaluate patient outcomes. Includes the functions of the registered nurse in the interprofessional healthcare team.

**NURS 2220**
Practical Nurse to Registered Nurse  
1:1:0  Fall, Spring  
* Prerequisite(s): Acceptance into ASN/BSC Nursing program  
Introduces the role of the registered nurse in providing patient-centered, safe, and quality care for adults in health care settings. Emphasizes the use of assessment to plan patient care and evaluate patient outcomes. Includes the functions of the registered nurse in the interprofessional healthcare team.

**NURS 2300**
Nursing Health Assessment  
1:1:0  Fall, Spring  
* Prerequisite(s): Acceptance into ASN/BSC Nursing program  
* Corequisite(s): NURS 2305  
Introduces the health history interview and physical assessment for patients across the lifespan. Uses a holistic approach in identifying health care needs of the patient within the context of standards of nursing practice.

**NURS 2305**
Nursing Health Assessment Laboratory  
1:0:3  Fall, Spring  
* Prerequisite(s): Acceptance into ASN/BSC Nursing program  
* Corequisite(s): NURS 2300  
Integrates knowledge, behaviors and skills from current and previous courses in lab and simulation settings. Prepares students to enter the clinical setting. Course Lab fee of $55 applies.

**NURS 2310**
Nursing Pharmacology  
3:3:0  Fall, Spring  
* Prerequisite(s): CHEM 1110 and ZOOL 2240  
* Prerequisite(s) or Corequisite(s): ZOOL 2420  
Examines general principles of drug therapies, including medication administration, pharmacotherapeutics, and dosage calculations. Focuses on major drug categories and prototypes in each category. Serves as a basis for understanding drug therapy as an important part of health care.

**NURS 2320**
Fundamentals of Nursing Care  
2:2:0  Fall, Spring  
* Prerequisite(s): Acceptance into ASN/BSC Nursing program  
* Corequisite(s): NURS 2325  
* Prerequisite(s) or Corequisite(s): NURS 2300  
Promotes safe patient care for individuals across the lifespan. Emphasizes nursing interventions based on an individualized patient assessment to promote quality care and risk reduction. Course fee of $68 for online assessment & review tools applies.

**NURS 2325**
Nursing Practice Simulation and Skills Lab I  
2:0:6  Fall, Spring  
* Prerequisite(s): Acceptance into ASN/BSC Nursing program  
* Corequisite(s): NURS 2320  
* Prerequisite(s) or Corequisite(s): NURS 2300  
Provides opportunity to practice safe patient care for patients across the lifespan. Integrates knowledge, behaviors and skills from current and previous courses in lab, simulation and clinical settings. Prepares students to engage in the clinical setting and provide basic nursing care. Course Lab fee of $112 applies.

**NURS 2410**
Nursing Care of Adults with Common Health Needs  
3:3:0  Fall, Spring  
* Prerequisite(s): NURS 2320  
* Corequisite(s): NURS 2415  
* Prerequisite(s) or Corequisite(s): NURS 2420  
Incorporates theories of nursing care for adult patients with common health needs and builds upon concepts learned in current and previous courses. Emphasizes pharmacotherapeutics, clinical judgment, and health assessment, promotion, and teaching in caring for patients with common health needs. Integrates standards of nursing practice in caring for patients and their support systems. Course fee of $68 for online assessment & review tools applies.

**NURS 2415**
Nursing Care of Adults with Common Health Needs Clinical  
2:0:6  Fall, Spring  
* Prerequisite(s): NURS 2320  
* Corequisite(s): NURS 2410  
* Prerequisite(s) or Corequisite(s): NURS 2420  
Provides clinical opportunities to care for adult patients with common physiological problems in healthcare settings. Incorporates pharmacotherapeutics, clinical judgment, and health assessment, promotion, and teaching in management of patients with common health needs. Integrates standards of nursing practice in delivering care to patients and their support systems.

**NURS 2420**
Nursing Care of the Aging Population  
2:2:0  Fall, Spring  
* Prerequisite(s): NURS 2300, NURS 2310  
* Corequisite(s): NURS 2410  
Introduces the aging process and changes with aging. Identifies special needs of older adults and nursing interventions to meet those needs. Prepares students to meet the needs of the increasing elderly population including caring for patients with chronic illnesses and end-of-life concerns. Includes a service learning component requiring visits to a community setting with active seniors.
NURS 2430  
Mental Health Nursing  
2:2:0  
Fall, Spring  
* Prerequisite(s): NURS 2300, NURS 2310  
* Corequisite(s): NURS 2435  
Examines psychosocial and neurobiological aspects of disorders of cognition, mood and behavior. Explores trends in nursing and interprofessional care of persons with psychiatric disorders. Integrates standards of nursing practice in the core for patients with mental health needs and their support systems.

NURS 2435  
Mental Health Nursing Clinical  
1:0:3  
Fall, Spring  
* Prerequisite(s): NURS 2300, NURS 2310, NURS 2320  
* Corequisite(s): NURS 2430  
Provides clinical opportunities to care for patients with mental health needs. Integrates standards of nursing practice in delivery of care to patients and their support systems with an emphasis on mental health care.

NURS 2445  
Nursing Practice/Simulation/Skills Lab II  
1:0:3  
Fall, Spring  
* Prerequisite(s): NURS 2305 and NURS 2320  
* Corequisite(s): NURS 2410  
Integrates nursing knowledge, behaviors, and skills from current and previous courses in lab and simulation settings. Prepares students for care of patients with common health needs, mental health needs, and conditions related to aging. Course lab fee of $66 applies.

NURS 3310  
Nursing Care of Child Bearing Families  
2:2:0  
On Sufficient Demand  
* Prerequisite(s): NURS 2410 and University Advanced Standing  
* Corequisite(s): NURS 3315  
Builds on concepts learned in previous and concurrent courses to provide nursing care to families in the reproductive years. Emphasizes the child-bearing family, including physiological and psychosocial adaptation to pregnancy, birth, and the immediate newborn period, and disorders of the reproductive patient. Integrates nursing process in providing a holistic, collaborative approach to clients and families in secondary and tertiary settings such as physician offices, labor and delivery, mother/baby, clinical simulation, and others.

NURS 3315  
Nursing Care of Child Bearing Families Clinical  
1:0:3  
On Sufficient Demand  
* Prerequisite(s): NURS 2410 and University Advanced Standing  
* Corequisite(s): NURS 3310  
Provides clinical opportunities to provide nursing care to families in the reproductive years. Emphasizes the child-bearing family, including physiological and psychosocial adaptation to pregnancy, birth, and the immediate newborn period, and disorders of the reproductive patient. Integrates nursing process in providing a holistic, collaborative approach to clients and families in secondary and tertiary settings such as physician offices, labor and delivery, mother/baby, clinical simulation, and others.

NURS 3320  
Nursing Care of Child Rearing Families  
2:2:0  
Fall  
* Prerequisite(s): NURS 3310, NURS 3315, and University Advanced Standing  
* Corequisite(s): NURS 3325  
Integrates previously mastered principles of medical surgical nursing and normal child growth and development with the knowledge and skill to promote, maintain, and restore child health within the sociocultural context of the family. Explores application of the nursing process to safely meet common health problems of children from infancy through adolescence in clinical settings ranging from the laboratory to intensive care.

NURS 3325  
Nursing Care of Child Rearing Families Clinical  
1:0:3  
Fall  
* Prerequisite(s): NURS 3310, NURS 3315, and University Advanced Standing  
* Corequisite(s): NURS 3320  
Safely applies the nursing process to meet health problems of children from infancy through adolescence in clinical settings ranging from the laboratory to intensive care. Integrates previously mastered principles of medical surgical nursing and normal child growth and development with the knowledge and skill to promote, maintain, and restore child health within the sociocultural context of the family.

NURS 3330  
Nursing Care of Individuals with Complex Health Needs  
2:2:0  
Fall, Spring  
* Prerequisite(s): NURS 2410 and University Advanced Standing  
* Corequisite(s): NURS 3335  
* Prerequisite(s) or Corequisite(s): ZOOL 4400 highly recommended  
Incorporates aspects of evidence-based nursing practice. Prepares students to care for women, children, developing families, and individuals with complex and critical conditions. Course Lab fee of $44 applies.

NURS 3340  
Nursing Care of Women Children and Developing Families  
3:3:0  
Fall, Spring  
* Prerequisite(s): NURS 2410 and University Advanced Standing  
* Corequisite(s): NURS 3345  
Explores application of the nursing process to address health issues of women, children and developing families. Emphasizes safety and quality of nursing care.

NURS 3345  
Nursing Care of Women Children and Developing Families Clinical  
1:0:3  
Fall, Spring  
* Prerequisite(s): NURS 2415 and University Advanced Standing  
* Corequisite(s): NURS 3340  
Provides clinical and/or laboratory opportunities to apply the nursing process to address health issues of women, children and developing families.

NURS 3355  
Nursing Practice/Simulation/Skills Lab III  
1:0:3  
Fall, Spring  
* Prerequisite(s): NURS 2305 and University Advanced Standing  
* Corequisite(s): NURS 3330  
Integrates nursing knowledge, behaviors, and skills from current and previous courses in lab and simulation settings. Prepares students to care for women, children, developing families, and individuals with complex and critical conditions. Course Lab fee of $44 applies.

NURS 3400  
Patient Care Coordination and Management  
1:1:0  
Fall, Spring  
* Prerequisite(s): NURS 3330, NURS 3335, and University Advanced Standing  
* Corequisite(s): NURS 3405  
Focuses on the core roles of the nurse as a provider of care, manager of care, and member of the profession. Incorporates aspects of evidence-based nursing practice. Explores the scope of nursing practice related to national and local healthcare regulations. Course fee of $68 for online assessment & review tools applies.

NURS 3405  
Patient Care Coordination and Management Preceptorship  
2:0:6  
Fall, Spring  
* Prerequisite(s): NURS 3330, NURS 3335, and University Advanced Standing  
* Corequisite(s): NURS 3400  
Provides clinical experiences in coordinating and managing the care of a small group of patients. Focuses on the core roles of the nurse as a provider of care, manager of care, and member of the profession. Incorporates aspects of delegation, prioritization, time management, communication, and group dynamics.

NURS 3420  
Mentoring in Nursing  
1:1:0  
Fall, Spring  
* Prerequisite(s): NURS 2420 and University Advanced Standing  
Provides an opportunity for students to develop personal leadership and mentoring skills as they work with other nursing students and/or patients.
NURS 3440 Pharmacology for the Practicing Nurse 2:2:0 Fall, Spring * Prerequisite(s): NURS 3330 and University Advanced Standing

Emphasizes clinical judgement, patient teaching, and evaluation of patient outcomes. Explores in depth the pharmacodynamics, pharmacokinetics, and pharmacotherapeutics of medications and complementary and integrative health therapies.

NURS 3445 Nursing Practice Simulation and Skills Lab IV 1:0:3 Fall, Spring * Prerequisite(s): NURS 3355 and University Advanced Standing

Integrates nursing knowledge, behavior, and skills from current and previous courses in lab and simulation settings. Preparers students for entry-level practice as a registered nurse. Course Lab fee of $30 applies.

NURS 4120 Rapid Response Concepts Across the Lifespan 2:2:0 Fall * Prerequisite(s): Completion of an Associate degree in nursing.

Prepares registered nurses to respond to, stabilize and transport adult and pediatric patients experiencing life threatening emergencies in hospital and prehospital settings. Enhances skills in the diagnosis and treatment of patients requiring care by a rapid response team, through didactic instruction and active participation in simulated cases. Course Lab fee of $50 applies.

NURS 4130 Critical Care in Nursing 2:2:0 Spring * Prerequisite(s): NURS 3330 and University Advanced Standing

Expands upon nursing care of individuals with complex disorders. Focuses on nursing in the critical care setting and includes specialized topics such as: nursing assessment, equipment, diagnostic tests, medication administration, ECG monitoring and standard nursing care of the client with an acute illness.

NURS 4210 Concepts in Child Bearing 2:2:0 Fall * Prerequisite(s): NURS 3310 and University Advanced Standing

Introduces the student to special concepts related to the child bearing family, including legal and ethical questions that relate to childbearing. Discusses local and global issues in childbearing.

NURS 4220 Pediatric Acute Care Nursing 2:2:0 Spring * Prerequisite(s): NURS 3340 and University Advanced Standing

Applies the nursing process to provide family centered nursing care to hospitalized children from birth through adolescence. Explores and examines sociocultural, economic, developmental, emotional and physiologic factors which influence ill newborns or children and their families.

NURS 4230 Palliative Care in Nursing 3:3:0 Fall, Spring * Prerequisite(s): NURS 2410 and University Advanced Standing

Describes the principles of palliative care nursing throughout the illness trajectory. Explores personal emotions, beliefs and values in understanding the nature of suffering. Examines basic principles of palliative care within a quality of life framework.

NURS 4240 Promoting Active Senior Lifestyles 2:1:3 Fall * Prerequisite(s): University Advanced Standing * Prerequisite(s) or Corequisite(s): NURS 2410, NURS 2415, and NURS 2420

Explores the importance of an active lifestyle throughout the lifespan. Includes service learning experiences in health screening, health promotion teaching, and observation of active senior adults. May require overnight travel.

NURS 4300 Nursing Theory 2:2:0 Spring * Prerequisite(s): NURS 2410 and University Advanced Standing

Examines various nursing models and theories which influence current nursing practice. Explores essential and interdependent relationships among knowledge, theory, research, and nursing practice. Assists students to conduct a basic assessment of a theory and gain insight into the development of their individual philosophies of nursing practice.

NURS 4320 Nursing in the Community 2:2:0 Fall, Spring, Summer * Prerequisite(s): NURS 3405 and University Advanced Standing * Corequisite(s): NURS 4325

Explores professional nursing practice in community-based and community-focused settings to promote and preserve the health of populations. Emphasizes nursing's impact on behaviors that promote health and reduce risk. Includes principles of family and community assessments, epidemiology, and environmental health.

NURS 4325 Nursing in the Community Clinical 1:0:3 Fall, Spring, Summer * Prerequisite(s): NURS 3405 and University Advanced Standing * Corequisite(s): NURS 4320

Applies professional nursing practice in community-based and community-focused settings to promote and preserve the health of populations. Utilizes family and community assessments, epidemiological and environmental health principles to plan and implement health promotion and risk reduction programs within the community.

NURS 4340 Genomics in Nursing and Health 2:2:0 Fall, Spring * Prerequisite(s): NURS 3330 and University Advanced Standing

Explores the expanding science of genomics and related fields, with emphasis on implications for nursing practice. Examines current and developing genetic and genomic concepts and technologies as they relate to nursing practice and health.

NURS 441G Nursing in Global Perspective 3:3:0 Fall, Spring * Prerequisite(s): NURS 2300 and University Advanced Standing

Explores nursing and health care issues in a global perspective to promote culturally competent health care in a diversifying population.

NURS 4500 Nursing Leadership 3:3:0 Fall, Spring * Prerequisite(s): NURS 3405 and University Advanced Standing

Explores leadership concepts and assists students to develop knowledge and skills necessary for leadership in nursing care delivery. Discusses leadership concepts related to nursing roles as providers of care, managers of care and members of the profession.

NURS 4510 Clinical Assessment and Reasoning 2:2:0 Fall, Spring * Prerequisite(s): NURS 3405 and University Advanced Standing

Develops skills of systematic history taking, clinical examination and clinical reasoning with a focus on people with complex health problems. Explores critical thinking skills and habits as well as nursing process and other clinical judgment models.

NURS 4520 Navigating Health Systems 3:3:0 Fall, Spring * Prerequisite(s): NURS 3405 and University Advanced Standing

Examines health systems, including the relationships between delivery, access, utilization and patient outcomes. Explores how organizational and economic structures, political, sociocultural, and legal factors influence the design and functions of health services.

NURS 4540 Research and Theory in Nursing Practice 4:4:0 Fall, Spring * Prerequisite(s): NURS 3330, completion of a university-level statistics course with a minimum C or higher and University Advanced Standing

Prepares nurses to find, evaluate and apply evidence as a foundation to propose creative, innovative, or evidence-based solutions to clinical practice problems. Explores selected nursing theories and conceptual models, fundamentals of the research process, and relationships between theory, practice and research.
NURS 4550 Quality and Safety in Nursing 3:3:0 Fall, Spring
* Prerequisite(s): NURS 3330 and University Advanced Standing

Explores quality and safety initiatives in health care. Develops knowledge and skills to create and maintain a culture of quality and safety through monitoring and improving outcomes of care processes.

NURS 481R Internship in Nursing 1 to 3:1 to 3:0 Summer
* Prerequisite(s): Department Chair approval and University Advanced Standing

Provides supervised, practical, clinical experience for students preparing for careers in Nursing. May be repeated for a maximum of 3 credits toward graduation. May be graded credit/no credit.

NURS 489R Undergraduate Research in Nursing 1 to 4:0:5 to 20 On Sufficient Demand
* Prerequisite(s): NURS 2410, Department approval, and University Advanced Standing

Provides nursing students the opportunity to conduct research mentored by a faculty member. Students will create a significant intellectual or creative product worthy of publication or presentation. May be repeated for a maximum of 4 credits toward graduation.

NURS 490R Special Topics in Nursing 1 to 4:1 to 4:0 Fall, Spring, Summer
* Prerequisite(s): NURS 2410 and University Advanced Standing

Explores and examines special topics in nursing. Focuses on special topics of current relevance to the profession of nursing, including societal impacts of topics. Allows nursing students an opportunity to investigate special nursing topics in an in-depth manner. May be repeated for a maximum of 4 credits toward graduation.

NURS 495R Independent Study in Nursing 1 to 3:3:0 to 9 Fall, Spring, Summer
* Prerequisite(s): NURS 2410, Departmental approval, and University Advanced Standing

Provides students an opportunity to pursue independent study in nursing with a faculty mentor. Includes any combination of literature reviews, original research, participation in departmental and independent projects. Requires preparation and presentation of oral and/or written reports. May be repeated for up to 5 credits toward graduation.

NURS 6000 Leadership Development 2:2:0 Fall
* Prerequisite(s): Admission to the Master of Science in Nursing (MSN) program or Department approval

Provides opportunities for students to examine the role of the graduate nurse leader of the 21st century. Explores requisite skills necessary to lead in complex environments, facilitate improved patient outcomes, and institute quality improvement strategies as they gain an understanding of the interconnectedness of academia and service and apply professional leadership concepts in an interdisciplinary context.

NURS 6050 Nursing Informatics 2:2:0 Fall
* Prerequisite(s): Admission into the MSN program or Department approval.

Introduces nursing informatics theory, evolving practice applications, and skill development. Discusses human factors essential to effective application of nursing informatics in practice. Applies technical skills and processes for the integration of nursing informatics into nursing education and clinical practice settings.

NURS 6200 Advanced Nursing Theory 2:2:0 Fall
* Prerequisite(s): Admission into the MSN program or Department approval

Provides students opportunities to critique and deconstruct extant and emerging theories as they relate to nursing. Explores the relationships among theory, knowledge, science, and evidence-based nursing practice. Facilitates the advancement of nursing practice based on theoretical principles.

NURS 6250 Advanced Nursing Research 3:3:0 Fall
* Prerequisite(s): Admission into the MSN program or Department approval

Prepares students to explore, critique, synthesize, and utilize appropriate research findings to resolve nursing problems and improve outcomes. Incorporates various research designs in the development of nursing practice. Applies research methodology and ethical considerations in development of a research proposal for evidence-based practice.

NURS 6300 Advanced Nursing in Health Systems and Policy 2:2:0 Spring
* Prerequisite(s): Admission into the MSN program or Department approval

Prepares students for their role in becoming change agents within the workforce. Provides students opportunity to critique current healthcare policies, including the effects policies have on current nursing practice, and current health care systems. Identifies changes that need to occur in order to advance nursing and health care in the future.

NURS 6450 Advanced Nursing Pathophysiology/Pharmacology 3:3:0 Spring
* Prerequisite(s): Admission into the MSN program or Department approval

Focuses on pathophysiological and pharmacological processes across the lifespan and the development of clinical reasoning skills that distinguish the relationships between normal physiology and the specific system alterations produced by injury and disease. Gives particular attention to etiology, pathogenesis, developmental and environmental influences and the clinical manifestations of major health problems with pharmacologic interventions to students enrolled in the nursing education program.

NURS 6450 Advanced Nursing Assessment 3:3:0 Fall
* Prerequisite(s): Admission to the MSN program or departmental approval.

Introduces concepts of advanced health assessment of individuals, families, and communities. Emphasizes application of advanced assessment techniques to perform focused and comprehensive health assessments for patients across the lifespan. Utilizes diagnostic reasoning as the primary means of collecting and analyzing data. Incorporates ethical and cultural factors in care plan development.

NURS 6500 Curriculum Design and Development 3:3:0 Spring
* Prerequisite(s): Admission to the MSN Program or Department approval

Explores curriculum design and development in nursing and incorporates reviewing, restructuring, and developing curricula to meet identified learning needs. Enhances student skill and understanding of curricular processes designed to foster and advance nursing education.

NURS 6600 Teaching Nursing in the Classroom Setting 2:2:0 Spring
* Corequisite(s): NURS 6605

Focuses on facilitating learning in classroom settings. Incorporates aspects of the philosophy of adult education and adult learning theory, the teaching process and self-evaluation through reflective thinking/processing.

NURS 6605 Teaching Nursing in the Classroom Setting Practicum 2:0:6 Spring
* Corequisite(s): NURS 6600

Focuses on application of teaching/learning skills in the nursing classroom setting. Incorporates aspects of the philosophy of adult education and adult learning theory, the teaching process and self-evaluation through reflective thinking/processing. Provides practicum experience in the teaching/learning environment.

NURS 6650 Teaching Nursing in the Clinical Setting 2:2:0 Spring
* Prerequisite(s): Admission to MSN program
* Corequisite(s): NURS 6655

Focuses on effective teaching skills for clinical settings. Establishes teacher-learner relationships as being different than in the didactic setting.

NURS 6655 Teaching Nursing in the Clinical Setting Practicum 2:0:6 Spring
* Prerequisite(s): Admission to MSN program
* Corequisite(s): NURS 6650

Focuses on applying effective teaching skills for clinical settings. Establishes teacher-learner relationships as being different than in the didactic setting.
Nutrition (NUTR)

NUTR 1020 Foundations of Human Nutrition
3:3:0 Fall, Spring, Summer
For students interested in various health care professions. Considers basic principles of human nutrition. Studies factors that influence nutritive requirements and maintenance of nutritional balance. Examines relationships between proper nutrition and social, mental and physical well-being. Canvas Course Mats $66/McGraw applies

NUTR 2020 Nutrition Through the Life Cycle
3:3:0 Fall, Spring, Summer
* Prerequisite(s): NUTR 1020
For students interested in various health care professions, particularly professions in nutrition, dietetics, and food sciences. Studies application of nutrition principles to the human life cycle. Includes nutrient functions, needs, sources, and alterations during pregnancy, lactation, growth, development, maturation, and aging.

Physical Education Sports (PES)

PES 1010 Aerobics I
1:.5:1.5 Fall, Spring, Summer
A co-ed aerobic dance-exercise class that introduces aerobic conditioning principles designed to develop cardiovascular/respiratory systems, strength, coordination, and flexibility. Teaches choreographed routines involving jogging, dancing, and vigorous exercise set to music.

PES 1011 Aerobics II
1:.5:1.5 Not Offered
A co-ed aerobic dance-exercise class that emphasizes increased knowledge in cardiovascular training, flexibility, and exercise injuries. Students acquire a more strenuous and advanced level of aerobic proficiency through high impact routines set to music.

PES 1050 Powertone
1:.5:1.5 Fall, Spring, Summer
For students interested in strength and weight training in a group exercise setting. Utilizes barbells, weights, bands, med-balls, stability balls, and ropes set to music to present a total muscle conditioning class that is target-specific.

PES 1055 Pilates I CoreMax Training
1:.5:1.5 Fall, Spring, Summer
A contemporary approach to Pilates exercise. A total body workout that challenges and optimizes strength, flexibility and endurance. Incorporates FlexBands, Bosu, stability balls, weighted balls, fitness circle and matwork to assist individuals in achieving optimal health and well-being. All exercises are designed to lengthen the body, strengthen the mid-section (core & spine), and improve posture and flexibility.

PES 1057 Power Yoga
1:.5:1.5 Fall, Spring, Summer
For students interested in bringing balance to both body and mind. Presents a vigorous and powerful approach using Ashtanga, Anusara, and Hatha Yoga’s. Uses flowing progressive postures, meditative awareness, and breath control.

PES 1085 Weight Training I
1:.5:1.5 Fall, Spring, Summer
An introductory weight training course which provides the student with the needed information to develop a personalized strength program. Teaches proper lifting techniques. Demonstrates methods to increase muscular strength and endurance. Includes lab. Course fee of $25 for equipment applies.

PES 1086 Weight Training II
1:.5:1.5 Fall, Spring
An individualized intermediate course for students who wish to continue their weight training program. Students will write their own program and set standards of goals that are attainable throughout the training period. Course fee of $25 for equipment applies.

PES 1087 Weight Training III
1:.5:1.5 Not Offered
* Prerequisite(s): PES 1086 or instructor approval
An advanced course for students and varsity athletes who wish to maintain their individualized weight training program. Students will write their own program and set standards or goals that are attainable throughout the training period.

PES 1097 Fitness for Life TE
2:2:0 Fall, Spring, Summer
Provides information, tools, and skills to aid students in engaging in an active, healthy lifestyle throughout life. Offers the opportunity to learn about exercise program design, physiological adaptations that underlie fitness, and strategies to maintain an active lifestyle across the lifespan. Features access to high quality exercise facilities. Requires participation in exercise 2-3 days per week outside of the scheduled class activities. Stresses comprehensive principles in wellness, physical activity, and fitness assessment. Canvas Course Mats $66/McGraw applies

PES 1100 Tennis I
1:.5:1.5 Fall, Spring, Summer
Covers the basic concepts of the game. Teaches general tennis skills including scoring, forehand, backhand, overhead, volley and net game, and service. Teaches basic tennis rules and strategy techniques. Includes labs, lectures, audio-visual, practice and inter-class participation. Taught on block only.

PES 1101 Tennis II
1:.5:1.5 Fall, Spring
Covers more advanced techniques of tennis. Includes volley and half volley (net game) and technical shots - drop, lob and top spin. Includes labs, lectures, audio-visual, practice and inter-class participation. Covers the more competitive strategies for both singles and doubles. Taught on block only.

PES 1105 Badminton
1:.5:1.5 Not Offered
Covers basic concepts of badminton. Includes scoring, forehand, backhand, overhead, net game, and service. Studies strategy techniques for both singles and doubles. Uses labs, lectures, audio-visual, practice and inter-class participation. Emphasizes skills, fundamentals, conditioning, and rules of the sport.

PES 1110 Racquetball I
1:.5:1.5 Fall, Spring, Summer
Covers basic fundamentals of racquetball. Teaches the skills, rules and strategies necessary to play and enjoy racquetball. Uses demonstrations and labs, practice and inter-class participation.

PES 1111 Racquetball II
1:.5:1.5 Fall, Spring
Includes advanced skills, rules and strategies in singles, doubles and cut-throat matches. Uses demonstration and labs, practice and inter-class participation. Successful completers should have developed a minimum of Level C skills.
PES 1130  
**Golf I**  
1:.5:1.5  
Fall, Spring, Summer  
A beginning course designed to teach students fundamental techniques, rules and etiquette of the game. Includes instruction on equipment and golf techniques such as grip, stance, and swing. Provides practice rounds leading to in-class tournaments. Uses demonstrations and labs, practice and inter-class participation. Taught on block only.

PES 1131  
**Golf II**  
1:.5:1.5  
Fall, Spring  
Designed to teach students advanced golf skills, rules, and strategies to be used in inter-class tournaments. Evaluates individual golf game strengths and weaknesses. Emphasizes playing according to USGA rules. Taught on block only.

PES 1135  
**Archery I**  
1:.5:1.5  
Spring  
For beginners. Covers basic concepts of archery, both for target shooting and field hunting. Includes use of recurve and compound bows. Studies the language of archery. Includes laboratory sessions (both indoors and outdoors when weather permits), video instruction, demonstration, and shooting practice. Taught on block only. Course fee of $20 for support, equipment applies.

PES 1136  
**Archery II**  
1:.5:1.5  
Spring  
Builds upon the basic concepts learned in PES 1135. Covers skills, fundamentals, conditioning, history, and rules of the sport. Includes lecture, lab, demonstration and practice (outdoors when weather permits), video presentations. Taught on block only. Course fee of $20 for support, equipment applies.

PES 1145  
**Bowling I**  
1:.5:1.5  
Fall, Spring  

PES 1146  
**Bowling II**  
1:.5:1.5  
Not Offered  

PES 1155  
**Beginning Fencing**  
1:.5:1.5  
Not Offered  
Teaches fencing strategy, analysis, focus form and precision. Provides aerobic exercise and analyzes fencing style. Completers should be familiar with competition rules, competition officiating and will participate in class tournament at the novice level. Course fee of $20 for equipment applies.

PES 1200  
**Basketball I**  
1:.5:1.5  
Fall, Spring  
An introductory course designed to teach the basic skills of shooting, passing, ball handling, rebinding, etc. Introduces and practices new skills each class session. Provides regular scrimmage time. Designed for fun and good competition. Includes an exciting class tournament during the course.

PES 1210  
**Volleyball I**  
1:.5:1.5  
Fall, Spring  
Covers basic concepts of volleyball. Teaches fundamentals and rules of the sport. Introduces new skills such as sprawl and roll. Includes labs, lectures, audio-visual, practice and inter-class participation.

PES 1211  
**Volleyball II**  
1:.5:1.5  
Fall, Spring  
Teaches advanced volleyball skills and team concepts for intermediate volleyball players. Reviews fundamentals and rules. Covers 6-person, 3-person, and 2-person volleyball. Includes labs, lectures, audio-visual, practice and scrimmages.

PES 1212  
**Volleyball III**  
1:.5:1.5  
Fall, Spring  
Teaches volleyball skills and team concepts for advanced players. Briefly reviews fundamentals and rules. Teaches variable-size team competition. Includes labs, lectures, audio-visuals, practice, and scrimmages.

PES 1214  
**Volleyball Club Team**  
1:0:2  
Not Offered  
* Prerequisite(s): Instructor approval  
For men's volleyball club team. Includes practice and competitive team play. Requires demonstrated advanced skills through tryouts. May be repeated once for credit.

PES 1230  
**Soccer I**  
1:.5:1.5  
Not Offered  
Covers the basic concepts of soccer including ball control, heading, trapping, passing or dribbling and shooting. Teaches the rules of the game and the strategy of both defense and offense. Includes lecture, media, demonstration and actual game situations. Stresses coordination, balance, agility, speed, endurance, team effort and team play.

PES 1231  
**Soccer II**  
1:.5:1.5  
Not Offered  
Expands upon and further develops the fundamental skills, techniques, tactics and rules from the Soccer I course. Covers the following topics: defensive soccer tactics, offensive soccer tactics, soccer systems & strategies and conditioning for soccer. Topics will be practiced by using a variety of drills on the field individually and in groups/teams in order to further develop playing performance in real game settings. Exams soccer rules and regulations established by FIFA (Federation Internationale de Football Association) and (United States Soccer Federation) USSSF.

PES 1234  
**Soccer Club Team**  
1:.5:1.5  
Not Offered  
* Prerequisite(s): Instructor approval  
For men's and women's soccer team members. Designed for participation in competitive practice and team play. Advanced fundamentals and skills will be developed. May be repeated once for credit toward graduation.

PES 1254  
**Lacrosse Club Team**  
1:.5:1.5  
On Sufficient Demand  
For men's lacrosse club team. Presents an overview of the history of lacrosse. Includes practice and competitive team play. Requires demonstrated advanced skills through tryouts. May be repeated once for credit.

PES 1260  
**Ice Hockey**  
1:.5:1.5  
Fall, Spring  
Teaches basic ice hockey skills including: skating (forwards, backwards, crossovers, spins, starts and stops), stick handling, passing, shooting. Practices offensive and defensive positioning, culminating in participating in several hockey games. The majority of the class will take place on the ice with short lectures and outside reading assignments. Course fee of $60 for support, equipment applies.

PES 1300  
**Swimming I**  
1:.5:1.5  
Not Offered  
For non-swimmers and others interested in improving and maintaining their swimming ability. Students progress at their own pace. Covers breathing techniques, self rescue, floating, back floating, back stroke, breast stroke and front crawl. Students who pass off all of the required skills early will be put on an individualized swimming workout schedule. Individual attention will be given to students as needed. Course fee of $40 for support applies.

PES 1301  
**Swimming II**  
1:.5:1.5  
Not Offered  
For swimmers who have a working knowledge of the basic strokes and are interested in improving their level of swimming. Provides an individually designed workout schedule for each student. Emphasizes stroke technique work on an individual basis. Course fee of $40 for support applies.
Course Descriptions

PES 1315 Water Aerobics 1:5:1.5 Not Offered
For students interested in an alternative aerobics class. Introduces aerobic conditioning principles designed to develop the cardiovascular-respiratory systems, strength, and coordination. Course fee of $30 for support, equipment applies.

PES 1405 Womens Safety Awareness and Self Defense 1:5:1.5 Fall, Spring, Summer
A beginning course in women's self-awareness, self-empowerment, and self-defense. Emphasizes environmental awareness and strategies in avoiding dangerous situations. Teaches self-defense techniques that can be used in a crisis situation.

PES 1410 Introduction to Tai Chi 1:5:1.5 Fall, Spring
Introduces to students an ancient martial exercise developed in China. Studies an effortless, low-impact, rhythmical ballet-like exercise that is a superior activity for all age levels. Stresses slow respiration and balanced, relaxed, slow postures. Promotes increased blood circulation, joint and bone strength. Focuses on the Yang style short form solo exercise which may be an effective means of self-defense.

PES 1415 Survey of Martial Arts 1:5:1.5 Not Offered
Introduces and surveys many of the popular styles of martial arts. Includes brief background of history, learning fundamental kicks, strikes, blocks, holds and other moves/techniques of the following martial arts: Kenpo Karate, Jiu Jitsu, Muay Thai (kick boxing), Tai Chi, and self-defense strategies.

PES 1425 Jiu Jitsu I 1:5:1.5 Fall, Spring
A beginning class in the martial art of Jiu Jitsu with an emphasis on Russian Sambo Jiu Jitsu also known as Combat Jiu Jitsu. Learn the basics of Jiu Jitsu including: grappling, take downs, escapes, arm locks, etc.

PES 1426 Jiu Jitsu II 1:5:1.5 Not Offered
* Prerequisite(s): PES 1425
An intermediate class in the martial art of Jiu Jitsu. Practices and improves on the basics of Jiu Jitsu including: grappling, take downs, escapes, and arm locks.

PES 1435 Kenpo Karate I 1:5:1.5 Fall, Spring
A beginning course in the martial art of Kenpo Karate. Introduces basic blocks, punches, strikes, and kicks. Emphasizes self defense techniques.

PES 1436 Kenpo Karate II 1:5:1.5 Fall, Spring
* Prerequisite(s): PES 1435 or Yellow Belt rank in Kenpo Karate
An intermediate course in Kenpo Karate for the student with the rank of yellow belt and above. Students work at their own pace and progress toward the next rank in the Kenpo system.

PES 1440 Aikido 1:5:1.5 Fall, Spring
Covers beginning techniques to the art of self-defense. Teaches different holds and locks, using various forms of nonresistance in order to defend and prevent injury from an opponent.

PES 1460 Kickboxing I 1:5:1.5 Fall, Spring
A beginning course in the martial art of kickboxing (Muay Thai). Discusses the history of Muay Thai, ring strategy, and the rules of the ring. Includes leg strengthening, shadow boxing, stretching, punches, elbows, kicks, and knees while contact is made to bags and kicking shields. Teaches self-defense, ring strategy and the requirements to advance to the second level of kickboxing (Muay Thai). Includes intense aerobic workout.

PES 1670 Ice Skating 1:5:1.5 Fall, Spring
Teaches basic ice skating skills including forward and backward skating, turns, stops, crossovers, spins, and jumps. Students will choreograph and perform a developmentally appropriate ice skating program set to music. Course fee of $60 for support, equipment applies.

PES 200R Officiating Baseball and Softball 2:2:0 Not Offered
For students wishing to officiate in interscholastic, intramural, and community games. Teaches rules, techniques, problems and procedures in officiating. Gives National Federation or OSA examinations. Introduces softball/baseball National Federation publications such as Rule Book, Case Book, Umpires Manual and Rules (Simplified and Illustrated). Utilizes lecture, media, guest lecturers, practical game situations, etc.

PES 201R Officiating Volleyball 2:2:0 Not Offered
For students wishing to officiate in intramural and community programs. Teaches rules, officiating techniques, problems and procedures. Uses lecture, media, guest lecturers and practical game situations. Gives National Federation or OSA examinations. Introduces National Federation publications, such as Rule Book, Case Book, Umpires Manual, and Rules (Simplified and Illustrated).

PES 2020 Officiating Volleyball 2:2:0 Fall
Provides students with the necessary skills to officiate the game of volleyball. Teaches both collegiate and high school rules and protocol. Provides students with a working understanding of officiating volleyball, as well as the opportunities for employment, through match observations and practical experience. Prepares students for certification as high school entry level official.

PES 2300 Introduction to Fundamentals of Athletic Coaching 2:2:0 Fall
For coaches of youth and other interested community members. Overviews methods, teaching techniques, coaching philosophies and practical experiences in both team and individual sports. Includes lecture and demonstration, media presentations, game scouting, and field project and class journals. Stresses motivation, selection, discipline, management, and the technical aspects of coaching.

PES 2400 Sports Injuries 2:2:0 Fall
* Prerequisite(s): ZOOL 1090 or Permission of instructor
Prevention and care of fitness, sport, and physical education performance injuries. Emphasizes the responsibilities of the coach/PE teacher related to sport injuries. Examines recognition, cause, prevention and care of sports related injuries to specific body parts. Explores protective equipment, environmental factors, and nutritional considerations. Reviews injuries which occur to specific populations such as adolescent and elderly athletes. Course fee of $20 for materials applies.
Physical Education Teacher Ed (PETE)

PETE 2110
Fundamental Motor Skill Analysis and Performance
1:0:2  Fall
Covers acquisition of fundamental motor skills and movements concepts necessary before advanced motor skills can be effectively taught. Includes motor development concepts, water safety, educational gymnastics, jump rope, and other rhythmic and fundamental skills and concepts. Requires students to assess their own skill performances as well as others' performances. Students with special needs will be encouraged to use appropriate accommodations and/or modifications.

PETE 2120
Fitness for Secondary Physical Educators
1:0:2  Spring
* Prerequisite(s): PES 1097
Provides and enhances preservice teachers' abilities to teach Fitness for Life and other health-related fitness concepts and classes for students in grades 6-12. Focuses on evaluation and performance of a variety of developmentally appropriate fitness activities. Trains preservice teachers to develop appropriate lesson plans for secondary students, as well as how to help individual students develop personalized fitness programs.

PETE 2150
Elementary Physical Education SPARK Method
2:2:0  Not Offered
* Prerequisite(s): University Advanced Standing
Prepares future classroom teachers, recreation leaders, and interested health and fitness professionals to instruct physical activity classes. Focuses on experiential learning.

PETE 2210
Racket Sport Analysis and Teaching Progressions
1:0:2  Fall
Introduces skills, concepts, and rules to help teachers and coaches teach racket sports to youngsters in grades K-12. Focuses on positive transfer of learning between various racket sports, including pickleball, racquetball, badminton, speedminton, and tennis. Explores and implements developmentally appropriate progressions for key skills and strategies, especially those common to all racket sports.

PETE 2220
Target Sport Analysis and Teaching Progressions
1:0:2  Spring
Introduces skills, concepts, and rules to help teachers and coaches teach target sports to youngsters in grades K-12. Focuses on helping teachers and coaches use positive transfer to enhance the teaching of skills, strategies, and concepts common to target games and sports. Developmentally appropriate progressions for key skills and strategies will be explored and implemented. Covers the main target sports: archery, bowling, golf, and disc golf. Course Lab fee of $70 for teaching experience, transportation applies.

PETE 2230
Individual Sports Track and Field and Tumbling
1:0:2  Fall
* Prerequisite(s): PES 1097
Introduces Track and Field events taught in K-12 schools in Utah. Includes fundamental tumbling skills appropriately taught to K-12 students. Focuses on developmentally appropriate progressions for all learners. Includes hints to enhance positive transfer from a previously learned skill to a new skill, specifically individual sport skills and concepts.

PETE 2310
Invasion Sports Soccer and Team Handball
1:0:2  Fall
Introduces skills, concepts, and rules to help teachers and coaches teach soccer and team handball to youngsters in grades K-12. Focuses on helping teachers and coaches use transfer to enhance the teaching of skills and concepts common to all invasion games, as well as to soccer and team handball specifically. Explores and implements developmentally appropriate progressions for key skills and strategies in soccer and team handball.

PETE 2320
Teaching and Analyzing Basketball and Volleyball
1:0:2  Spring
Introduces skills, concepts, and rules to help teachers and coaches teach basketball and volleyball to youngsters in grades K-12. Focuses on helping teachers and coaches use positive transfer to enhance student learning. Explores and implements appropriate progressions for key skills and strategies in volleyball and basketball.

PETE 2330
Team Sports for the Physical Educator
1:0:2  Spring
Introduces skills, concepts, and rules to team sports appropriate for secondary physical education classes. Sports covered may vary due to weather and current popularity in local schools. Possible sports include: touch rugby, lacrosse, floor hockey, field hockey, flag football, and softball.
PETE 2400
Skill Analysis Capstone
1.5:2 Fall
* Prerequisite(s): PETE 2110, PETE 2120, PETE 2210, PETE 2220, PETE 2230, PETE 2310, PETE 2320, PETE 2330

Review and perform skills needed for successful demonstration in physical education classes, with emphasis on any skills not performed successfully in prerequisite courses. Utilizes cues and critical elements for teaching motor skills, movement concepts and strategies covered in prerequisite courses. Analyze skill performances and game strategies. Demonstrate minimum water safety techniques.

PETE 2500
Skill Analysis and Competency for PETE Majors
3:2:2 Fall
Provides instruction in all fundamental motor skills, movement concepts, and various fundamental sport skills. Covers appropriate progressions, lead-up activities, and games. Includes tinikling, Lummi sticks, jump rope, juggling, and other activities appropriate for K-12 physical education. Requires initial assessment for skillful performance in physical education content areas.

PETE 2700
Foundations of Physical Education K-12 Teacher Education
3:3:0 Fall, Spring
Introduces the Physical Education K-12 Teacher Education Program. Includes introductions to National Initial Physical Education Teacher Standards, NASPE Standards, Appropriate Practices documents, Professional Associations, History and Philosophy of Physical Education, and Motor Development theories. Prepares students to succeed in the UVU PETE Program.

PETE 289R
Early Undergraduate Research in Physical Education Pedagogy
1 to 4:0 to 20 Not Offered
* Prerequisite(s): EXSC 270G and departmental approval of research proposal.

Provides students an early opportunity to conduct research under the mentorship of a faculty member. Students will put in practice the theoretical knowledge gained in prior major courses. Students will create a significant intellectual or creative product that is appropriate for Physical Education Pedagogy and worthy of communication to a broader audience. May be repeated for a maximum of 6 credits toward graduation.

PETE 3100
Introduction to Physical Education Pedagogy
3:2:2 Fall
* Prerequisite(s): University Advanced Standing
* Prerequisite(s) or Corequisite(s): PETE 2110 or permission of instructor

Promotes the acquisition and application of effective teaching skills for K-12 physical education, including focus on the National Standards for Physical Education. Includes observations and experiences with K-12 students and faculty. Introduces and works toward meeting the National Initial Physical Education Teacher Education Standards. Introduces content necessary to succeed in all upper-division PETE courses.

PETE 3400
Elementary Classroom Teachers as Movement Educators
2:2:0 Not Offered
* Prerequisite(s): Admission to professional elementary education program or instructor approval) and University Advanced Standing

For elementary education majors. Presents characteristics of quality physical education programs. Encourages classroom teachers to incorporate physical activity throughout the day. Identifies appropriate practices and activities for teaching movement to all children.

PETE 3450
Special Populations in Physical Education
3:3:0 Spring
* Prerequisite(s): PETE 3100, EDSP 340G, and University Advanced Standing

Involves planning and conducting physical education programs for children with special needs. Incorporates hands-on experiences working with individual with special needs. Analyzes a variety of possible adaptations for individuals with physical, sensory, emotional, and/or intellectual impairments.

PETE 4200
Methods of Teaching Elementary Physical Education
3:2:3 Spring
* Prerequisite(s): PETE 2500, PETE 2700, PETE 3100 and University Advanced Standing
* Corequisite(s): PETE 4400
* Prerequisite(s) or Corequisite(s): PETE 2120

Promotes the analysis and development of elementary physical education curricula. Promotes curricular concepts through reading, lecture/discussion, movement, self-appraisal, and teaching children. Requires application of educational principles and techniques necessary for effective teaching in the elementary school. Emphasizes appropriate selection of curriculum content and transition to teaching/learning models. Offers unit and lesson planning and evaluation. Includes a substantial field experience.

PETE 4250
Methods of Teaching Secondary Physical Education
3:1:6 Fall
* Prerequisite(s): EXSC 3550, PETE 4200, PETE 4400, acceptance into UVU’s Secondary Education program and University Advanced Standing

Provides opportunities for application of learning from all previous courses to the successful teaching of secondary physical education. Emphasizes the attainment of all current National Initial Physical Education Standards at the acceptable level or above.

PETE 4400
Assessment in Physical Education
3:3:0 Spring
* Prerequisite(s): (MAT 1000 or higher mathematics course), PETE 3100, and University Advanced Standing
* Corequisite(s): PETE 4200

Examines the need for valid assessment in K-12 physical education programs. Introduces a variety of assessment instruments. Analyzes the use of assessment to enhance learning and reliably determine student progress toward stated objectives. Promotes the development of a meaningful grading system that communicates student progress toward course objectives and SHAPE America standards. May be delivered hybrid and/or online.

PETE 481R
Physical Education Teacher Education Internship
1 to 4:0 to 20 On Sufficient Demand
* Prerequisite(s): PES 1097, EXSC 3500, EXSC 3550, PETE 3100, and University Advanced Standing

Encourages students to apply learning in a professional setting. Allows students practical experience working at a physical education teaching or coaching related job. May be repeated for a maximum of 8 credits toward graduation. May be graded credit/no credit.

PETE 489R
Undergraduate Research in Physical Education Teacher Education
1 to 4:0 to 20 Not Offered
* Prerequisite(s): PETE 3100, department approval of research proposal, and University Advanced Standing

Provides students the opportunity to conduct research under the mentorship of a faculty member. Students will put in practice the theoretical knowledge gained in prior major courses. Students will create a significant intellectual or creative product that is appropriate for Physical Education Pedagogy and worthy of communication to a broader audience. May be repeated for a maximum of 8 credits toward graduation.

PETE 4900
Student Teaching Seminar for Physical Education
1:1:0 Spring
* Prerequisite(s): Admission to Professional Education Program, successful completion of all professional education and content courses, and University Advanced Standing
* Corequisite(s): EDSC 4850

Supports student teachers during their student teaching experience. Examines each student's teaching experiences. Encourages students to integrate learning from all professional education and content courses. Discusses concerns related to current teaching experiences as well as future experiences. Investigates job seeking criteria and opportunities.
Philosophy (PHIL)  

PHIL 1000  
Introduction to Philosophy  
3:3:0  
Fall, Spring, Summer  
Designed to investigate major philosophical ideas from the Pre-Socratic era to the present. Students should develop philosophical skills through supervised analysis of readings in epistemology (knowledge), metaphysics (reality), ethics (values), and social philosophy. Emphasizes the articulation, assessment, and discussion of fundamental religious, social, political issues through class discussions, lectures, media, and writing projects.

PHIL 100H  
Introduction to Philosophy  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): ENGL 1010 or ENGH 1005  
Designed to investigate major philosophical ideas from the Pre-Socratic era to the present. Students should develop philosophical skills through supervised analysis of readings in epistemology (knowledge), metaphysics (reality), ethics (values), and social philosophy. Emphasizes the articulation, assessment, and discussion of fundamental religious, social, political issues through class discussions, lectures, media, and writing projects.

PHIL 120R  
Philosophy Forum  
1:1:0  
Fall, Spring, Summer  
Introduces students to the interchange of traditional and contemporary philosophical issues in various venues. Provides enriched learning situations in which students may interact with noted guest scholars. Includes lectures, symposia, field trips, outreach projects, and activities oriented to engage students in philosophical discourse. Meets in conjunction with the Philosophy Club. Grading is on a credit/no credit basis. May be repeated for a total of four credits toward the AA/AS, BA/BGS degree.

PHIL 1250  
Introduction to Logic and Critical Thinking  
3:3:0  
Fall, Spring, Summer  
Introduces fundamental elements of informal logic and applies these to critical thinking. Covers subjects and concepts such as (but not limited to) definition, argument, fallacy, deduction versus induction, validity, soundness, induction, causal reasoning, abductive reasoning, analogical reasoning, and probability.

PHIL 130R  
Ethics Forum  
1:0:3  
Fall, Spring  
Introduces students to a wide variety of public policy and ethical issues. Provides enriched learning situations in which students are exposed to noted guest scholars and other lecturers. Includes attendance and participation at specified events by engaging in discussion of relevant issues. May be repeated for a maximum of 3 credits toward graduation.

PHIL 1610  
Introduction to Western Religions  
3:3:0  
Fall, Spring, Summer  
For students majoring in humanities related disciplines and other students interested in the academic study of religion. Presents the comparative study of the history, ritual, *theology,* and ethical beliefs of the major western religions including Judaism, Christianity, Islam, Zoroastrianism, Baha'i, and nontraditional religious belief in the western world. Explores similarities and differences between them by examining the primary sources and sacred texts along with the unique beliefs and practices of each tradition.

PHIL 1620  
Introduction to Eastern Religions  
3:3:0  
Fall, Spring, Summer  
For students majoring in humanities-related disciplines and other students interested in the academic study of religion. Presents the comparative study of the history, ritual, *theology,* and ethical beliefs of the major eastern religious traditions including Hinduism, Jainism, Buddhism, Sikhism, Taoism, Confucianism, and Shintoism. Explores similarities and differences between them by examining the primary sources and sacred texts along with the unique beliefs and practices of each tradition.

PHIL 2000  
Formal Logic I  
3:3:0  
Fall, Spring, Summer  
Introduces the basic elements of categorical logic as well as formalized propositional logic and formalized first-order quantificational logic. Includes Venn diagrams, proofs, truth tables, tableaux and translations from natural language.

PHIL 2050  
Ethics and Values  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): ACT scores of 29+ in English and Reading taken within the last five years or completion of ENGL 1010 or ENGL 101H or ENGL 1005 with a grade of C- or higher.  
Provides an overview of the history and evolution of philosophical thought from its origins in pre-Socratic philosophers through Aristotle. Reviews the influence of pre-Socratic ideas upon the work of Plato and Aristotle and the impact of Greek philosophy on the evolution of Western philosophy, science, and culture. Requires writing-intensive assignments.

PHIL 205H  
Ethics and Values  
3:3:0  
Fall, Spring  
* Prerequisite(s): ACT scores of 29+ in English and Reading taken within the last five years or completion of ENGL 1010 or ENGL 101H or ENGL 1005 with a grade of C- or higher.  
Systematically explores the core issues in the realm of ethics and values, especially as they relate to life in the contemporary world. Focuses on good versus evil, justice versus injustice, and the necessity of ideals and equality. Emphasizes reading and writing skills at a more challenging level.

PHIL 2110  
Ancient Greek Philosophy WE  
3:3:0  
Fall, Spring  
* Prerequisite(s): ENGL 1010 or ENGL 101H or ENGL 1005 or PHIL 100H or PHIL 2050 or PHIL 205H or PHIL 205G or permission of the instructor.  
Provides students with an overview of the history and evolution of philosophical thought from its origins in pre-Socratic philosophers through Aristotle. Reviews the influence of pre-Socratic ideas upon the work of Plato and Aristotle and the impact of Greek philosophy on the evolution of Western philosophy, science, and culture. Requires writing-intensive assignments.

PHIL 2120  
Early Modern Philosophy  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): PHIL 1000 or PHIL 100H or PHIL 2050 or PHIL 205H or PHIL 205G or permission of the instructor  
Provides an overview of the development of philosophical thought from the Hellenistic period through Thomas Aquinas. Covers the influence of Ancient Greek philosophy and the impact of Christianity upon the evolution of Western philosophical thought. Carefully considers the conceptions of God, nature, the human being, and morality advanced during this period, along with the profound impact Medieval philosophy had on the European Enlightenment and modern philosophy.

PHIL 2130  
Early Modern Philosophy  
3:3:0  
Spring  
* Prerequisite(s): ENGL 1010 or ENGL 101H or ENGL 1005 or PHIL 1000 or PHIL 100H or PHIL 2050 or PHIL 205H or PHIL 205G or permission of the instructor  
Provides an overview of the development of philosophical thought from the Hellenistic period through Thomas Aquinas. Covers the influence of Ancient Greek philosophy and the impact of Christianity upon the evolution of Western philosophical thought. Carefully considers the conceptions of God, nature, the human being, and morality advanced during this period, along with the profound impact Medieval philosophy had on the European Enlightenment and modern philosophy.

PHIL 2150  
Introduction to Eastern Religions  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): ENGL 1010 or ENGL 1005 or PHIL 1000 or PHIL 100H or PHIL 2050 or PHIL 205H or PHIL 205G or permission of the instructor  
Provides an overview of the history and evolution of ideas in Western culture during the modern period of philosophy from Descartes through Kant. Focuses on the dialogue between rationalism and empiricism, and examines Kant’s attempt to bridge the gap between these two approaches. Requires writing-intensive assignments.
PHIL 290R
Independent Study
1 to 3:0 to 3:0 to 12  On Sufficient Demand
Provides independent study as directed in reading and individual projects. Request must be submitted for approval by the department. Students may do independent study for one, two or three credits with a limit of three credits applying toward graduation with an AA/AS degree.

PHIL 295R
Independent Study
1 to 3:0 to 3:0 to 12  On Sufficient Demand
Provides independent study as directed in reading and individual projects. Request must be submitted and approved by the department prior to enrollment. Students may do independent study for one, two or three credits with a limit of three credits applying toward graduation with an AA/AS degree. Student must complete an internship application and have at least one semester of existing, available classes. A proposal must be completed and signed. Repeatable for a maximum of six credit hours toward graduation. May be graded credit/no credit.

PHIL 281R
Internship
1 to 6:1 to 6:0  On Sufficient Demand
* Prerequisite(s): Permission from departmental chair
Allows philosophy students to receive credit for service as an intern in a governmental, not for profit, or private agency apart from their regular employment. Provides practical and research development in selected areas of service related to students’ academic and/or professional interests or goals. Internship must be supervised by agency representative. Must be approved by philosophy internship advisor and department chair and written contracts must be completed and signed. Repeatable for a maximum of six credit hours toward graduation. May be graded credit/no credit.

PHIL 3150
Philosophical Issues in Feminism
3:3:0  Fall Odd Year
* Prerequisite(s): (PHIL 1000 or PHIL 100H or PHIL 2050 or PHIL 205H or PHIL 205G or PHIL 2110 or PHIL 2150 or instructor approval) and University Advanced Standing
Introduces students to various themes in feminist philosophy. Focuses on the concepts of sex and gender, including such issues as the nature, explanatory import and normative implications of biological sex differences, the sex/gender distinction, the idea of gender as a social construct, the structure and impact of gender oppression and the nature and value of the norms of femininity and masculinity.

PHIL 3160
Gender Values Knowledge and Reality
3:3:0  Fall Even Year
* Prerequisite(s): (PHIL 1000 or PHIL 100H or PHIL 2050 or PHIL 205H or PHIL 205G or PHIL 2110 or PHIL 2150 or instructor approval) and University Advanced Standing
Examines the impact of gender on specific areas of philosophy including, but not limited to, aesthetics, ethics, social and political philosophy, epistemology, metaphysics, philosophy of religion, philosophy of science, philosophy of language and the history of philosophy. Examines the meaning of gender with an emphasis on the diversity of experience across varying gender roles.

PHIL 3200
Metaphysics
3:3:0  Fall
* Prerequisite(s): (PHIL 1000 or PHIL 100H or PHIL 2050 or PHIL 205H or PHIL 205G or PHIL 2110 or PHIL 2150 or instructor approval) and University Advanced Standing
Acquaints the student with competing abstract philosophical problems concerning the general nature and structure of reality. Examines the history of and problems of metaphysics including, but not limited to: personal identity, causation, causal determinism, the nature of universals, anti-realism, realism, change, substance and essence, space and time, and philosophy of mind.

PHIL 3300
Epistemology
3:3:0  Spring Even Year
* Prerequisite(s): (PHIL 1000 or PHIL 100H or PHIL 2050 or PHIL 205H or PHIL 205G or PHIL 2110 or PHIL 2150 or instructor approval) and University Advanced Standing
Explores diverse theories of knowledge from within the Western tradition. Includes concepts of truth and falsity, skepticism, justification, identity, and intentionality. Discusses empiricism, rationalism and twentieth-century Philosophy of Mind.

PHIL 3400
Philosophy of Science
3:3:0  Spring Odd Year
* Prerequisite(s): (PHIL 1000 or PHIL 100H or PHIL 2050 or PHIL 205H or PHIL 205G or PHIL 2110 or PHIL 2150 or instructor approval) and University Advanced Standing
Explores fundamental issues in the philosophy of science. Includes the structure of the scientific method, scientific explanation, and the epistemological status of scientific laws and theories.

PHIL 3450
Philosophy of Childhood
3:3:0  Fall Odd Year
* Prerequisite(s): (PHIL 1000 or PHIL 100H or PHIL 2050 or PHIL 205H or PHIL 205G or PHIL 2110 or PHIL 2150 or instructor approval) and University Advanced Standing
Examines philosophical theories and models of childhood, their implication on contemporary conceptions, controversial social, philosophical, legal, educational, and political issues pertaining to childhood, and the capacity of children to engage in philosophical dialogue.

PHIL 3460
The Ethics of Human/Animal Relationships
3:3:0  Spring
* Prerequisite(s): (PHIL 2050 or PHIL 205G or PHIL 205H or PHIL 1000 or PHIL 100H) and University Advanced Standing
Introduces students to various philosophical and academic investigation of the relationship between human and nonhuman animals. Develops and refines critical thinking and discursive strategies for evaluating traditional and contemporary philosophical, legal, religious, moral, and social considerations that inform human attitudes about nonhuman animals. Challenges students to analyze a range of pertinent topics, including, but not limited to: animal welfare, animal liberation, animal sentience and consciousness, animal rights, the animal ethics movement, the animal rights movement, religious attitudes, animals, animal law, and animal activism.

PHIL 3470
Pragmatism and American Philosophy
3:3:0  Fall Odd Year
* Prerequisite(s): (PHIL 1000 or PHIL 100H or PHIL 2050 or PHIL 205H or PHIL 205G or PHIL 2110 or PHIL 2150 or instructor approval) and University Advanced Standing
Introduces students to various philosophical themes and figures unique to classical American Philosophy and American Pragmatism. Focuses on assorted thematic topics characteristic of American Pragmatism, as well as the work of the American transcendental school and various philosophical writings from American women, such as Jane Addams and African-American philosophers, such as Alain Locke.

PHIL 3510
Business and Professional Ethics
3:3:0  Fall
* Prerequisite(s): (PHIL 2050 or PHIL 205H or PHIL 205G) and University Advanced Standing
Develops concepts and philosophies essential to understanding ethical concerns in today’s business and professions. Presents current case studies and theories about business ethics and helps students determine their own attitudes about contemporary and historical business morality. Examines a variety of approaches, solutions, and methods of critically thinking about ethics in business and professions.
PHIL 3520 Bioethics 3:3:0 Fall Odd Year
* Prerequisite(s): (PHIL 2050 or PHIL 205H or PHIL 205G or instructor approval) and University Advanced Standing

Shows how ethical theories can help provide frameworks for moral judgment and decision-making in the wake of recent scientific, technological, and social developments which have resulted in rapid changes in the biological sciences and in health care. Topics include: codes of ethics, ethical theories, and practical applications, such as: professional-patient relationships, genetic engineering, euthanasia, managed health care, end-of-life issues, abortion, and reproductive technologies.

PHIL 3530 Environmental Ethics 3:3:0 Fall Even Year
* Prerequisite(s): (PHIL 2050 or PHIL 205H or PHIL 205G) and University Advanced Standing

Presents a comprehensive, balanced introduction to the field of environmental ethics. Examines a variety of national and international environmental issues. Challenges students to think and write critically about classic and contemporary works on ethics and the environment. Analyzes ethical, scientific, aesthetic, political, economical and religious perspectives pertaining to the environment.

PHIL 3540 (Cross-listed with: RLST 3540) Christian Ethics 3:3:0 Spring Odd Year
* Prerequisite(s): PHIL 1610 and University Advanced Standing

Examines key developments and conceptions in Christian ethics through historical and conceptual methodologies. Explores the relationship between religious and secular approaches to ethics in their approach to questions of war, economics, politics, and/or other relevant issues.

PHIL 3550 Moral Philosophy 3:3:0 Fall, Spring
* Prerequisite(s): (PHIL 2050 or PHIL 205H or PHIL 205G or instructor approval) and University Advanced Standing

Surveys the history of moral and ethical philosophy from the Ancients to contemporary figures. Focuses on the following issues and theories: The good, moral reasoning and judgment, objectivism vs. conventionalism and relativism; natural law theory, ethical egoism, hedonism, virtue ethics, deontology, consequentialism, utilitarianism, materialism, moral sentiment, roles of emotion and reason in ethical and moral deliberation and judgment, as well as race, gender, and sexuality in ethics. Figures examined may include: Plato, Aristotle, Augustine, Aquinas, Hobbes, Shaftsbury, Hutcheson, Hume, Kant, Mill, Nietzsche, de Beauvoir, Sartre, Camus, Frankena, Rawls, Harman, MacIntyre, Held, and hooks.

PHIL 357R Moral Reasoning Through Case Studies Ethics Bowl 3:3:0 Fall
* Prerequisite(s): (PHIL 2050 or PHIL 205G or PHIL 205H) and University Advanced Standing

Studies complex, contemporary ethical issues and develops an advanced understanding of principles and theories studied in other ethics and moral theory courses. Uses a case study approach to ethical inquiry and introduces students to the content, format, rules, and procedures of the National Collegiate Ethics Bowl competition. Required for those students who wish to participate in the regional and national competitions and provides a challenging opportunity for others who are interested in participating in exciting ethical deliberations and discussions. May be repeated for up to 9 credits for graduation with approval of instructor and department chair.

PHIL 3600 Philosophy of Religion 3:3:0 Fall
* Prerequisite(s): (PHIL 1000 or PHIL 100H or PHIL 2050 or PHIL 205H or PHIL 205G or PHIL 2110 or PHIL 2150 or instructor approval) and University Advanced Standing

For students majoring in humanities related disciplines and other students interested in the academic study of religion. Addresses specific topics and theoretical approaches related to religious studies. Topics may include religion and violence, religion and public discourse, religious ritual, etc. Subject matter varies by semester and is repeatable for a total of 9 hours of credit.

PHIL 3610 (Cross-listed with: RLST 3610) Introduction to Christian Theology 3:3:0 On Sufficient Demand
* Prerequisite(s): PHIL 1610 and University Advanced Standing

Examines key developments and conceptions in Christian theology through historical and conceptual methodologies.

PHIL 3620 (Cross-listed with: RLST 3620) Mormon Theology and the Christian Tradition 3:3:0 On Sufficient Demand
* Prerequisite(s): PHIL 1610 and University Advanced Standing

For students majoring in humanities-related disciplines and other students interested in the academic study of religion. Engages students in exploring the defining features of Mormon thought in relation to the broader Christian tradition. Examines traditional theological questions such as the problem of evil, the scriptural canon, the nature of God and humanity, and the role of ritual.

PHIL 3650 (Cross-listed with: RLST 3650) Approaches to Religious Studies 3:3:0 Spring
* Prerequisite(s): (PHIL 2050 or PHIL 205H or PHIL 205G or instructor approval) and University Advanced Standing

For students majoring in humanities-related disciplines and other students interested in the academic study of religion. Teaches methodological approaches and critical thinking strategies in the study of religion. Explores various disciplines in their approaches to religious belief and practice. Includes the study of such thinkers as David Hume, Immanuel Kant, Friedrich Schleiermacher, Rudolf Otto, William James, Ludwig Feuerbach, Soren Kierkegaard, Max Weber, Emile Durkheim, John Hick, and Rene Girard.

PHIL 366R (Cross-listed with: RLST 366R) Issues in Religious Studies 3:3:0 Spring Odd Year
* Prerequisite(s): (PHIL 2050 or PHIL 205H or PHIL 205G or instructor approval) and University Advanced Standing

PHIL 3700 Social and Political Philosophy 3:3:0 Spring
* Prerequisite(s): (PHIL 2050 or PHIL 205H or PHIL 205G) and University Advanced Standing

Addresses ethics on the social level by exploring a variety of issues. Introduces students to the content, format, rules, and procedures of the National Collegiate Ethics Bowl competition. Required for those students who wish to participate in the regional and national competitions and provides a challenging opportunity for others who are interested in participating in exciting ethical deliberations and discussions. May be repeated for up to 9 credits for graduation with approval of instructor and department chair.

PHIL 3710 Philosophy of Law 3:3:0 Fall Even Year
* Prerequisite(s): ENGL 2010 and University Advanced Standing

Introduces topics in the philosophy of law, such as the role, nature, extent, and justification of law. Investigates challenging questions about the role of law, civil disobedience, the relationship between law and morality, justice, equality, responsibility, and punishment.

PHIL 3750 Marxism 3:3:0 Spring Even Year
* Prerequisite(s): (PHIL 1000 or PHIL 100H or PHIL 2050 or PHIL 205H or PHIL 205G or PHIL 2110 or PHIL 2150 or instructor approval) and University Advanced Standing

Examines the political philosophy of Karl Marx and looks at Marx's legacy for 20th century and contemporary philosophy. Includes Marx's criticism of Hegel and Hegelian Idealism, Marx's philosophy as "ideology critique," Marx's "materialist" philosophy, Marx's critique of capital, and several of the following: early 20th-century Marxist political philosophy, critical theory, structuralist Marxism, phenomenological Marxism, materialist feminism, and post-Marxism.
PHIL 3800 (Cross-listed with: HUM 3800) Aesthetics
3:3:0 Fall
* Prerequisite(s): University Advanced Standing
Studies aesthetics as perceived by the disciplines of philosophy, psychology, sociology, anthropology, history, and others. Analyzes art forms, including the visual arts, literature, music, and theater from the perspectives of philosophers such as Plato, Aristotle, Kant, Hume, Dewey, Danto, Bell, Collingwood, Thoreau, and Dickie.

PHIL 3810 Existentialism and Phenomenology
3:3:0 Spring Odd Year
* Prerequisite(s): (PHIL 1000 or PHIL 100H or PHIL 2050 or PHIL 205H or PHIL 205G or PHIL 2110 or PHIL 2150 or instructor approval) and University Advanced Standing
Explores two of the most important and influential traditions within modern and contemporary philosophy. Covers figures such as Kierkegaard, Nietzsche, Husserl, Heidegger, Sartre, Camus, Merleau-Ponty, de Beauvoir, Gadamer, Levinas, Ricoeur, and Derrida, and issues in epistemology, metaphysics, ethics and aesthetics. The course focuses in particular on the notions of subjectivity, agency, free-will, and truth.

PHIL 3820 (Cross-listed with: HUM 3820) Philosophy Through Literature
3:3:0 Spring Even Year
* Prerequisite(s): (PHIL 1000 or PHIL 100H or PHIL 2050 or PHIL 205H or PHIL 205G or PHIL 2110 or PHIL 2150 or instructor approval) and University Advanced Standing
Provides students with an interdisciplinary approach to the study of philosophy through literature. Gives students the opportunity to read some of the most engaging thinkers and how they offer differing perspectives through a variety of texts. Breaks down some of the strict divisions placed between philosophical and literary texts.

PHIL 3830 Deconstruction and Hermeneutics
3:3:0 Spring Even Year
* Prerequisite(s): (PHIL 1000 or PHIL 100H or PHIL 2050 or PHIL 205H or PHIL 205G or PHIL 2110 or PHIL 2150 or Instructor Approval) and University Advanced Standing
Studies the interpretive methods of deconstruction and hermeneutics, two important traditions to emerge in late 20th century philosophy. Analyzes various works from the history of philosophy through the frameworks of deconstruction and hermeneutics. Tracks the difference between knowledge and understanding, particularly through the writings of Jacques Derrida and Hans-Georg Gadamer. Includes the study of other relevant traditions such as post-structuralism, French feminism, and literary criticism.

PHIL 386R Topics in Ancient Philosophy
3:3:0 Spring
* Prerequisite(s): (PHIL 1000 or PHIL 100H or PHIL 2050 or PHIL 205H or PHIL 2110 or PHIL 2150 or instructor approval) and University Advanced Standing
Provides students the opportunity to study aspects of ancient Greek philosophy intensively. Focuses on an aspect of the thought of a particular philosopher, such as Plato or Aristotle, or on a particular theme in Ancient philosophy, such as Ethics or Metaphysics. Emphasizes close study of primary texts. Develops strong critical thinking, writing and rhetorical skills. May be repeated up to 3 times for a total of 9 credits.

PHIL 388R Topics in Medieval and Early Modern Philosophy
3:3:0 Fall Odd Year
* Prerequisite(s): (PHIL 1000 or PHIL 100H or PHIL 2050 or PHIL 205H or PHIL 205G or PHIL 2110 or PHIL 2150 or instructor approval) and University Advanced Standing
Provides students the opportunity to study aspects of medieval and early modern philosophy intensively. Focuses on the thought of a particular philosopher or set of philosophers or a particular theme in medieval and early modern philosophy. Emphasizes close study of primary texts. Develops critical thinking, writing, and comprehension skills. May be repeated up to 3 times for a total of 9 credits.

PHIL 400R Great Philosophers
3:3:0 Fall, Spring, Summer
* Prerequisite(s): (PHIL 1000 or PHIL 100H or PHIL 2050 or PHIL 205H or PHIL 205G or PHIL 2110 or PHIL 2150 or instructor approval) and University Advanced Standing
Provides an in-depth look at a great figure in Philosophy across the topics of metaphysics, epistemology, ethics, social and political philosophy, aesthetics, and other themes. Addresses the contribution of the thinker to the history of Philosophy. Repeatable up to 12 credit hours with different topics.

PHIL 4120 Philosophy of Education
3:3:0 Spring Even Year
* Prerequisite(s): (ENGL 1010 or ENGL 1005 or PHIL 1000 or PHIL 100H or PHIL 2050 or PHIL 205H or PHIL 205G or PHIL 2110 or PHIL 2150 or instructor approval) and University Advanced Standing
Examines history, issues, and philosophical theories of education with attention to associated metaphysical, epistemological, ethical, political, and ideological assumptions.

PHIL 4130 Nineteenth Century European Philosophy
3:3:0 Spring Odd Year
* Prerequisite(s): (PHIL 1000 or PHIL 100H or PHIL 2050 or PHIL 205H or PHIL 205G or PHIL 2110 or PHIL 2150 or instructor approval) and University Advanced Standing
Introduces students to the changes in 19th century European philosophy regarding the nature of truth, knowledge, human freedom, and nature. Focuses on the attempts of German Idealism to formulate a systematic science of reality. Discusses the possibilities and problems with conceiving truth as both complete and absolutely knowable. Analyzes the philosophies of nature, art, human freedom, society, and ethics.

PHIL 4140 History of Analytic Philosophy
3:3:0 Fall Even Year
* Prerequisite(s): (PHIL 2150 or instructor approval) and University Advanced Standing
Explores the history of Analytic Philosophy from the late 19th century to the present. Includes the study of such figures as Bertrand Russell, B. Bolzano, Gottlob Frege, Ludwig Wittgenstein, Rudolph Carnap, G.E. Moore, J.L. Austin, Gilbert Ryle, W.V.O. Quine, and Fredrich Waismann. Studies methods of movements such as Logical Empiricism, and Ordinary Language Philosophy. Explores views such as Logicism, Logical Atomism, Holism, Verificationism, Logical Behaviorism, Psychological Nominalism, and Realism.

PHIL 4150 History of Continental Philosophy
3:3:0 Fall Odd Year
* Prerequisite(s): (PHIL 2150 or instructor approval) and University Advanced Standing
Explores continental European philosophy. Reviews Kant's critical philosophy. Examines Hegel's attempt to go beyond the limitations of critical philosophy by creating a systematic, dialectical philosophy. Examines the following traditions as responses to Hegel: Western Marxism, Existentialism, Phenomenology, Structuralism, Post-Structuralism and Deconstruction, Post-Modernism, Psychoanalysis, and Feminism.

PHIL 4200 Symbolic Logic
3:3:0 On Sufficient Demand
* Prerequisite(s): PHIL 3000 and University Advanced Standing
Discusses the philosophical motivation for the formalization of logic. Introduces the metaphetory for propositional and quantificational logic. Includes proofs of the soundness and completeness of quantificational logic. Discusses the philosophical issues surrounding the results proved. May also include some discussion of important results in computability.

PHIL 4300 (Cross-listed with: HUM 4300) Environmental Aesthetics
3:3:0 On Sufficient Demand
* Prerequisite(s): (PHIL 1000, PHIL 100H, PHIL 2050, PHIL 205H, PHIL 205G, ENST 3000, HUM 1010, HUM 101H, HUM 101G, or HUM 3500) and University Advanced Standing
Introduces students to emerging themes in environmental aesthetics. Evaluates concepts and attitudes toward nature including, but not limited to, the concept of beauty in natural and human-made environments from a cross-cultural perspective. Studies environmental formalism, cognitivism and non-cognitivism, as well as divergent spiritual, ecological, religious, and moral approaches to the appreciation of nature.
PHIL 430R  
Topics in Epistemology  
3:3:0  
* Prerequisite(s): (PHIL 1000 or PHIL 100H or PHIL 2050 or PHIL 205H or PHIL 205G or PHIL 2110 or PHIL 2150 or instructor approval) and University Advanced Standing  
Provides an opportunity for students to conduct an in-depth study of specific topics in epistemology. Topics may include the foundations of knowledge, the nature of justification; the problem of skepticism, and the nature of scientific, religious, and/or moral knowledge. Emphasizes the rigorous analysis of arguments and offers the opportunity for students to develop their own original critical analysis and argument. May be repeated for a maximum of 9 credits toward graduation.

PHIL 4460  
Philosophy of Psychology  
3:3:0  
Spring Odd Year  
* Prerequisite(s): (PHIL 2050, PHIL 205G, PHIL 205H, PSY 1010, or PSY 101H) and University Advanced Standing  
Offers an interdisciplinary exploration of questions that arise when psychologists explore cognition and behavior concerning philosophical issues and when philosophers explore questions that rely on empirical claims about cognition and behavior. Surveys topics such as situationism and virtue ethics, moral intuitions, well-being, emotions, moods, positive illusions and free will, automaticity, confabulation, mental illness and psychopathy.

PHIL 4461 (Cross-listed with: PSY 4461)  
Moral Psychology  
3:3:0  
Spring Even Year  
* Prerequisite(s): (PHIL 2050 or PHIL 205G or PHIL 205H or PSY 1010 or PSY 101H) and University Advanced Standing  
Analyzes questions about how people engage in moral thinking and in moral behavior from the perspectives of the philosophy of mind, ethics and psychology. Explores topics such as virtue and character, reason and passion, altruism and egoism, agency and responsibility, and moral intuitions.

PHIL 4470  
Philosophy of Mind  
3:3:0  
Fall Even Year  
* Prerequisite(s): (PHIL 1000 or PHIL 100H or PHIL 2050 or PHIL 205H or PHIL 205G or PHIL 2110 or PHIL 2150 or instructor approval) and University Advanced Standing  
Explores central questions concerning the nature of the mind. Includes such topics as personal identity, the mind-body problem, other minds, mental causation, and externalism.

PHIL 4480  
Philosophy of Language  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): (PHIL 1000 or PHIL 100H or PHIL 2050 or PHIL 205H or PHIL 205G or PHIL 2110 or PHIL 2150 or instructor approval) and University Advanced Standing  

PHIL 450R  
Interdisciplinary Senior Ethics Seminar  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): Instructor approval and University Advanced Standing  
For integrated studies majors and other interested students. Addresses ethical issues dealing with discipline specific subject matter, i.e., nursing, behavioral, physical, social sciences, etc. Subject matter will vary each semester. Taught by Philosophy faculty in cooperation with faculty of appropriate departments. Repeatable three times for credit with different subjects. See Philosophy Department office for specific topics.

PHIL 451R  
Ethical Theory Seminar  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): (PHIL 2050 or PHIL 205H or PHIL 205G or instructor approval) and University Advanced Standing  
Offers detailed investigation of selected ethical theories central to the Western philosophical tradition. Repeatable up to 12 credit hours with different topics.

PHIL 452R  
Topics in Value Theory  
3:3:0  
* Prerequisite(s): (PHIL 1000 or PHIL 100H or PHIL 2050 or PHIL 205H or PHIL 205G or PHIL 2110 or PHIL 2150 or instructor approval) and University Advanced Standing  
Provides an opportunity for students to conduct an in-depth study of specific topics in value theory. Considers theoretical questions about the nature of value, meaning, and purpose in human life. Includes the objectivity or subjectivity of value; the sources of value in human life; the nature and importance of art; the value of relationships, community, humor, and/or play; and related theoretical inquiries into the value of particular human activities. Emphasizes the rigorous analysis of arguments and offers the opportunity for students to develop their own original critical analysis and argument. May be repeated for a maximum of 9 credits toward graduation.

PHIL 4580R  
Philosophy Capstone Prep  
1:1:0  
Fall, Spring, Summer  
* Prerequisite(s): PHIL 1250 or PHIL 2110 or PHIL 2150, University Advanced Standing  
Prepares students to successfully complete a Philosophy Research Capstone thesis. Provides resources for formulating a thesis, identifying faculty adviser(s), and completing a one-page thesis proposal and an annotated bibliography of works to be consulted for the thesis project. May be repeated for a maximum of 2 credits toward graduation.

PHIL 461R  
Internship  
1 to 6:1 to 6:0  
Fall, Spring, Summer  
* Prerequisite(s): Departmental chair approval and University Advanced Standing  
Allows philosophy students to receive credit for service as an intern in a governmental, not for profit, or private agency apart from their regular employment. Provides practical and research development in selected areas of service related to students’ academic and/or professional interests or goals. Internship must be supervised by agency representative. Must be approved by philosophy internship advisor and department chair and written contracts must be completed and signed. Repeatable for a maximum of 6 credit hours toward graduation. May be graded credit/no credit.

PHIL 490R  
Independent Study  
1 to 3:0 to 3:0 to 12  
Fall, Spring, Summer  
* Prerequisite(s): Departmental Approval and University Advanced Standing  
Provides independent study as directed in reading and individual projects. May be repeated for up to 6 total credits toward graduation.

PHIL 4910  
Philosophy Research Capstone WE  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): (PHIL 1250 or PHIL 2110 or PHIL 2150), PHIL 480R, Senior Standing, and University Advanced Standing  
To be taken during the student’s last semester in the baccalaureate program. Includes writing a senior thesis, which points to post-baccalaureate career path or graduate school goals. Covers advanced Philosophy research and writing instruction. Encourages students to explore the ethical dimensions of their desired professional or graduate research interests. Involves the creation of a professional portfolio helpful in applying to graduate school or seeking employment.

PHIL 492R  
Advanced Topics in Philosophy  
1 to 3:1 to 3:0  
On Sufficient Demand  
* Prerequisite(s): (PHIL 1000 or PHIL 100H or PHIL 2050 or PHIL 205H or PHIL 205G or PHIL 2110 or PHIL 2150 or instructor approval) and University Advanced Standing  
Examines advanced topics philosophy. Examples include ancient theories of political constitution, continental rationalism, empiricism, personal identity, free will, theories of truth and modal logic. May be repeated for a maximum of 9 credits toward graduation.

Physical Science (PHSC)  
PHSC 1000  
PP  
Survey of Physical Science  
3:3:0  
Fall, Spring, Summer  
Surveys the exciting world of science and explains the basic scientific laws and models by which the physical universe may be understood. Stresses historical aspects and the impact of physical science on modern society. Draws topics from the fields of physics, chemistry, geology, meteorology and astronomy. Uses lectures, dramatizations, audio-visual presentations, and demonstrations.
Course Descriptions

**PHSC 281R Cooperative Work Experience**  
2 to 9.2 to 9:0 On Sufficient Demand  
* Prerequisite(s): Approval of Cooperative Coordinator  
Designed for Physical Science majors. Provides paid work experiences in the student's major. Course content is individualized, with students setting objectives in consultation with their faculty coordinator and their on-the-job supervisor. Credit is determined by the number of hours a student works during the semester. May be graded credit/no credit.

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### Physics (PHYS)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Description</th>
<th>Prerequisites/Co-requisites</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PHYS 1010</strong></td>
<td>Elementary Physics</td>
<td>For students interested in a one-semester survey physics course. Covers the fundamentals of classical and modern physics. Includes mechanics, fluids, heat, waves and sound, electricity and magnetism, light, optical, relativity, atomic and nuclear physics. Includes lectures, classroom interaction, demonstration, and problem solving.</td>
<td>* Prerequisite(s): MAT 1010</td>
<td>3:3:0</td>
</tr>
<tr>
<td><strong>PHYS 1700</strong></td>
<td>Descriptive Acoustics</td>
<td>Introduces the science of sound, music and speech and the physical principles and technology used to manipulate, store and broadcast it.</td>
<td>* Prerequisite(s): MAT 1010</td>
<td>3:3:0</td>
</tr>
<tr>
<td><strong>PHYS 1750</strong></td>
<td>The Acoustics of Music</td>
<td>Discovered the principles of physics that form the basis of music and provide the foundation for the design of musical instruments. Investigates the physics of music production, transmission and reception, and perception. Examines the five fundamental elements of the musical instrument, namely power supply, oscillator, resonator, amplifier, and pitch modifiers. Satisfies one general education physical science elective.</td>
<td>* Prerequisite(s) or Corequisite(s): MAT 1010 or higher</td>
<td>3:3:0</td>
</tr>
<tr>
<td><strong>PHYS 1800</strong></td>
<td>Energy You and the Environment</td>
<td>Answers the question, &quot;Where does energy come from, and where does it go?&quot;. Examines the methods of energy production, distribution, and consumption in society and their environmental impacts. Examines the personal impact of energy use on the environment and explores alternatives, such as fuel cell cars, and a hydrogen economy. Examines prospects for alternative energy sources, such as solar, wind, nuclear and geothermal energy at length. Intended for non-science majors interested in energy use in society.</td>
<td>* Prerequisite(s): Approval of Cooperative Coordinator</td>
<td>3:3:0</td>
</tr>
<tr>
<td><strong>PHYS 1850</strong></td>
<td>The Physics of Aviation</td>
<td>Uses the medium and modes of flight and modern aviation to introduce elementary physics. Includes vectors, kinematics, forces, momentum, energy, torques, elementary fluid dynamics and thermodynamics. Uses algebra extensively. Presents and develops concepts of physics as exercises in modeling constructed from examples used in aviation. May be delivered online.</td>
<td>* Prerequisite(s): MAT 1030 or appropriate math placement score</td>
<td>3:3:0</td>
</tr>
<tr>
<td><strong>PHYS 2010</strong></td>
<td>College Physics I</td>
<td>For students desiring a two semester algebra based course in applied physics. Covers mechanics, fluids, waves, heat, and thermodynamics. Canvas Course Mats $78/Pearson applies.</td>
<td>* Prerequisite(s): MATH 1050 or MATH 1055</td>
<td>4:4:0</td>
</tr>
<tr>
<td><strong>PHYS 2015</strong></td>
<td>College Physics I Lab</td>
<td>Designed to accompany PHYS 2010. Provides firsthand experience with the laws of mechanics, fluids, waves, heat, thermodynamics, and data analysis. Course Lab fee of $15 applies.</td>
<td>* Prerequisite(s): PHYS 2010</td>
<td>1:0:2</td>
</tr>
<tr>
<td><strong>PHYS 2020</strong></td>
<td>College Physics II</td>
<td>A continuation of PHYS 2010. Covers electricity, magnetism, waves, sound, optics, and nuclear physics.</td>
<td>* Prerequisite(s): PHYS 2010</td>
<td>4:4:0</td>
</tr>
<tr>
<td><strong>PHYS 2025</strong></td>
<td>College Physics II Lab</td>
<td>Designed to accompany PHYS 2020. Provides firsthand experience with the laws of electricity, waves, optics, nuclear physics, and data analysis. Course Lab fee of $15 applies.</td>
<td>* Prerequisite(s): PHYS 2025</td>
<td>1:0:2</td>
</tr>
<tr>
<td><strong>PHYS 2100</strong></td>
<td>Physics for Scientists and Engineers I</td>
<td>A calculus-based treatment of introductory physics for scientists and engineers. Topics include mechanics, fluid physics, thermodynamics, vibrations, and waves. Includes 1 hour of recitation per week.</td>
<td>* Corequisite(s): PHYS 2125</td>
<td>4:4:1</td>
</tr>
<tr>
<td><strong>PHYS 2120</strong></td>
<td>Physics for Scientists and Engineers I Lab</td>
<td>Designed to accompany PHYS 2120. Provides firsthand experience with the laws of mechanics, thermal physics, vibrations, and waves. Introduces methods of scientific data analysis. Course Lab fee of $15 applies.</td>
<td>* Corequisite(s) or Corequisite(s): MATH 1210</td>
<td>1:0:2</td>
</tr>
<tr>
<td><strong>PHYS 2220</strong></td>
<td>Physics for Scientists and Engineers II</td>
<td>A continuation of PHYS 2210. Covers electricity and magnetism, inclusive of Maxwell's equations. Develops theory of electromagnetic waves and optics. Presents introductory electronics and modern physics topics. Includes one hour of recitation.</td>
<td>* Prerequisite(s): PHYS 2210</td>
<td>4:4:1</td>
</tr>
<tr>
<td><strong>PHYS 2225</strong></td>
<td>Physics for Scientists and Engineers II Lab</td>
<td>Designed to accompany PHYS 2220. Verifies through laboratory experience the laws of electricity and magnetism, electric circuits, and optics. Principles of data collection and analysis are emphasized. Course Lab fee of $15 applies.</td>
<td>* Corequisite(s): MATH 2210</td>
<td>1:0:2</td>
</tr>
<tr>
<td><strong>PHYS 2500</strong></td>
<td>Elementary Fluids and Thermal Physics</td>
<td>Presents a mathematically rigorous introductory description of fluid mechanics, thermodynamics, and heat transfer beyond that presented in PHYS 2210. Presents applications in both physics and engineering.</td>
<td>* Prerequisite(s): PHYS 2210, Departmental Approval</td>
<td>3:3:0</td>
</tr>
<tr>
<td><strong>PHYS 2800</strong></td>
<td>Introduction to Materials Physics</td>
<td>Covers the atomic structure of materials and their properties, including electronic, thermal, and optical properties. Addresses experimental methods for creating and studying materials, and current topics in materials science including thin films, surface physics, metamaterials, and nanostructured materials.</td>
<td>* Prerequisite(s): PHYS 2220</td>
<td>3:3:0</td>
</tr>
<tr>
<td><strong>PHYS 295R</strong></td>
<td>Introduction to Independent Research</td>
<td>Working under faculty supervision, allows research on a project determined jointly with a faculty member and approved by the department chair. Emphasizes experimental technique, data collection, modeling, and analysis techniques. May be repeated for no more than six hours of elective credit.</td>
<td>* Prerequisite(s): PHYS 2210, Departmental Approval</td>
<td>1 to 3:0:3 to 9 On Sufficient Demand</td>
</tr>
<tr>
<td><strong>PHYS 3010</strong></td>
<td>Physics Experiments for Secondary Education</td>
<td>Addresses pedagogical methods for student physics laboratory exercises and demonstrations. Studies currently available commercial laboratory equipment for teaching physics in a lab setting. Includes ideas and methods for building inexpensive demonstrations and lab exercises. Provides training in safe and effective use of lab equipment.</td>
<td>* Prerequisite(s): PHYS 2210, (MATH 1050 or MATH 1055), MATH 1210, PHYS 2220, MATH 1060, and University Advanced Standing</td>
<td>1:0:3</td>
</tr>
</tbody>
</table>

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**Course Catalog 2020-2021**

Utah Valley University
PHYS 3040  
Modern Physics for Secondary Education  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): PHYS 2220, MATH 1220, and University Advanced Standing  
Addresses topics of special relativity, development of quantum mechanics, physics of the atom, elementary solid state physics, and elementary particle physics.

PHYS 3110  
Modern Physics I  
3:3:0  
Fall  
* Prerequisite(s): PHYS 2220 and University Advanced Standing  
* Corequisite(s): PHYS 3115  
Addresses topics of error analysis and statistics, wave mechanics, special relativity, development of quantum mechanics, and atomic physics.

PHYS 3115  
Introduction to Experimental Physics I  
2:1:3  
Fall  
* Prerequisite(s): PHYS 2220 and University Advanced Standing  
* Corequisite(s): PHYS 3110  
Introduces selected experiments of classical and modern physics in a laboratory setting. Addresses topics of measurement, error analysis, data analysis, and report writing.

PHYS 3120  
Modern Physics II  
3:3:0  
Spring  
* Prerequisite(s): PHYS 3110 and University Advanced Standing  
* Corequisite(s): PHYS 3125  
* Prerequisite(s) or Corequisite(s): PHYS 3300  
Covers topics in special and general relativity, and addresses applications of modern quantum mechanics including molecular physics, solid state physics, statistical mechanics, nuclear physics, particle physics, and cosmology.

PHYS 3125  
Introduction to Experimental Physics II  
2:1:3  
Spring  
* Prerequisite(s): PHYS 3110, PHYS 3115, and University Advanced Standing  
* Prerequisite(s) or Corequisite(s): PHYS 3120  
Introduces selected experiments of classical and modern physics in a laboratory setting. Addresses topics of measurement, data analysis, and report writing.

PHYS 3230  
Principles of Electronics for the Physical Sciences  
3:2:3  
Fall  
* Prerequisite(s): PHYS 2220, MATH 2210, and University Advanced Standing  
Introduces electronic measurement instruments commonly used in experimental physics laboratories. Covers principles of electronic measurements using transducers, solid-state devices, circuit analysis, logic circuits, and computers. Includes lab experience.

PHYS 3300  
Mathematical Physics  
3:3:0  
Fall  
* Prerequisite(s): PHYS 2220, and University Advanced Standing  
* Prerequisite(s) or Corequisite(s): MATH 2210 or instructor consent. MATH 2280 is strongly advised as a pre- or corequisite.  
Covers the applications of mathematical tools to experimental and theoretical research in the physical sciences. Introduces problems and systems common to physical science that can be modeled by the application of vector and tensor algebra, curvilinear coordinates, linear algebra, complex variables, Fourier series and transforms, differential and integral equations.

PHYS 3310  
Advanced Mathematical Physics  
3:3:0  
Spring  
* Prerequisite(s): PHYS 3300 and University Advanced Standing  
Explores mathematics as applied to physics. Covers many families of orthogonal polynomials and the special functions of physics, such as the Gamma, Beta, and Error functions. Presents topics in contour integration and applications of conformal mapping. Investigates probability, random processes, statistical analyses, and probability distribution functions.

PHYS 3330  
Computational Physics  
3:3:0  
Spring  
* Prerequisite(s): PHYS 3300 and University Advanced Standing  
Covers computational algorithms with specific applications to the description of physical systems. Covers iterative approximation methods, computations using matrices and vectors, numerical integration, solutions of differential equations. Uses a computer programming approach to problem solving.

PHYS 3350  
Applications of LabVIEW in Physics  
3:2:2  
Spring  
* Prerequisite(s): PHYS 3230 and University Advanced Standing  
Develops programming skills in LabVIEW. Utilizes LabVIEW as the primary interface for analog and digital I/O for applications in physics experiments. Includes a student-directed group project that demonstrates effective use of LabVIEW in hardware interfacing in a physics experiment.

PHYS 3400  
Classical Mechanics  
3:3:0  
Spring  
* Prerequisite(s): PHYS 2220 and University Advanced Standing  
* Prerequisite(s) or Corequisite(s): PHYS 3300 recommended  
Treats classical mechanics of particles and systems using advanced mathematical techniques. Covers conservation principles, Lagrangian dynamics, harmonic oscillators, motion of rigid bodies and non-inertial reference frames.

PHYS 3500  
Thermodynamics  
3:3:0  
Spring  
* Prerequisite(s): PHYS 2220, MATH 2210, and University Advanced Standing  
Addresses topics of heat, temperature, ideal gases, laws of thermodynamics, entropy, reversibility, thermal properties of solids, phase transitions, thermodynamics of magnetism, and negative temperature.

PHYS 3600  
Optics  
3:3:0  
Spring  
* Prerequisite(s): PHYS 3300, PHYS 3110, and University Advanced Standing  
Introduces the Standard Model of particle physics, which enumerates the elementary particles that make up the universe and describes their interactions. Addresses particle accelerators and detectors. Examines unresolved questions in particle physics and possible extensions to the Standard Model.

PHYS 3800  
Energy Use on Earth  
3:3:0  
Fall  
* Prerequisite(s): PHYS 1010 or PHYS 1000 or CHEM 1010 or GEO 1010 or GEO 2040 or METO 1010) and (MATH 1050 or MATH 1055) and University Advanced Standing  
Covers the science of energy production and consumption. Quantitatively analyzes various methods of energy production, distribution, and end use in all sectors of our society, including transportation, residential living, and industry. Examines the impacts of our energy consumption on the environment and prospects for alternative energy sources. Intended for science majors interested in energy use in society or in an energy related career, and for students in other majors who feel that a technical understanding of energy use will help them to understand and mitigate its impact in our society.

PHYS 4100  
Biophysics  
3:3:1  
On Sufficient Demand  
* Prerequisite(s): PHYS 3110, PHYS 3115, BIOL 1610, or instructor approval) and University Advanced Standing  
Covers the thermodynamics and statistical mechanics of biological systems, the mechanics of biologically important molecules, and the laws of fluid mechanics as applied in biological systems. Uses calculus-based mathematical models to treat specific reactions, particularly those treating biological systems as molecular machines.
Course Descriptions

PHYS 4150
Medical Physics
3:3:0 Fall
* Prerequisite(s): PHYS 3110, PHYS 3115 and University Advanced Standing

Explores the theory and applications of physics to medicine. Covers signal analysis, ultrasound, X-rays, optical, nuclear, and X-ray imaging techniques, nuclear medicine, magnetic resonance imaging, and nanomedicine.

PHYS 4200 (Cross-listed with: BIOL 4200, CHEM 4200, GEO 4200)
Teaching Methods in Science
3:2:2 Fall, Spring
* Prerequisite(s): Acceptance into secondary education program, senior-level standing, instructor approval, and University Advanced Standing

Examines objectives, instructional methods and curriculum for teaching science in the secondary school. Includes developing, adapting, evaluating, and using strategies and materials for teaching biological and physical sciences, appropriate both to the special needs of the learners and the special characteristics of science discipline.

PHYS 4210
Advanced Experimental Techniques
3:1:4 Fall
* Prerequisite(s): PHYS 3125, PHYS 3230, or instructor approval and University Advanced Standing

Introduces fundamental skills required for conducting successful scientific research in a physics laboratory setting. Covers vacuum technology, basic machine shop practice, electronic instrumentation, electron microscopy, scanning probe microscopy, nuclear magnetic resonance, and x-ray diffractometry.

PHYS 4250
Nuclear Physics
3:3:0 On Sufficient Demand
* Prerequisite(s): PHYS 3110

Covers radiation, radioactive decay, nuclear structure, interactions of radiation with matter, radiation detection, nuclear reactions, fission, fusion, and applications of nuclear physics.

PHYS 425R
Physics for Teachers
1 to 5:1 to 5:0 to 10 Summer
* Prerequisite(s): Department Approval and University Advanced Standing

For licensed teachers or teachers seeking to recertify, an update course in physics and/or basic physics core courses for teachers needing physics or physical science endorsements from the Utah State Office of Education. Teaches principles of physics and pedagogy of teaching physics for teachers in public or private schools. Emphasis will be placed on correlation with the Utah Core Curriculum, the National Science Education Standards, and the Benchmarks of Project 2061. Topics will vary.

PHYS 4350
Research Methods in Physics
3:1 to 2:2 to 4 Fall, Spring
* Prerequisite(s): Instructor and Department approval and University Advanced Standing

Prepares students for a physics dissertation. Topics will vary.

PHYS 4400
Solid State Physics
3:3:0 Spring
* Prerequisite(s): PHYS 3120, 3125, PHYS 4510, and University Advanced Standing

Explores topics relevant to the structure, behavior, and properties of crystalline materials. Includes a study of lattice vibrations, free electrons, semiconductors, superconductivity, dielectric and ferroelectric materials and magnetism.

PHYS 481R
Physics Internship
1 to 4:1 to 4:0 On Sufficient Demand
* Prerequisite(s): PHYS 2220, Departmental Approval, and University Advanced Standing

Provides supervised, practical, and research experience for students preparing for careers in physics. May be repeated for a maximum of 6 credit hours. May be graded credit/no credit.

PHYS 489R
Undergraduate Research in Physics
1 to 3:0 to 9 On Sufficient Demand
* Prerequisite(s): PHYS 2220, Departmental Approval, and University Advanced Standing

Allows research on a project determined jointly with a faculty member and approved by the department chair. Emphasizes experimental technique, data collection, modeling, and analysis techniques. May be used as part of a senior thesis. May be repeated for a maximum of 9 credits toward graduation.

PHYS 490R
Seminar
.5:.5:0 Fall, Spring
* Prerequisite(s): University Advanced Standing

Exposes students to current research topics in physics and related fields. Provides an opportunity for students to attend bi-weekly lectures presented by department faculty and invited speakers. Lectures are usually a summary of the speaker’s recent research results presented at a level appropriate for junior and senior physics majors.

PHYS 492R
Topics in Physics
3:3:0 On Sufficient Demand
* Prerequisite(s): Departmental approval and University Advanced Standing

Studies a chosen topic in physics. Topics vary depending upon student demand. Possible topic may be the mathematics for quantum mechanics. May be taken for a maximum of 6 credits toward graduation, but is limited to 3 credits for the BS in Physics.

PHYS 495R
Independent Readings
1 to 3:0 to 9 On Sufficient Demand
* Prerequisite(s): PHYS 2220, Departmental Approval, and University Advanced Standing

Working under faculty supervision, allows research on a project determined jointly with a faculty member and approved by the department chair. Emphasizes experimental technique, data collection, modeling, and analysis techniques. May be used as part of a senior thesis. May be repeated for a maximum of 9 credits toward graduation.
Peace and Justice Studies (PJST)

**PJST 3000**
Introduction to Peace and Justice Studies  
3:3:0  
* Prerequisite(s): PHIL 2050 and University Advanced Standing  

Introduces the student to the important literature, questions, and research programs of peace and justice studies. Explores personal, domestic, national, and international issues. Considers alternative conceptions of violence, war, terrorism, justice/inequality, and peace. Enables the student to become aware of various intellectual and professional disciplines that bear relationships to peace and justice, e.g., history, political theory, international relations, political economy, international law, environmental law, military science, mediation and negotiation.

**PJST 3030**
The Scientific Study of War and Peace  
3:3:0  
* Prerequisite(s): PJST 3000 and University Advanced Standing  

3:3:0  

Takes a multidisciplinary approach to the study of conditions under which the use of violence, terrorism, and war occur. Studies the use of non-violent approaches to conflict and their effectiveness. Examines the ways in which strategies for violent and non-violent approaches to conflict are developed and evaluated.

**PJST 3040**
Peace in Historical Context  
3:3:0  
* Prerequisite(s): University Advanced Standing  

Explores peace from an historical perspective. Considers the history of peace movements and humanitarianism, warfare, slavery and abolition, colonization, and indigenous perspectives on peace. Introduces students to the field of peace history and the ways historians have defined and understood peace. Enables the student to historicize peace in relationship to violence.

**PJST 3100**
Introduction to Human Security  
3:3:0  
* Prerequisite(s): ENGL 2010 and (PHIL 2050 or PHIL 205G) and University Advanced Standing  

Introduces the student, and brings him or her, to some depth in the field of human security. Engages the student in a wide range of interdisciplinary literature because this field of inquiry, discourse, and conception is contested, theoretically rich, and empirically rich. Analyzes matters that threaten human security, for example: hunger and malnutrition; disease; cultural, structural, and direct violence; ecological and environmental degradation; political and economic instability and hegemony. Analyzes the organizations, institutions, movements, and strategies assembled successfully against these threats.

**PJST 3200**
Global Poverty Facts Causes and Solutions  
3:3:0  
* Prerequisite(s): (PHIL 2050 or PHIL 205G) and University Advanced Standing  

Analyzes global poverty as a serious and pressing worldwide problem that kills over 33,000 people each day. Interrogates questions of why poverty exists, as well as what is or can be done to diminish or eliminate it. Presents sophisticated and empirically-based information regarding global malnutrition, conflict, migration, lack of employment and healthcare, etc. Uses the most recent research and research methodologies to investigate both the causes of poverty and the most promising solutions. Examines literature about various moral perspectives and how they speak to the moral duty (or its absence) to address poverty.

**PJST 3300**
Conflict Transformation Resolution and Sustainable Peace  
3:3:0  
* Prerequisite(s): PJST 3000 and University Advanced Standing  

Uses empirical data to interrogate and explicate organized death in the form of war, revolution, insurgency, or terrorism as a perennial, and one of the most complicated, problems. Uses empirical data and theory to investigate the means of conflict transformation that have been most successful. Presents a basic understanding of how conflict is transformed from (1) an active status to (2) resolution to (3) peaceful stalemate to (4) sustained peace. Explicates the process of moving from active violent conflict to sustainable peace. Explores the roles of peoples, state organizations, institutions, civil society, culture, religion, states, and multilateral organizations.

**PJST 4200**
Advanced Poverty Studies:Global Problems and Policies  
3:3:0  
* Prerequisite(s): (PHIL 2050 or PHIL 205G) and University Advanced Standing  

Analyzes the nature of poverty in diverse societies, techniques for its measurement and inaccurate measurement, and the causes and reasons for poverty and its intractability. Examines the ways in which local, national, and global factors are part of the nature of poverty. Surveys policies and institutions designed to confront the problem. Interrogates and explicates the ethical issues surrounding poverty and its alleviation.

**PJST 4300**
Race Gender and Class in Peace and Justice  
3:3:0  
* Prerequisite(s): PJST 3000 and University Advanced Standing  

Analyzes the bases of discrimination and domination in societies. Addresses the multidimensional forms of social inequality by examining concrete examples of each dimension such as the wealth gap, gendered work, and poverty. Examines the nature of social class, race, and gender as they relate to issues of war, peace, injustice, and justice. Surveys the contributions that the perspectives of the dominated and victims of discrimination offer to the resolution of inequalities and the establishment of equity.
Course Descriptions

**PJST 475R**  
Issues in Peace and Justice Studies  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): PHIL 2050, Junior Standing, and University Advanced Standing

Presents a selected topic from current issues in the area of Peace and Justice Studies which will vary each semester. May approach topics from a cross-disciplinary perspective. Requires a project demonstrating competence in the specific topic or issue. May be repeated for a maximum of 6 credits toward graduation.

**PJST 481R**  
Internship  
1 to 8:1 to 8:0  
On Sufficient Demand  
* Prerequisite(s): Program Director Approval and University Advanced Standing

Provides opportunities for internship experience in the following types of agencies: political, governmental, corporate, private, news agencies or any non governmental organization (NGO) apart from regular employment. Encourages practical, research, and/or development experience in selected areas of service related to the student's academic or professional goals relevant to peace and justice studies concerns. Requires supervision by an agency representative and approval of the Peace and Justice Studies internship advisor and the program director. Requires that written contracts be completed and signed by all responsible parties. Credit is determined by the number of hours a student works during the semester. May be repeated for a maximum of 8 credits toward graduation. May be graded credit/no credit.

**PJST 4900**  
Peace and Justice Studies Capstone  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): ENGL 2010, Senior Standing, and University Advanced Standing

To be taken during the student's last semester. Includes writing a senior thesis which points to career or graduate school goals. Requires a significant research project, which may coincide with field work and/or internship experience. Covers advanced Peace and Justice Studies research and writing instruction. Involves the creation of a portfolio helpful in applying to graduate schools or seeking employment.

**PJST 491R**  
Independent Study  
1 to 8:5 to 40  
On Sufficient Demand  
* Prerequisite(s): Program Director Approval and University Advanced Standing

For self-directed students who wish to engage in a well-defined study or project in an area of special interest within the domain of Peace and Justice Studies. Requires individual initiative and responsibility with limited formal instruction and faculty supervision. Projects may include writing a publishable paper, giving an oral presentation, passing a competency exam, or completing any other options approved by the instructor and the program director. May be repeated for up to 9 credits toward graduation.

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**Political Science (POLS)**

**POLS 1000**  
American Heritage  
3:3:0  
Fall, Spring, Summer

Studies the founding of American constitutional government. Considers the cultural, economic, legal, political, and social ramifications of the Constitution of the United States.

**POLS 1010**  
Introduction to Political Science  
3:3:0  
Fall, Spring

Explores the nature of politics and power. Compares constitutional systems of government with closed totalitarian systems such as the Communist Bloc nations. Examines public opinion, political communications, interest groups, party politics, ideologies, governmental institutions, bureaucracies, and government legal systems. Studies the role of violence and revolution. Emphasizes the influence of these political elements on the average citizens.

**POLS 1020**  
Political Ideologies  
3:3:0  
Fall, Spring

Surveys the major historical and current political ideologies including liberalism, Marxism, fascism and Islamism.

**POLS 1100**  
American National Government  
3:3:0  
Fall, Spring, Summer

Studies history and structure of American National Government, rights and responsibilities of citizens, political institutions, political processes, and governmental policies.

**POLS 1440**  
Introduction to Middle East Politics  
3:3:0  
On Sufficient Demand

Studies social, historical, political and religious influences affecting the Middle East. Explores forces that motivate policy and decision-making. Examines current issues such as the Arab-Israeli conflict, political Islam, petroleum power and U.S. foreign policy. Presents profiles of selected modern Middle East states and the balance of power in the region.

**POLS 1800**  
Our Global Community  
3:3:0  
Not Offered

Examines geography, climate and topography of Western Europe, Asia, Latin America, Pacific Rim, sub-Saharan Africa and Middle/East Islamic regions. Studies the unique social, cultural, economic and political differences and resulting tensions and conflicts. Explores how historical experience affect the expectations and perceptions of selected populations.

**POLS 2100**  
Introduction to International Relations  
3:3:0  
Fall, Spring, Summer

Discusses logic of power in international relations. Studies idealistic and realistic theories of international relations. Examines reasons why nations go to war. Compares geopolitical thrust and response.

**POLS 2200**  
Introduction to Comparative Politics  
3:3:0  
Fall, Spring, Summer

Studies comparative politics and looks at attitudes and causes of political problems. Examines methods and means employed by selected countries to solve political problems, and studies successes and failures of different approaches. Examines the means which different nations employ to deal with political problems. Explores the politics, institutions, and governments of seven selected nations.

**POLS 2220**  
Introduction to Chinese Commerce  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): ENGL 1010 or ENGH 1005

Surveys the current situation of the Chinese economy, starting with Chinese economic geography and the historical background of economic development in the post-1978 era. Concentrates on economic transition, development strategies, and basic situations of various sectors in the post-reform era, discussed in a comparative framework with the economic transition and development experience of other countries. Discusses some current eye-catching issues associated with economic development and having international impacts, such as international trade and investment transactions, energy competition, and environmental degradation of China.

**POLS 230G**  
Introduction to Political Theory  
3:3:0  
Spring

Surveys major Western political theories, from Athenian democracy to the 21st century welfare state. Analyzes such ideologies as republicanism, liberalism, socialism, and fascism, and considers how these ideas have shaped the ways in which people think and nations act. Explores how global cultures have used and abused these ideas, and how students' own political beliefs fit into the history of political ideologies.

**POLS 2400**  
Peace and Justice Studies Basics  
3:3:0  
On Sufficient Demand

Examines the complexities and consequences of efforts to deal with conflicts between individuals, groups, and nations through a variety of techniques, including violence, war, and peace building. Introduces techniques used in the non-violent resolution of conflicts. Promotes techniques to avoid resorting to violence as a means of conflict resolution.

**POLS 3000**  
Political Analysis  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): (STAT 1040, STAT 1045, MATH 1050, MATH 1055 or higher) and POLS 1010 and University Advanced Standing

Covers the analytical and quantitative methodologies used in political science and public policy research. Includes statistical analysis, database research, and writing exercises.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Semester</th>
<th>Prerequisite(s)</th>
<th>Course Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLS 3010</td>
<td>Political Analysis II</td>
<td>3:3:0</td>
<td>Spring</td>
<td>* Prerequisite(s): POLS 3000 and University Advanced Standing</td>
<td>Covers advanced political data analysis techniques, including: advanced multiple regression analysis and diagnostics, measurement reliability and validity, the use of statistical-analysis software and presentation of analysis results.</td>
</tr>
<tr>
<td>POLS 3020</td>
<td>Public Program Analysis</td>
<td>3:3:0</td>
<td>On Sufficient Demand</td>
<td>* Prerequisite(s): University Advanced Standing</td>
<td>Serves as an introduction to evaluation methodology and evaluation tools commonly used to assess publicly funded programs. Provides training and practice in the field of public program analysis. Familiarizes students with different types of program evaluation, including needs assessment, formative research, process evaluation, monitoring of outputs and outcomes, impact assessment, and cost analysis.</td>
</tr>
<tr>
<td>POLS 3030</td>
<td>State and Local Government</td>
<td>3:3:0</td>
<td>Fall Even Year</td>
<td>* Prerequisite(s): University Advanced Standing</td>
<td>Examines the operation and structure of American State and Local Government with special attention to the Utah experience. Explores the local political process, administrative practices, and intergovernmental relations.</td>
</tr>
<tr>
<td>POLS 3040</td>
<td>Survey Research and Design Methods</td>
<td>3:3:0</td>
<td>Fall Even Year</td>
<td>* Prerequisite(s): University Advanced Standing</td>
<td>Focuses on the role of polling in the political process. Introduces the theory and methods used in survey research. Includes how survey-research firms produce polls, analysis of polling for campaigns and public opinion, the psychology of survey response, survey construction, and sampling. Covers other data-collection techniques commonly used in politics and political science such as focus groups and experiments.</td>
</tr>
<tr>
<td>POLS 3050</td>
<td>Experimental Methods in Political Science</td>
<td>3:3:0</td>
<td>Fall Odd Year</td>
<td>* Prerequisite(s): POLS 3000 and University Advanced Standing</td>
<td>Provides an overview of experimental methodology currently being utilized in the field of Political Science. Dissects the multiple stages of experimental research design and data analysis. Teaches critical thinking in terms of the benefits and dangers of causal inference using experimental research.</td>
</tr>
<tr>
<td>POLS 3060</td>
<td>Qualitative Analysis</td>
<td>3:3:0</td>
<td>Spring Even Year</td>
<td>* Prerequisite(s): POLS 3000 and University Advanced Standing</td>
<td>Offers a hands-on opportunity for students to experience the practice of qualitative research. Provides training and practice in a broad set of qualitative methods as applied to public sector organizations, such as state and federal agencies, municipalities, and nonprofit organizations.</td>
</tr>
<tr>
<td>POLS 3070</td>
<td>Policy Analysis</td>
<td>3:3:0</td>
<td>Spring Odd Year</td>
<td>* Prerequisite(s): POLS 3310 and University Advanced Standing</td>
<td>Provides an introduction to the objectives, functions, and techniques of policy analysis in democratic societies, with an emphasis on the United States. Emphasizes policy analysis in government organizations. Considers policy analysis in nongovernmental settings, such as nonprofit organizations and think tanks.</td>
</tr>
<tr>
<td>POLS 3100</td>
<td>Survey of International Terrorism</td>
<td>3:3:0</td>
<td>Fall Odd Year</td>
<td>* Prerequisite(s): University Advanced Standing</td>
<td>A survey course of political violence and terrorism in the modern world. Studies terrorism and other forms of political violence and how they relate to fundamentalism, such as the Shiite Islamic, and Christian identity movements in the United States and Western Europe. Examines the concept of religious and political terrorism, as well as the ideologies, tactics, and organizations common to most terrorist groups.</td>
</tr>
<tr>
<td>POLS 3120</td>
<td>Political Parties</td>
<td>3:3:0</td>
<td>Spring Even Year</td>
<td>* Prerequisite(s): (POLS 1100 or instructor approval) and University Advanced Standing</td>
<td>Examines the American political party system with special attention given to the history, structure, functions, and role of American political parties.</td>
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Course Descriptions

POLS 3310  Introduction to Public Policy  3:3:0  Fall  
* Prerequisite(s): POLS 1100, (ENGL 1010 or ENGH 1005), and University Advanced Standing  
Provides an introduction to the process of public policymaking in the United States and to the substance of policy in areas like health policy, environmental policy, and education policy. Introduces students to the fundamental skills of policy analysis and to some of the difficult choices involved in identifying, addressing, and resolving public policy problems.

POLS 3320  Nonprofits and The Public Sector  3:3:0  Spring Odd Year  
* Prerequisite(s): (ENGL 1010 or ENGH 1005) and University Advanced Standing  
Explores the historical background, development, role, and purposes of nonprofit organizations. Expands awareness of the scope and breadth of the nonprofit sector in the United States, and examines the inner workings of nonprofit organizations as the foundation for further study.

POLS 3340  Public Innovation  3:3:0  Spring Odd Year  
* Prerequisite(s): (ENGL 1010 or ENGH 1005) and University Advanced Standing  
 Presents an overview of the background, methods, and techniques associated with public sector innovation. Equips students who wish to be innovators with the knowledge and skills necessary to imagine and implement innovative solutions to public problems.

POLS 3370  Leading Cities  3:3:0  Fall Odd Year  
* Prerequisite(s): (ENGL 1010 or ENGH 1005) and University Advanced Standing  
Provides an introduction to and overview of what leadership is within the public sector. Examines the skills required to successfully lead and manage cities for both elected and appointed leaders (mayors, city managers, city council members, etc.). Considers related topics, including the diverse functions of a city and common challenges faced by city leaders.

POLS 3380  Local Economic Development  3:3:0  Fall Even Year  
* Prerequisite(s): (ENGL 1010 or ENGH 1005) and University Advanced Standing  
Introduces the context, theory, process, and practice of local economic development policy. Examines facets of local economic development such as tax increment finance, job creation, economic analysis, business expansion and retention, and economic gardening.

POLS 3390  Urban Planning  3:3:0  Fall Odd Year  
* Prerequisite(s): University Advanced Standing  
Provides a broad introduction to the field of urban planning as a profession, a process of decision-making, and a government function. Explores the limitations and benefits of planning, primarily in areas such as climate adaptation, economic development, and natural disasters.

POLS 3400  American Foreign Policy  3:3:0  Spring  
* Prerequisite(s): POLS 1100, POLS 2100, and University Advanced Standing  
Examines the development and theories of American foreign policy with special emphasis on the twentieth and twenty-first centuries. Surveys the process by which American foreign policy is formulated and examines major events and trends in policy since World War II.

POLS 3410  Globalization and Sustainable Development  3:3:0  Fall, Spring  
* Prerequisite(s): University Advanced Standing  
Examines major measurements of sustainability indicators, approaches and institutions in disaster management, and the roles of environmental assessment, management and policy. Considers the impacts of infrastructure development, economics, and market failures, in addition to major approaches and linkages to poverty reduction. Examines the importance of governance, democratic institutions and civil society for sustainable development (SD). Considers the role of international financial and political institutions; international environmental agreements for SD.

POLS 3420  Islam in World Affairs  3:3:0  Fall Even Year  
* Prerequisite(s): University Advanced Standing  
Examines the history, traditions, and pillars of Islam as the latest among monotheistic religions in the world. Studies the role of women in Islam and its roots of diversity, including the historic split to Shia and Sunnis. Examines the influence of Islam in the politics and economies of Muslim nations around the world and examines the challenges presented by radical Islam for the modern world.

POLS 3480  Race in Politics  3:3:0  Fall Odd Year  
* Prerequisite(s): University Advanced Standing  
Analyzes the role of race and ethnicity in national, local, and political. Focuses on the ways race has been socially constructed to promote the power of some and the domination of others.

POLS 3500  International Relations of the Middle East  3:3:0  Spring Odd Year  
* Prerequisite(s): (POLS 2100 or instructor approval) and University Advanced Standing  
Covers the impact of the West on the Middle East, the Arab-Israeli wars, the rise of Islamic fundamentalist terrorist groups and regimes, the Iran-Iraq war (1980-1988), the Iraq-Kuwait-US war (1990-1991), the impact of 9/11, as well as the foreign policies of several major states in the Middle East.

POLS 3510  Post Soviet Politics  3:3:0  Fall Even Year  
* Prerequisite(s): University Advanced Standing  
Examines relations of the Russian Federation to its neighbors and other strategic international actors. Focuses on the dynamics of key bilateral relationships by highlighting such key areas as oil and energy, defense policy, economic policy priorities, and the role of international institutions.

POLS 352G  Chinese Politics  3:3:0  Fall Even Year  
* Prerequisite(s): University Advanced Standing  
Reviews the historical background in which Chinese Communist Party established its governance. Examines the politics of the People's Republic of China since 1949. Analyzes important aspects of Chinese political and economic institutions and governance, such as party-state, political economy, judicial system, military, dissent politics, and foreign policy. Examines Chinese geographic and demographic features and how those features affect Chinese politics and economy. Discusses significant effects and implications which China's political modernization and economic growth might have across its border.

POLS 353G  Asian Politics  3:3:0  Spring Even Year  
* Prerequisite(s): University Advanced Standing  
Examines the demographic features in India, China, and Japan and how those features affect politics in the three countries. Reviews the historical background in which India, China, and Japan established their national identities. Studies and compares the state-building efforts and development strategies in India, China, and Japan. Examines and compares domestic political system and government structure in these three countries. Discusses significant effects and implications which Asian politics might have across their borders.

POLS 356G  Comparative Politics of Central Asia  3:3:0  Fall Odd Year  
* Prerequisite(s): (ENGL 1010 or ENGH 1005) and University Advanced Standing  
Introduces students to the region of Central Asia with its complex nature and origins of instability. Places regional conflicts in the context of global political developments. Examines the historical background of its problems and challenges in combination with studies of its dynamically developing politics.

POLS 3600  International Relations of East Asia  3:3:0  Fall  
* Prerequisite(s): University Advanced Standing  
Studies the emergence, from the nineteenth century, of modern nations from the rich and varied cultures and societies of Pacific Asia. Focuses on China, Japan and Korea. Explores the historical and geographical context of the development of East and Southeast Asia. Examines the transformation between East and West as well as the persistence of tradition. Discusses the political, economic and cultural changes in a region whose economic output rivals that of any other area of the world.
POLS 3610 International Organization 3:3:0 Fall Odd Year
* Prerequisite(s): POLS 2100 and University Advanced Standing
Focuses on the role of international organizations in the modern state system. Analyzes procedures of international cooperation in key issue areas including: the peaceful settlement of disputes and international security, human rights, economic development, and the environment.

POLS 3620 Latin American Politics 3:3:0 Fall Even Year
* Prerequisite(s): University Advanced Standing
Studies the development of modern political institutions as an outcome of colonial practice in Latin America, such as slavery and economic dependency. Examines national politics in Latin America, focusing on issues such as political power, democratization, indigenous rights, border politics, neo-colonialism, and Latin American socialism. Explores the consequences for Latin America of neo-liberalism, Eurocentrism, narco-trafficking and globalization on the international level.

POLS 362G Modern Chinese Political Economy 3:3:0 Fall Odd Year
* Prerequisite(s): University Advanced Standing
Examines the Chinese experience in economic transition and economic development in general and in several domestic sectors, which cross the conventional boundaries between political and economic analysis and through a comparative lens vis-à-vis other transition economies and developing economies. Presents the basic historical and current developments of Chinese economy. Probes the interaction between economic development and political institutions in China, and considers the international effects and implications of Chinese economic development in a critical way.

POLS 3630 Sustainable Mountain Development 3:3:0 Spring
* Prerequisite(s): University Advanced Standing
Considers the issues of sustainable mountain development (SMD) as a part of the globalization process and one of the important priorities of the multilateral agenda of the United Nations. Includes discussion of the problems of mountain ecosystems, such as sources of goods, food, and services for mountain populations. Examines special economic development issues in rural, isolated mountain communities in the contexts of recreation and tourism, biological and cultural diversity, and religious significance.

POLS 3640 United Nations Sustainable Development Goals 3:3:0 Spring
* Prerequisite(s): University Advanced Standing
Examines the United Nations Sustainable Development Goals and the role the UN Economic and Social Council plays in the implementation of Sustainable Development Goals. Considers the role of the sustainable mountain development agenda in the UN 2030 Development Agenda and in promotion of Utah as the model of economic development among mountain nations worldwide. Examines the practical aspects of the UN Sustainable Development Goals advocacy through an engaged learning activity by visiting the UN Economic and Social Council forums.

POLS 3650 Model United Nations 3:3:0 Spring
* Prerequisite(s): University Advanced Standing
Focuses on the issues, goals and procedures of the United Nations. Incorporates research on political, economic, and social issues of assigned countries in preparation for a simulation of the United Nations. Includes debate on important international political issues accompanied by negotiation and drafting of resolutions to address global problems.

POLS 3680 International Political Economy 3:3:0 Summer Even Year
* Prerequisite(s): POLS 2100 and University Advanced Standing
Focuses on the connection between politics and economics in international relations, including an overview of some of the major issues in the area of international political economy, the international trade and financial systems, the role of multinational corporations, economic development, and economic globalization.

POLS 420R Issues and Topics in Political Science 3:3:0 On Sufficient Demand
* Prerequisite(s): ENGL 2010 and University Advanced Standing
Surveys a specific topic in political science. Topic varies each semester. May be repeated for a maximum of 6 credits toward graduation.

POLS 4250 (Cross-listed with: HLTH 4250) Public Health Organization and Policy 3:3:0 Fall, Spring
* Prerequisite(s): HLTH 3200, University Advanced Standing, and matriculation into BS Community Health or BS School Health Education; or instructor approval
Focuses on U.S. health policy and policy analysis. Describes the basic machinery of policymaking and legal processes that underpin the individual health care and public health systems. Analyzes the fundamental problems and contemporary issues in health policy and teaches students how to properly develop and analyze health policy.

POLS 4500 International Conflict and Security 3:3:0 On Sufficient Demand
* Prerequisite(s): POLS 2100 and University Advanced Standing
Focuses on causes and theories of conflict in international relations. Includes traditional and emerging threats to international security, as well as policy responses to them.

POLS 4610 International Law 3:3:0 Spring Even Year
* Prerequisite(s): POLS 2100 and University Advanced Standing
Focuses on theories, sources, and foundations of international law. Includes discussion of rights and duties of states, the relationship between international and domestic law, interstate settlement of disputes, and extraterritorial jurisdiction. Explores international law in the areas of human rights, the environment, and the use of force.

POLS 480R Internship 2 to 9:2 to 9:0 Fall, Spring
* Prerequisite(s): POLS 1100 and University Advanced Standing
Provides opportunities for internship experience in political organizations, government offices, and non-governmental organizations. May be repeated for a maximum of 9 credits toward graduation. May be graded credit/no credit.

POLS 4850 State Legislative Internship Seminar 3:3:0 Spring
* Prerequisite(s): University Advanced Standing
* Prerequisite(s) or Corequisite(s): ENGL 1010 or ENGH 1005
Prepares students who have been selected to serve as interns to the Utah State Legislature. Focuses on legislative behavior and organization; bill and law making; research and policy; comparative state government and politics and internship requirements.

POLS 490R Independent Study 1 to 4:1 to 4:0 On Sufficient Demand
* Prerequisite(s): ENGL 2010 and University Advanced Standing
Provides independent study for students unable to secure a desired class within regular semester curriculum offerings. With the approval of dean and/or department chair, student and instructor design and complete readings and other projects at the upper division level. May be repeated for a maximum of 6 credits toward graduation.

POLS 4990 Senior Seminar 3:3:0 Fall, Spring
* Prerequisite(s): POLS 3000, Senior standing in Political Science, and University Advanced Standing
Includes readings and discussions about fundamental political science problems and issues. Offers directed research project tailored to each student’s special interests.
Course Descriptions

Portuguese (PORT)

**PORT 1010**  
Beginning Portuguese I  
4:4:1  
Fall, Spring  
* Prerequisite(s): None  
For those with no prior Portuguese. Emphasizes listening, speaking, and writing skills along with basic grammar, vocabulary and verb conjugations all within the cultural context of modern Brazil and Portugal. Use eclectic methodology requiring conversational exchanges. Lab access fee of $10 applies.

**PORT 101G**  
Intensive Beginning Portuguese I  
5:5:1  
On Sufficient Demand  
* Prerequisite(s): PORT 1010  
Emphasizes conversational exchanges. Lab access fee of $10 applies.

**PORT 1020**  
Beginning Portuguese II  
4:4:1  
Fall, Spring  
* Prerequisite(s): Students need equivalent knowledge of PORT 1010  
Continuation of PORT 1010. Includes remaining first-year grammar and language concepts plus introduction to literature and cultural readings. Uses eclectic method of instruction, emphasizing conversational exchanges. Lab access fee of $10 applies.

**PORT 1050**  
Intensive Portuguese for Spanish Speaker  
5:5:1  
On Sufficient Demand  
* Prerequisite(s): (SPAN 3030 and SPAN 3040) or SPAN 3050, native speaker, or permission of instructor  
Intensive overview of basic Portuguese for Spanish speakers. Practices listening, speaking, reading, and writing skills as well as discusses cultural aspects of Portuguese-speaking societies. Uses an eclectic method of instruction, emphasizing conversational exchange.

**PORT 115R**  
Portuguese Conversation I  
1:1:0  
On Sufficient Demand  
* Prerequisite(s): PORT 202G  
Offers novice Portuguese speakers opportunities to enhance their speaking proficiency in the target language by focusing on oral verbal production. Teaches how to improve authentic pronunciation, reduce errors in authenticity of language structure, generate thought in the target language spontaneously as a substitute for translation, sharpen listening comprehension, and develop conversational strategies such as circumlocution and managing a conversation with useful expressions for starting a conversation, gaining time to think, helping the other speaker, seeking agreement, etc. Contrasts with all other first-year courses which must strive to produce mastery of the whole range of language acquisition components, including writing, grammar, etc. Facilitates lowering the affective filter when conversing in the target language by increasing the frequency of speech opportunities and defusing concern for such matters as spelling, etc. Increases mastery of lexical items through increased frequency of oral usage. May be repeated for a maximum of 3 credits toward graduation.

**PORT 202G**  
Intermediate Portuguese II  
4:4:0  
Fall, Spring  
* Prerequisite(s): PORT 1010  
Continuation of PORT 1010. Includes remaining grammar and language concepts, literature and cultural readings. Emphasizes literary readings, conversational exchanges as well as creative writing. Lab access fee of $10 applies.

**PORT 215R**  
Portuguese Conversation II  
1:1:0  
On Sufficient Demand  
* Prerequisite(s): Students should have equivalent knowledge of PORT 1020  
Offers lower division novice speakers opportunities to enhance their speaking proficiency in the target language by focusing on oral verbal production. Teaches how to improve authentic pronunciation, reduce errors in authenticity of language structure, generate thought in the target language spontaneously as a substitute for translation, sharpen listening comprehension, and develop conversational strategies such as circumlocution and managing a conversation with useful expressions for starting a conversation, gaining time to think, helping the other speaker, seeking agreement, etc. Contrasts with all other first-year courses which must strive to produce mastery of the whole range of language acquisition components, including writing, grammar, etc. Facilitates lowering the affective filter when conversing in the target language by increasing the frequency of speech opportunities and defusing concern for such matters as spelling, etc. Increases mastery of lexical items through increased frequency of oral usage. May be repeated for a maximum of 3 credits toward graduation.

**PORT 2040**  
Advanced Portuguese  
3:3:0  
Fall, Spring  
* Prerequisite(s): PORT 202G  
Offers advanced Portuguese language study for those with mastery in the language. Emphasis will be placed on authentic reading, speaking, and writing skills along with further development of cultural and historical knowledge.

**PORT 2050**  
Business Portuguese  
3:3:0  
Fall  
* Prerequisite(s): PORT 202G or equivalent knowledge  
Teaches Portuguese business terminology. Presents the role of Portuguese-speaking countries in a global economy. Explores how students can effectively do business with Brazilian and Portuguese companies within the framework of Lusophone cultures. Includes current materials dealing with today’s issues. Taught entirely in the Portuguese language.

**PORT 3050**  
Advanced Portuguese  
3:3:0  
Fall, Spring  
* Prerequisite(s): PORT 202G or equivalent knowledge  
Teaches advanced Portuguese language study for those with mastery in the language. Emphasis will be placed on authentic reading, speaking, and writing skills along with further development of cultural and historical knowledge.

**PORT 3060**  
Masterpieces of Brazilian Film  
3:3:0  
Fall, Spring  
* Prerequisite(s): University Advanced Standing  
Explores a range of Brazilian films from the early to the contemporary period. Emphasizes the cultural, historical, and political dimensions of Brazilian cinema. Taught entirely in Portuguese.

**PORT 3070**  
Modern Brazil through Literature/Music/Film  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): PORT 3050 and University Advanced Standing  
Examines the literary and musical construction of Brazil from the beginning of the 20th century to the present. Focuses on the artistic, social, and philosophical issues that shaped Brazil. Taught entirely in Portuguese.

**PORT 3100**  
Post-Modern Brazil through Literature/Music/Film  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): PORT 3050 and University Advanced Standing  
Examines the literary and musical construction of Brazil from the beginning of the 20th century to the present. Focuses on the artistic, social, and philosophical issues that shaped Brazil. Taught entirely in Portuguese.

**PORT 3200**  
Business Portuguese  
3:3:0  
Fall  
* Prerequisite(s): PORT 3050 or equivalent knowledge  
Teaches Portuguese business terminology. Presents the role of Portuguese-speaking countries in a global economy. Explores how students can effectively do business with Brazilian and Portuguese companies within the framework of Lusophone cultures. Includes current materials dealing with today’s issues. Taught entirely in the Portuguese language.

**PORT 3300**  
Advanced Portuguese  
3:3:0  
Fall, Spring  
* Prerequisite(s): PORT 3050 or equivalent knowledge  
Teaches advanced Portuguese language study for those with mastery in the language. Emphasis will be placed on authentic reading, speaking, and writing skills along with further development of cultural and historical knowledge.

**PORT 3400**  
Advanced Portuguese  
3:3:0  
Fall, Spring  
* Prerequisite(s): PORT 3050 or equivalent knowledge  
Teaches advanced Portuguese language study for those with mastery in the language. Emphasis will be placed on authentic reading, speaking, and writing skills along with further development of cultural and historical knowledge.

**PORT 3500**  
Advanced Portuguese  
3:3:0  
Fall, Spring  
* Prerequisite(s): PORT 3050 or equivalent knowledge  
Teaches advanced Portuguese language study for those with mastery in the language. Emphasis will be placed on authentic reading, speaking, and writing skills along with further development of cultural and historical knowledge.

**PORT 3600**  
Modern Brazil through Literature/Music/Film  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): PORT 3050 and University Advanced Standing  
Examines the literary and musical construction of Brazil from the beginning of the 20th century to the present. Focuses on the artistic, social, and philosophical issues that shaped Brazil. Taught entirely in Portuguese.

**PORT 3610**  
Brazil through Literature and Film  
1500-1900  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): University Advanced Standing  
Examines the literary and musical construction of Brazil from the beginning of the 20th century to the present. Focuses on the artistic, social, and philosophical issues that shaped Brazil. Taught entirely in Portuguese.

**PORT 3620**  
Modern Brazil through Literature/Music/Film  
1900-1945  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): University Advanced Standing  
Examines the literary and musical construction of Brazil from the beginning of the 20th century to the present. Focuses on the artistic, social, and philosophical issues that shaped Brazil. Taught entirely in Portuguese.

**PORT 3630**  
Post-Modern Brazil through Literature/Music/Film  
1945-today  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): University Advanced Standing  
Examines the literary and musical construction of Brazil from the beginning of the 20th century to the present. Focuses on the artistic, social, and philosophical issues that shaped Brazil. Taught entirely in Portuguese.
Paralegal Studies

(PRLG)

PRLG 1000
Introduction to American Law
3:3:0
Fall, Spring
Studies the relationship between social values, culture and the law, with particular emphasis on current events. Examines the structure of the American court system, its processes, and the American constitutional framework and federalism, methods of alternative dispute resolution, and a survey of major areas in American law, including torts, business and contracts, intellectual property, family law and estate planning. Lab access fee of $30 for computers applies.

PRLG 2100
Civil Litigation I
3:3:0
Fall, Spring
* Prerequisite(s): ENGL 1010; PRLG 2000
Overviews court system, emphasizing the Utah State Courts, rules of procedure for civil, criminal and appellate court processes. Reviews all phases of litigation, from pre-litigation and strategic planning through post-judgment processes. Resolves questions of jurisdiction, venue, choice of law, litigation strategy, discovery, and other key processes.

PRLG 2200
Legal Research and Writing I
3:3:0
Fall, Spring
* Prerequisite(s): ENGL 1010; PRLG 2000
Introduces the student to the legal system and legal sources including case law, statutory law, administrative regulations, and secondary sources. Provides basic instruction in print research in the law library and to electronic research using Westlaw and government resources. Emphasizes legal analysis and introduces students to legal writing. Lab access fee of $30 for computers applies.

PRLG 3000
Criminal Law and Procedure
3:3:0
Fall, Spring
* Prerequisite(s): PRLG 1000 and University Advanced Standing
Examines the legal and procedural aspects of crime, including the elements and categories of criminal acts and jurisdictional considerations. Studies the procedure of criminal prosecution according to the Federal Rules of Criminal Procedure, from both a prosecution and defense perspective, including constitutional assurances, investigations, case preparation, motion processes, trials and appeals.

PRLG 4200
Legal Research and Writing II
3:3:0
Fall, Spring
* Prerequisite(s): PRLG 2100; PRLG 2200; University Advanced Standing
Reviews basic legal research in print resources and on Westlaw and government resources. Continues development of legal research and writing skills. Introduces student to writing office memorandum and select appellate documents with continued emphasis on legal analysis. Lab access fee of $30 for computers applies.

PRLG 4400
Family Law
3:3:0
Fall
* Prerequisite(s): PRLG 2100; PRLG 2200; University Advanced Standing
Covers family issues and drafting of legal documents relating to domestic litigation. Explores case law related to the marriage contract, divorce, adoption, guardianships, paternity, illegitimacy, and prenuptial agreements. Emphasizes family law document production in domestic cases. Lab access fee of $30 for computers applies.

PRLG 481R
Internship
1 to 8:1 to 8:0
Fall, Spring, Summer
* Prerequisite(s): Approval Paralegal Director and University Advanced Standing; PRLG 2100, PRLG 2200, PRLG 2300
Provides actual, on-the-job work experience in a non-paying (volunteer) basis in a law office or other approved law-related situation. Emphasizes successful work experience, especially identifying and solving problems. Completers should be qualified to work in the Paralegal profession. May be repeated for a maximum of 8 credits. May be graded credit/no credit.

Automotive Power Sports (PST)

PST 1110
Two Stroke Engine Systems
2:2:0
Fall, Spring
* Corequisite(s): PST 1115
Studies the theory, diagnosis, and repair of two stroke engines. Emphasizes design and capabilities of the two stroke engine. Includes engine rebuilding techniques and principles, basics of engine fasteners, sealants, and tightening methods.

PST 1115
Two Stroke Engine Systems Lab
1:0:3
Fall, Spring
* Corequisite(s): PST 1110
Enhances the technical theory covered in the PST 1110 course. Provides an engine laboratory experience by following industry task lists for two stroke engine systems. Emphasizes demonstrations, observations, and hands-on participation. Utilizes actual vehicles and vehicle systems of major manufacturers in completing the task lists.

PST 1120
Constant Velocity Transmissions and Drive Systems
2:2:0
Fall, Spring
* Corequisite(s): PST 1125
Studies the theory, operation, diagnosis, and repair of Continuously Variable Transmissions (CVT) in snowmobiles, ATVs, and UTVs. Includes component identification and theory of tuning the CVT for optimal performance. Covers driveshaft and constant velocity boot inspection, diagnosis, and replacement.

PST 1125
Constant Velocity Transmissions and Drive Systems Lab
1:0:3
Fall, Spring
* Corequisite(s): PST 1120
Enhances the technical theory covered in the PST 1120 course. Provides a transmission laboratory experience by following industry task lists for continuously variable transmission (CVT) systems. Emphasizes demonstrations, observations, and hands-on participation. Utilizes actual vehicles and vehicle systems of major manufacturers in completing the task lists.

PST 1210
Four Stroke Small Engine Systems
2:2:0
Fall, Spring
* Corequisite(s): PST 1215
Studies the theory, diagnosis, and repair of four stroke small engines. Emphasizes design and capabilities of the four stroke small engine. Includes engine rebuilding techniques and principles, basics of engine fasteners, sealants, and tightening methods.

PST 1215
Four Stroke Small Engine Systems Lab
1:0:3
Fall, Spring
* Corequisite(s): PST 1210
Enhances the technical theory covered in the PST 1210 course. Provides an engine laboratory experience by following industry task lists for four stroke small engine systems. Emphasizes demonstrations, observations, and hands-on participation. Utilizes actual vehicles and vehicle systems of major manufacturers in completing the task lists.

PST 2100
Snowmobile Systems
2:2:0
Fall, Spring
* Corequisite(s): PST 2115
Studies the operation, diagnosis, and repair of snowmobile systems. Emphasizes design, capabilities, and uses of the snowmobile system. Includes instruction on individual systems and how these systems interrelate into the platform as a whole. Stresses safety procedures. Covers advanced repair techniques.
Course Descriptions

PST 2115
Snowmobile Systems Lab
1:0:3  Fall, Spring
* Corequisite(s): PST 2110
Enhances the technical theory covered in the PST 2110 course. Provides a laboratory experience for snowmobiles by following industry task lists for snowmobile systems. Emphasizes demonstrations, observations, and hands-on participation. Utilizes actual vehicles and vehicle systems of major manufacturers in completing the task lists. Covers advanced repair techniques. Stresses safety procedures.

PST 2120
ATV and UTV Systems
2:2:0  Fall, Spring
* Corequisite(s): PST 2125
Studies the history, operation, diagnosis, and repair of ATV and UTV systems. Emphasizes design, capabilities, and uses of the ATVs and UTVs. Includes instruction on individual systems and how these individual systems interact on the machine as a whole. Stresses safety procedures. Covers advanced repair techniques.

PST 2125
ATV and UTV Systems Lab
1:0:3  Fall, Spring
* Corequisite(s): PST 2120
Enhances the technical theory covered in the PST 2120 course. Provides a laboratory experience for ATV and UTVs by following industry task lists for ATV and UTV systems. Emphasizes demonstrations, observations, and hands-on participation. Utilizes actual vehicles and vehicle systems of major manufacturers in completing the task lists. Covers advanced repair techniques. Stresses safety procedures.

PST 2130
Small Motorcycles and Scooters
2:2:0  Fall, Spring
* Corequisite(s): PST 2135
Studies the history, operation, diagnosis, and repair of small motorcycles including dirt bikes and dual purpose motorcycles and scooters. Emphasizes design, capabilities, and uses of the motorcycle systems. Examines motorcycle systems and how these systems interact. Stresses safety procedures.

PST 2135
Small Motorcycles and Scooters Lab
1:0:3  Fall, Spring
* Corequisite(s): PST 2130
Enhances the technical theory covered in the PST 2130 course. Provides a laboratory experience for small motorcycles by following industry task lists for off-road bikes and dual purpose motorcycles and scooters. Emphasizes demonstrations, observations, and hands-on participation. Utilizes actual motorcycles and scooters and systems of major manufacturers in completing the task lists. Stresses safety procedures.

PST 2230
Street and Sport Motorcycles
2:2:0  Fall, Spring
* Corequisite(s): PST 2235
Studies the history, operation, diagnosis, and repair of larger street motorcycles including cruiser style and sport bikes. Emphasizes design, capabilities, and uses of the complex street motorcycle systems. Includes advanced diagnosis and repair of complex street bike systems. Examines motorcycle systems and how these systems interact. Stresses safety procedures.

PST 2235
Street and Sport Motorcycle Lab
1:0:3  Fall, Spring
* Corequisite(s): PST 2230
Enhances the technical theory covered in the PST 2230 course. Provides a laboratory experience for larger street motorcycles by following industry task lists for larger street motorcycles including cruiser style and sport bikes. Emphasizes demonstrations, observations, and hands-on participation. Utilizes actual vehicles and vehicle systems of major manufacturers in completing the tasks. Covers advanced repair techniques. Stresses safety procedures.

PST 2240
Outdoor Power Equipment
2:2:0  Fall, Spring
* Corequisite(s): PST 2245
Studies the operation, diagnosis, and repair of the most popular segments of the outdoor power equipment market. Emphasizes design, capabilities and uses of lawn mowers, chainsaws, trimmers, edgers, tillers, snow blowers, and generators. Includes instruction on basic maintenance and reliability of these units. Teaches rechargeable and electric outdoor power equipment. Stresses instruction of safety procedures.

PST 2245
Outdoor Power Equipment Systems Lab
1:0:3  Fall, Spring
* Corequisite(s): PST 2240
Enhances the technical theory covered in the PST 2240 course. Provides a laboratory experience for outdoor power equipment by following industry task lists for the most popular segments of the outdoor power equipment market. Emphasizes demonstrations, observations, and hands-on participation. Utilizes actual equipment of major manufacturers in completing the tasks. Includes the study of rechargeable and electric outdoor power equipment. Stresses safety procedures.

PST 2250
Personal Watercraft
2:2:0  Fall, Spring
* Corequisite(s): PST 2255
Studies the history, operation, diagnosis, and repair of personal watercraft systems. Includes the study of their unique drive systems and advanced cooling systems. Covers advanced diagnosis and repair of complex personal watercraft systems. Discusses hull repair and graphics installation. Stresses proper safety procedures.

PST 2255
Personal Watercraft Systems Lab
1:0:3  Fall, Spring
* Corequisite(s): PST 2250
Enhances the technical theory covered in the PST 2250 course. Provides a laboratory experience for personal watercraft by following industry task lists for the most popular segments of the personal watercraft market. Emphasizes demonstrations, observations, and hands-on participation. Utilizes actual equipment of major manufacturers in completing the tasks. Covers advanced repair techniques of complex personal watercraft systems. Stresses safety procedures.

Psychology (PSY)

PSY 1010
General Psychology
3:3:0  Fall, Spring, Summer
An introductory course in modern scientific psychology. Covers major domains of scientific psychology including biological foundations, sensations, perception, learning, motivation, human development and abnormal psychology. Examines major psychological and professional applications. Canvas Course Mats $25/ Lumen applies.

PSY 101H
General Psychology
3:3:0  Fall
Covers major domains of scientific psychology including biological foundations, sensation and perception, learning, motivation, human development, and abnormal psychology. Examines major psychological and professional applications. Students will be expected to write at least two papers and work collaboratively.

PSY 1100
Human Development Life Span
3:3:0  Fall, Spring, Summer
Explores genetic and environmental influences on human development and behavior from conception and birth through old age and death. Examines typical physical, cognitive, and psychosocial changes at each developmental stage throughout the life span. Explores major theoretical perspectives on human development. Canvas Course Mats $86/McGraw applies.

PSY 1250
Psychology Applied to Modern Life
3:3:0  * Prerequisite(s): PSY 1010 with grade C- or higher and (ENGL 1010 or ENGH 1005 with a C+ grade or higher)
Examines knowledge about key concepts and findings from the science of psychology. Applies effective strategies, grounded in psychology, to their own lives in areas that will help them to be healthier and happier. Key topics include: stress, social influences and interpersonal communication, relationships and life transitions, and mental and physical health.
Course Descriptions

PSY 2250
Psychology of Interpersonal Relationships
3:0  Fall, Spring, Summer
* Prerequisite(s): ENGL 1010 or ENGH 1005 (with a C- grade or higher) and PSY 1010 (with a C- grade or higher)

Integrates cognitive psychological theory in an experiential setting to build personal communication skills. Helps students better understand their interactions with others. Teaches practical skills used in personal, professional, and social relationships. Studies problem-solving models and conflict resolution methods.

PSY 2400
Positive Psychology
3:0  Fall, Spring, Summer
* Prerequisite(s): PSY 1010 (grade of C- or higher) and ENGL 1010 or ENGH 1005 (grade of C- or higher)

Provides an overview of the scientific study of human strengths and virtues. Examines topics such as happiness, optimism, gratitude, altruism, forgiveness, human strengths, optimal performance, and personal fulfillment. Knowledge gains are reinforced with personalized experiential learning activities.

PSY 2710
Introduction to Brain and Behavior SS
3:0  Fall, Spring, Summer
* Prerequisite(s): ENGL 1010 or ENGH 1005 with a C+ or higher

Introduces neuroanatomy and neurophysiology. Includes how neurons communicate to coordinate various functions and behaviors. Addresses research methods used to study the brain and the nervous-system mechanisms to control functions and behaviors.

PSY 275R
Survey of Current Topics
1 to 3:0  On Sufficient Demand
* Prerequisite(s): ANTH 101G or PSY 1010 or SOC 1010 and (ENGL 1010 or ENGH 1005) with a C+ grade or higher

Presents selected topic in Psychology and will vary each semester. Approaches subjects from cross-disciplinary perspective. Requires a project demonstrating competency in the specific topic. May be repeated for nine credits toward graduation.

PSY 2800 (Cross-listed with: HLTH 2800) SS
Human Sexuality
3:0  Fall, Spring, Summer
* Prerequisite(s): ENGL 1010 or ENGH 1005

Interdisciplinary course in human sexuality, exploring topics in biology, health, psychology, and sociology. Introduces basic concepts of human sexuality, including anatomy, reproduction, and sexual response across the life-cycle. Studies gender roles, sexual orientation, dysfunction, and sexually transmitted disease. Examines sexual behavior from the perspective of ethics, religion, the law, and education. Students assess their sexual attitudes and should be able to make responsible sexuality decisions.

PSY 289R
Beginning Research Experience
1 to 3:1 to 3:0
* Prerequisite(s): PSY 1010 with a C+ or higher; ENGL 1010 or ENGH 1005 with a C+ or higher; Instructor approval

Beginning course on research in psychology. Explores psychological literature to investigate topics of interest. Requires individual initiative and responsibility. Includes limited formal instruction and faculty supervision. Projects will vary based on the student's needs and interests but may include literature searches, materials creation, data collection, or other options as approved by the instructor. May be repeated for a maximum of six credits toward graduation.

PSY 3030
Research Methods for Psychology
4:4:0
* Prerequisite(s): (BESC 3010 or PSY 3010 with a C- or higher), (ENGL 2010 with a C+ or higher), and University Advanced Standing

Explains the logic of the classical true experiment and how it permits causal inferences. Compares and contrasts the benefits and drawbacks of quasi-experimental and correlational research designs. Includes the design of an empirical psychological study. Covers compliance with guidelines for ethical research as codified in law and the American Psychological Association's ethics code. Requires collection, analysis, and presentation of quantitative data for an empirical psychological study. Includes a lab.

PSY 3100
Psychology of Gender
3:3:0  Fall, Spring, Summer
* Prerequisite(s): PSY 1010 (with a C- grade or higher) and (ENGL 2010 with a C+ grade or higher) and University Advanced Standing

For Behavioral Science majors and others interested in gender issues from a psychological perspective. Explores the topic of gender behaviors and attitudes that relate to (but are not entirely congruent with) biological sex. Discusses biological influences on gender, gender differences, gender development, and the influence of gender on various dimensions of daily life.

PSY 3105
Health Psychology
3:3:0  Fall, Spring, Summer
* Prerequisite(s): (PSY 1010 or PSY 1100) with grade C- or higher or (Community Health major and HLTH 2800 or HLTH 3260) with grade C- or higher, ENGL 2010 with grade C+ or higher, and University Advanced Standing

Examines underlying biological, psychological, and social factors, that interact and contribute to illnesses. Examines how beliefs, attitudes, and lifestyles contribute to overall health. Includes preventative strategies and techniques. Introduces motivational strategies to work productively with patients in healthcare settings.

PSY 3200
Infancy and Childhood Development
3:0  Fall, Spring, Summer
* Prerequisite(s): (PSY 1010 or PSY 1100) with grade C- or higher or (Community Health major and HLTH 2800 or HLTH 3260) with grade C- or higher, ENGL 2010 with grade C+ or higher, and University Advanced Standing

Teaches major theories of infant and child development. Identifies the sequence of development including physical, mental, and emotional conditions. Studies special needs and exceptional children. Examines parenting styles. Emphasizes development of the 'whole child'.

PSY 3210
Adolescent Development
3:0  Fall, Spring, Summer
* Prerequisite(s): PSY 1010 (with C- grade or higher) and (ENGL 2010 with C+ grade or higher) and University Advanced Standing

Focuses on physical, social, mental and emotional development of adolescents. Examines current research regarding optimal conditions for healthy maturation and separation/individuation from parents. Addresses adjustment problems, prevention, and remedies.

PSY 3220
Adult Development
3:0  Fall, Spring
* Prerequisite(s): PSY 1010 (with C- grade or higher) and (ENGL 2010 with C+ grade or higher) and University Advanced Standing

Studies adult developmental stages (end of adolescence through old age). Examines stable patterns and predictable changes in physiological and psychological and cognitive processes, emphasizing current research in optimal adult functioning.

PSY 3300
Motivation and Emotion
3:0  On Sufficient Demand
* Prerequisite(s): PSY 1010, (ENGL 1010 or ENGH 1005 with a C+ or higher), and University Advanced Standing

Examines motivation and emotion that underlie thought and behavior from a variety of perspectives. Explores the various theoretical approaches to motivation and emotion such as biological, phenomenological, cognitive, developmental and social constructivist approaches. Examines the historical background of motivation and emotion research, as well as a number of current applied motivational approaches.

PSY 3400
Abnormal Psychology
3:0  Fall, Spring, Summer
* Prerequisite(s): PSY 1010 (with C- grade or higher) and (ENGL 2010 with a C+ grade or higher) and University Advanced Standing

Foundation course for psychology majors. Examines the psychology of abnormal behavior, historical explanations and current biological and psychological theories of abnormal behavior. Emphasizes the description of mental disorders according to the American Psychiatric Association Diagnostic and Statistical Manual. May be delivered online.
Course Descriptions

PSY 3420
Cognitive Psychology
3:3:0 Spring, Summer
* Prerequisite(s): PSY 1010 (with C- grade or higher) and (ENGL 2010 with a C+ or higher) and University Advanced Standing

Introduces students to the core concepts, theoretical perspectives, empirical findings, and historical trends in cognitive psychology. Includes classical and operant conditioning, modal model of memory, and higher cognitive processes. Explores animal as well as human research.

PSY 3430
Psychopharmacology
3:3:0 Spring
* Prerequisite(s): PSY 2710 (with C-grade or higher) or (ZOOL 2320 and ZOOL 2420 with C-grade or higher in both courses) and (ENGL 2010 with a C+ grade or higher); University Advanced Standing

Addresses basic principles of nervous system function with emphasis on communication between nerve cells. Focuses on therapeutic drugs as well as drugs of abuse to include mechanisms of action and behavioral effects.

PSY 3450
Behavioral Neuroscience
4:3:3 Spring
* Prerequisite(s): PSY 2710 (with C-grade or higher) or (ZOOL 2320 and ZOOL 2420 with C-grade or higher in both courses) and (ENGL 2010 with a C+ grade or higher); University Advanced Standing

Identifies major interactions between physiology and behavior. Covers physiological analysis, structures, and functions of the nervous system. Investigates topics including sensory and motor function, states of consciousness, sexual behavior, psychopathology, learning and memory. Course lab fee of $15 applies.

PSY 3460
Personality Theory
3:3:0 Fall, Spring, Summer
* Prerequisite(s): PSY 1010 (with C-grade or higher) and (ENGL 2010 with a C+ grade or higher) and University Advanced Standing

Introduces the basic psychological theories attempting to answer the question 'What is Personality?' Examines the scientific study of the uniqueness of each of us as individuals. Explores how individuals develop personality similarities as well as differences by examining classical personality theories, societal influences, cultural variations, behavioral genetics, anatomy and biochemistry, sex and gender differences and family function. May be delivered hybrid and/or online. Course fee of $15 for materials. Canvas Course Mats $66/McGraw applies.

PSY 3480
Principles of Learning
4:3:3
* Prerequisite(s): PSY 1010 (with C-grade or higher) and (ENGL 2010 with a C+ or higher) and University Advanced Standing

Examines major concepts, theoretical perspectives, empirical findings, and historical trends in the scientific study of behavior. Focuses on application of psychological principles to personal, social, and organizational issues, as appropriate. Stresses use of critical and creative thinking, skeptical inquiry, and the scientific approach to solve problems related to behavior.

PSY 3490
Sensation and Perception
4:3:3 Fall, Spring
* Prerequisite(s): (PSY 1010 and PSY 2710 both with C-grade or higher), ENGL 2010 (with a C+ grade or higher), and University Advanced Standing

Provides a foundation in how sensory systems interpret the world. Explores each of the primary sensory systems by defining the physical energy that is detected. Examines how that energy is transduced into neural impulses, and samples how aspects of that information are encoded to provide a representation of our world. Takes a neuroscientific approach to the topic, beginning with an overview of the nervous system, including the organization of the brain and spinal cord, how neurons work, and how neurons communicate with each other. Course lab fee of $15 applies.

PSY 350G
Social Psychology
3:3:0
* Prerequisite(s): PSY 1010 (with grade C- or higher) and (ENGL 2010 with a C+ grade or higher) and University Advanced Standing

Studies the ways in which social context influences behavior. Reviews both social and psychological research. Includes culture and personality theory. Presents a multidisciplinary approach to understanding human behavior. Requires a research project to observe and report individual or group behavior in a real life setting. May be delivered hybrid.

PSY 3660
Neuroscience of Emotion
3:3:0 On Sufficient Demand
* Prerequisite(s): PSY 2710, University Advanced Standing and Instructor approval

Explores the scientific investigation of the biological basis of emotion in human and non-human animals. Provides an overview of the neural correlates of emotional states. Examines the role of neurotransmitter systems, anatomical structures, and neural circuits. Requires collection, analysis, and presentation of current primary research.

PSY 3710
Introduction to Forensic Psychology
3:3:0 Spring
* Prerequisite(s): PSY 1010 (with grade C- or higher) and (ENGL 2010 with a C+ or higher) and (PSY 3400 or PSY 3500 with a C- or higher) and University Advanced Standing

Introduces the complex field of forensic psychology which involves the overlap between the science of psychology and the law. Builds a basic understanding of the psychological principles and concepts that are part of the legal system. Highlights how the science of psychology potentially contributes to improvements and changes in the legal system. Outlines the role of forensic psychologists with regard to the legal system. Ideas regarding potential careers in the field are emphasized. Provides students the opportunity to customize course activities to suit their learning needs and styles from a variety of choices.

PSY 3850
Psychology of Good and Evil
3:3:0
* Prerequisite(s): PSY 1010 and (ENGL 2010 with a C+ grade or higher) and University Advanced Standing

Provides an integrated approach to understanding the roots of good and evil in human behavior. Explores themes and studies of human caring and destructiveness. Analyzes and develops psychological explanation of why individuals choose different courses of action under similar circumstances. Explores such concepts as attachment and parental discipline, bystander phenomena, response to authority, genocide, killing during war, group identity, bullying, views of the other and racism, forgiveness and reconciliation, and psychopathology and the biology of emotion.

PSY 4010
Experimental Psychology
3:3:0 Fall, Spring, Summer
* Prerequisite(s): (ENGL 2010 with a C+ grade or higher), BESC 3010, BESC 3020, and University Advanced Standing

Explores various experimental research designs (true experimental and quasi-experimental), emphasizing application and evaluation. Requires conducting an original psychological experimental research project.

PSY 4150
Tests and Measurements
3:3:0
* Prerequisite(s): (ENGL 2010 with a C+ grade or higher), BESC 3010 (with grade C- or higher), and University Advanced Standing

Introduces the history of psychological tests, examines tests in use at the present time and considers the appropriate roles of psychological testing in modern society. Studies individual and group assessment in the areas of intelligence, aptitude, achievement, personality and interest. Critically evaluates tests and other instruments of measurement for validity and reliability.

PSY 4300
Introduction to Counseling and Psychotherapy
3:3:0 Fall, Spring, Summer
* Prerequisite(s): PSY 1010 (with grade C- or higher) and PSY 3400 (with a C- grade or higher) and (ENGL 2010 with a C+ grade or higher) and University Advanced Standing

Surveys concepts and practices of major therapeutic systems. Introduces students to the major psychotherapeutic models. Addresses basic counseling issues including ethics and professionalism. Develops skills in relationship development, interviewing, initial assessment and intake procedures. May be delivered online.

PSY 4400
Introduction to Group Psychotherapy
3:3:0
* Prerequisite(s): PSY 1010 (with C-grade or higher), PSY 3400 (with grade C- or higher), (ENGL 2010 with a C+ or higher), and University Advanced Standing

Discusses group therapy theory, research applied to client assessment and outcomes, legal and ethical issues. Learning activities will include screening, assessment, treatment, evaluation, and termination of group members. May be delivered online.
Course Descriptions

PSY 4461 (Cross-listed with: PHIL 4461)  
Moral Psychology  
3:3:0  
Spring Even Year  
* Prerequisite(s): (PHIL 2050 or PHIL 205G or PHIL 205H or PSY 1010 or PSY 101H) and University Advanced Standing  
Analyzes questions about how people engage in moral thinking and in moral behavior from the perspectives of the philosophy of mind, ethics and psychology. Explores topics such as virtue and character, reason and passion, altruism and egoism, agency and responsibility, and moral intuitions.

PSY 4500  
History and Systems of Psychology  
3:3:0  
* Prerequisite(s): PSY 1010 (with C-grade or higher) and (ENGL 2010 with a C+ grade or higher) and University Advanced Standing  
Identifies key contributors, historical systems and theories within the field of psychology. Includes contributions to present knowledge of affect, behavior, and cognition. Stresses similarities and differences between theories. Especially for students planning to take the Advanced Psychology Subject Test portion of the GRE.

PSY 4666  
East Meets West Psychology  
3:3:0  
Summer  
* Prerequisite(s): PSY 1010, ENG 2010, and University Advanced Standing  
Examines Eastern and Western spiritualities and their application to mental health. Synthesizes these systems of belief with Western phenomenology. Critiques the theory and practice of psychology from this broader spiritual perspective. Applies these spiritual systems to the theory, research and practice of psychology. Provides experience of meditation, spiritual centering, and respectful spiritual discourse.

PSY 4690  
Human Intelligence  
3:3:0  
* Prerequisite(s): PSY 1010 (with grade C- or higher), BESC 3010 (with grade C- or higher), and (ENGL 2010 or 2020 with a C+ grade or higher); University Advanced Standing  
Explores theories about human intelligence and how intelligence impacts health, social, and psychological outcomes. Considers how cognitive and biological variables are related to individual differences in human intelligence.

PSY 475R  
Current Topics in Psychology  
1 to 3:1 to 3:0  
On Sufficient Demand  
* Prerequisite(s): PSY 1010 and (ENGL 2010 with a C+ grade or higher) and University Advanced Standing  
Presents selected topic in Psychology and will vary each semester. Requires a project demonstrating competency in the specific topic. May be repeated with different topics for 3 credits toward graduation.

PSY 480G  
Cross-Cultural Psychology  
3:3:0  
Fall, Spring  
* Prerequisite(s): PSY 1010 and University Advanced Standing  
Offers an opportunity to develop an appreciation for the interplay between psychological and cultural contributions to personal and group growth and well-being. Explores how culture influences the lived experience, particularly as it pertains to relationality. Gives consideration to both within and between culture variability.

PSY 482R  
Internship Seminar  
1:1:0  
* Prerequisite(s): University Advanced Standing  
Corequisite(s): BESC 481R  
Provides integration of classroom learning with learning that takes place in an on-site internship. To be taken concurrently with BESC 481R, Senior Internship. May be repeated for a maximum of 6 credits toward graduation.

PSY 483R  
Psychology Internship  
1 to 3:1 to 3:0  
* Prerequisite(s): PSY 1010 with grade C- or higher; BESC 3010 with grade C- or higher; and University Advanced Standing  
Provides credit for internships approved by faculty and written contracts must be signed. May be repeated for a maximum of 8 credits toward graduation.

PSY 4850  
Introduction to Pedagogy  
3:3:0  
* Prerequisite(s): PSY 1010; (ENGL 2010 with a C+ or higher); Instructor approval; and University Advanced Standing  
Builds a foundation for teaching at the college level through the study of best practices in college pedagogy via primary sources, review papers, and expert perspectives. Applies pedagogical knowledge through the delivery of multiple guest lectures on campus after creating appropriate course materials.

PSY 488R  
Advanced Research Experience in Psychology  
1 to 3:1 to 3:0  
* Prerequisite(s): PSY 1010 with a C grade or higher; ENGL 2010 with C+ grade or higher; University Advanced Standing; Instructor approval  
Expands research experience by either (1) significantly assisting on a faculty member's research project or (2) carrying out an independent research project of the student's design under faculty mentorship. May be repeated for a maximum of 6 credits toward graduation.

PSY 490R  
Independent Studies  
1 to 3:1 to 3:0  
On Sufficient Demand  
* Prerequisite(s): Instructor approval, department chair approval, and University Advanced Standing; for Behavioral Science Bachelor Degree students only  
For qualified students who wish to undertake a well-defined project or directed study related to an area of special interest. Requires individual initiative and responsibility. Includes limited formal instruction and faculty supervision. Projects may include writing a publishable paper, passing a competency exam, producing an annotated bibliography, oral presentation, or other options as approved by instructor. May be repeated for a maximum of 6 credits.

PSY 491R  
Psychology Capstone Internship  
1 to 3:1 to 3:0  
Fall, Spring  
* Prerequisite(s): University Advanced Standing and instructor approval  
Corequisite(s): PSY 492R  
Provides an in-depth experience applying knowledge from two or more of the following areas of psychology: statistics/research methods, biological, developmental, cognitive, social/personality, and mental and physical health. May not be part of the student's regular employment. Requires professional supervision. Requires faculty approval and signed written contracts. May be repeated for a maximum of 8 credits toward graduation.

PSY 492R  
Psychology Capstone Seminar  
1:1:0  
Fall, Spring, Summer  
* Prerequisite(s): Advanced University Standing and instructor approval  
Corequisite(s): PSY 491R  
Provides integration of classroom learning with the student's capstone internship. Reinforces learning outcomes of the psychology capstone internship. May be repeated for a maximum of 8 credits toward graduation.

Physical Education  
Recreation (REC)

REC 1500  
Canoeing I  
1:5:1.5  
Fall, Summer  
Teaches basic canoeing techniques including safety, technical information, equipment, paddling skills, and canoe maneuvering. Requires overnight camping. Requires the ability to swim 100 yards without stopping on the first day of class. Course fee of $80 for transportation, equipment applies.
Course Descriptions

REC 1501
Canoeing II
1:5:1:5 Not Offered
* Prerequisite(s): REC 1500 or Instructor Permission
Prepares students to qualify to become instructors who will teach on water up to and including Class I on the International Scale of River Difficulty. Prepares students to teach the American Canoe Association's Intro to Canoe course on flat water, and the Basic River Canoe course in a river environment and to teach students fundamental river paddling skills including boat handling, paddling technique, identifying hazards, river reading and self-rescues in moving water.

REC 1505
Whitewater Kayaking I
1:5:1:5 Fall, Summer
Teaches basic kayaking skills to the beginning kayaker. Includes roll techniques, paddle strokes, eddy turns, ferrying, river hazards, and rescue techniques. Requires the ability to swim 100 yards without stopping first day of class. Course fee of $150 applies for transportation, equipment applies.

REC 1506
Whitewater Kayaking II
1:5:1:5 Not Offered
* Prerequisite(s): REC 1505
Builds on whitewater skills initially taught in Whitewater Kayaking I. Develops the skills and knowledge to assist in instruction and river rescue. Prepares students to help others learn to kayak, preparing them for ACA whitewater certification.

REC 1512
Fly Tying I
1:5:1:5 Not Offered
For students interested in learning or perfecting fly tying skills. Discusses and demonstrates necessary fly tying tools, materials, and knots. Introduces aquatic entomology. Studies various fly types including wet fly, dry fly, nymph, and streamer. Includes hands-on experience.

REC 1513
Fly Casting I
1:5:1:5 Fall, Spring, Summer
For students interested in learning or perfecting fly casting skills. Studies types and classification of fly rods and reels. Teaches the physics of casting and casting techniques. Includes hands-on experience. Course fee of $10 applies for materials, equipment applies.

REC 1516
Ropes Course and Teambuilding
1:5:1:5 Not Offered
Provides participants with the opportunity to participate in a group and personal development process which utilizes the ropes course as an educational tool. Consists of 3 phases. Phase I - game and exercises designed to help participants get to know and feel at ease with each other. Phase II - group initiative games/problem solving activities which develop group communication skill, cooperation, and problem solving ability. Phase III - Ropes Course activities/individual challenge which allows class members to test their physical capabilities and individual limits. Course fee of $80 for transportation, equipment, and support.

REC 1521
Indoor Rock Climbing I
1:5:1:5 Fall, Spring
Teaches basic rock climbing skills to the beginning indoor rock climber. Includes knot tying, belaying, rappelling, fixed anchors, beginning indoor climbing, and rescue techniques. Prepares student for enjoyment of indoor climbing facilities, and introduces concepts related to sport climbing. Course fee of $90 for support, equipment applies.

REC 1522
Indoor Rock Climbing II
1:5:1:5 Fall, Spring
* Prerequisite(s): REC 1521
Builds on skills and experiences gained in Indoor Rock Climbing I. Focuses on lead climbing in the indoor sport context with emphasis on higher skill development, onsite and red point techniques. Course fee of $90 applies for support, equipment applies.

REC 1525
Mountaineering
1:5:1:5 Summer
* Prerequisite(s): REC 1535, REC 1527
Covers mountaineering subjects including hiking, rock climbing, mountain camping, and mountain survival. Requires good health and fair physical condition in order to enjoy the class. Provides technical climbing and safety equipment. Students provide camping equipment (this may be rented at a low cost at the Outpost on campus), boots or shoes, clothing and leather gloves suitable for hiking and climbing. Taught on block only. Course fee of $70 for transportation, materials, and equipment applies.

REC 1527
Rock Climbing I
1:5:1:5 Fall, Spring, Summer
Teaches basic rock climbing skills to the beginning rock climber. Includes knot tying, belaying, rappelling, top-rope anchors and site management, beginning lead climbing, and rescue techniques. Course fee of $20 for equipment applies.

REC 1528
Rock Climbing II
1:5:1:5 Fall
* Prerequisite(s): REC 1527 or Instructor Approval
Teaches intermediate rock climbing skills. Includes placing passive and active anchors on simulated lead climbs, multi-pitch belaying and rappelling. Teaches self- and partner-rescuing, ascending, route finding, crack and face climbing techniques, rock shoe resoling, and an introduction to aid climbing. Course fee of $90 for transportation, equipment applies.

REC 1535
Backpacking
1:5:1:5 Fall, Spring, Summer
* Prerequisite(s): Ability to carry a 40 lbs pack for 15-25 miles
Covers the basic aspects of backpacking, camping, and wilderness travel. Includes labs, lectures, demonstration, audio-visual and extended field trips. Teaches basic components of backpacking and lifelong values of outdoor recreation. Requires multi-night backpacking trip. Course fee of $88 for transportation, equipment, and support applies.

REC 1542
Wilderness First Responder
2:2:0 Summer
Teaches advanced emergency care specific to situations encountered in a wilderness context. Prepares students for certification exam in Wilderness First Responder (WFR) or Wilderness Emergency Medical Technician Module (WEMT). Experiential Learning Credit must be from a WFR course with at least 72 hrs of contact time.

REC 1550
Mountain Biking
1:5:1:5 Fall, Spring, Summer
* Prerequisite(s): Ability to carry a 40 lbs pack for 15-25 miles
Provides the students with knowledge of cycling techniques when traveling off the pavement. Teaches bicycle maintenance and tuning. Includes several off-road rides. Stresses the enjoyment and lifetime benefits of mountain biking riding. Taught on block only. Course fee of $60 for transportation, equipment applies.

REC 1580
Kayak Touring
1:5:1:5 Fall, Spring
* Prerequisite(s): Must be able to swim 100 yards without stopping
Introductory course which teaches basic skills necessary to safely enjoy flat water (non-tidal) kayak touring. Teaches equipment selection, strokes, safety and rescue techniques. Field trip required for course completion. Course fee of $84 for transportation, equipment applies.

REC 1600
Winter Exploration
1:5:1:5 Spring
* Prerequisite(s): REC 1535
Teaches basics of snowshoeing, cross-country skiing, and winter camping, including Leave No Trace, cooking, staying warm, and building shelters. Covers risks and hazards of the winter environment. Requires overnight camping. Course lab fee of $45 course fee for equipment applies.

REC 1605
Skiing I
1:5:1:5 Spring
For the beginning skier. Covers basic skiing concepts including straight runs, stops, turns, traverses, and beginning parallel. Includes demonstration and participation. Grading is based on attendance. Lessons are at the Sundance Ski Resort. (Transportation is not provided.) Uses UVU and Sundance instructors. Students are required to have own equipment and purchase a half-day pass each ski day.

REC 1606
Skiing II
1:5:1:5 Spring
For the intermediate skier. Designed for those with basic ski skills and who would like to improve their skiing technique. Instruction is given in parallel skiing over bumps and flat terrain, hockey stops, moguls and traversing steep terrain. Uses demonstration and participation. Grading is based on attendance. Lessons are at the Sundance Ski Resort. (Transportation is not provided.) Uses UVU and Sundance instructors. Students are required to have own equipment and purchase a half-day pass each ski day.
REC 1615
Snowboarding
1:5:1.5 Spring
Provides a fun challenge to snowboarders of any ability level, starting with the beginning novice to the advanced boarder. Gives instruction in straight runs, stops, turns (falling leaf, heel edge, toe edge), and carving. Includes skill demonstration and student participation. Grading is based on attendance, participation, demonstrating skills, and tests. Lessons are at the Sundance Ski Resort. Transportation is not provided. Uses UVU and Sundance instructors. Requires students to have their own equipment and purchase a half-day pass each ski day.

REC 1625
Cross Country Skiing
1:5:1.5 Not Offered
Presents basic ski touring techniques. Studies selection and utilization of winter touring equipment and clothing in relation to varying climatic and terrain conditions. Includes trail etiquette, avalanche avoidance, and other important factors for a successful winter tour. Includes classroom instruction and ski touring. Taught on block only.

REC 2010
Avalanche Awareness
1:5:1.5 Spring
Examines the relationship of people in the backcountry and their cause/effect relationship with ever-changing snow conditions. Prepares students to safely and effectively venture into the winter backcountry. Course fee of $53 for equipment applies.

REC 2200
Foundations of Recreation
3:3:0 Fall, Spring
* Prerequisite(s) or Corequisite(s): ENGL 1010 or ENGH 1005
Introduces the study of Recreation. Studies the history and philosophy of the field of Recreation. Analyzes problems in areas covered under the umbrella of Recreation. Explores the Recreation sub-disciplines and related career and employment opportunities in this area.

REC 2400
Principles of Experiential Education in Recreation
3:3:0 Fall, Spring
* Prerequisite(s): REC 2200, ENGL 1010 or ENGH 1005
* Prerequisite(s) or Corequisite(s): ENGL 2010 and MATH 1000 or higher
Introduces the principles and concepts of experiential education in the general context of recreation programming and prepares students for further study and skill development in context specific experiential education programming. Teaches history, theory, and ethics in the domain. Offers experience in the use of learning cycles, facilitation, feedback, processing, and effective communication techniques, risk management from both physical and emotional perspectives. Uses pedagogical lecture methods and experiential learning. Requires participation in experiential education programming and observation and participation in programs outside of class time.

REC 2450
Rock Climbing Site Management and Facilitation
3:3:0 Not Offered
* Prerequisite(s): REC 1527, REC 2400
Introduces the principles and concepts of experiential education in the general context of recreation programming and prepares students for further study and skill development in context specific experiential education programming. Teaches history, theory, and ethics in the domain. Offers experience in the use of learning cycles, facilitation, feedback, processing, and effective communication techniques, risk management from both physical and emotional perspectives. Uses pedagogical lecture methods and experiential learning. Requires participation in experiential education programming and observation and participation in programs outside of class time.

REC 2500
Introduction to Adventure Recreation
2:2:0 Not Offered
Explores the philosophy, meaning and value of outdoor adventure recreation. Studies planning, organizing and leading outdoor excursions. Includes hiking, canoeing, camping, scuba diving, cross-country skiing, snowshoeing, compass navigation, outdoor cooking, archery, golfing, etc.

REC 2600
Principles of Outdoor and Adventure Education
3:3:0 Fall
* Prerequisite(s): REC 1535 and REC 2400
Teaches leadership of outdoor and adventure education topics necessary for instructing the beginning student. Uses pedagogical lecture methods and experiential learning. Includes industry standard presentations and critiques of orienteering, map reading, packing, backcountry cooking, backpack set-up, food rationing, river crossing, proper clothing, water purification, hygiene, weather forecasting, backcountry travel, Leave No Trace ethics, and personal risk management. Requires hiking or orienteering assignments outside of class. Prepares students to qualify for certification as Wilderness Stewards through the Wilderness Education Association. Addresses risk management from both physical and emotional perspectives. Uses pedagogical lecture methods and experiential learning. Requires observation and participation in programs outside of class time.

REC 2700
Leave No Trace Trainer
1:5:1.5 Fall, Spring
* Prerequisite(s): REC 1535
Designed to train environmental leaders and interpreters in the delivery of Leave No Trace (LNT) principles and practices. Emphasizes the skills and ethics necessary for low impacts on the environment.

REC 2750
Principles of Water Based Adventure Education
3:3:0 Not Offered
* Prerequisite(s): PES 1300, REC 2400
Develops the principles and concepts of experiential education in the water-based context and prepares students for further study and skill development in context specific experiential education programming. Teaches history, theory, and ethics in the domain: as well as, develops experience in the use of learning cycles, facilitation, feedback, processing and effective communication techniques. Includes industry standard presentations and critiques of water safety, hydrology, paddling and stroke technique, self and group rescue techniques, decision-making and judgment, program planning, weather, leave no trace, personal risk management, and equipment care and maintenance. Addresses risk management from both physical and emotional perspectives. Utilizes pedagogical lecture methods and experiential learning, and participation in experiential education programming. Requires observation and participation in programs outside of class time. Prepares students to seek professional certification.

REC 3100
Recreation Program Planning
3:3:0 Spring
* Prerequisite(s): REC 2200 or instructor approval) and University Advanced Standing
* Prerequisite(s) or Corequisite(s): MATH 1000 or higher
Investigates program planning and development in outdoor programs, camps, agencies, and education organizations. Emphasizes writing of technical program plans that state goals, program organization, curriculum, budgets, marketing, and evaluation.

REC 3200
Inclusive Recreation
3:3:0 Fall
* Prerequisite(s): REC 2400, REC 3100, and University Advanced Standing
Recreation service delivery for individuals with disabilities and other under-represented groups. Presents solutions to full recreation participation for individuals with physical, sensory, emotional and/or intellectual impairments. Incorporates hands on experience working with diverse populations.
Course Descriptions

REC 3300  
Wilderness Skills  
1:5:1.5  
Fall, Spring  
* Prerequisite(s): REC 1535 and University Advanced Standing  
* Prerequisite(s) or Corequisite(s): REC 2200  
Teaches tools and skills needed for surviving in the wilderness. Includes orienteering, map reading, packing, backcountry cooking, campsite set-up, food rationing, river crossing, proper clothing, water purification, hygiene, weather forecasting, backcountry travel, Leave No Trace ethics, and personal risk management. Course fee of $30 for transportation, equipment, and support applies.

REC 3400  
Risk Management  
3:3:0  
Spring  
* Prerequisite(s): REC 2200 and University Advanced Standing  
* Prerequisite(s) or Corequisite(s): MAT 1010  
Studies outdoor recreation risk management. Focuses on applying models of risk management, negligence, torts, risk management planning, and outdoor recreation safety.

REC 3500  
Recreation Administration  
3:3:0  
Fall  
* Prerequisite(s): REC 3100 and University Advanced Standing  
Analyzes the internal organization of a recreation department dealing with finances and accounting, records and reports, publicity and public relations, state and federal legislation, staff organization, coordination of community resources.

REC 3700  
Natural Resource Interpretation  
3:3:0  
Fall  
* Prerequisite(s): REC 2400 and University Advanced Standing  
Investigates theories, principles, and techniques of interpreting park, cultural, and natural resources to the public. Emphasizes techniques for providing interpretive programs developed for natural resources.

REC 385G  
Ethical Concerns in Recreation  
3:3:0  
Spring  
* Prerequisite(s): REC 2400, PHIL 2050, and University Advanced Standing  
Examines the complex and controversial world of ethics as it pertains to the fields of outdoor recreation and natural resource management. Examines these fields from numerous perspectives: anthropocentric, biocentric and ecocentric, and theocentric.

REC 4000  
Outdoor Leadership  
4:3:2  
Spring  
* Prerequisite(s): REC 1535, REC 3300, REC 2600, REC 1542, and University Advanced Standing  
Examines principles and practices of leadership in outdoor recreation programs. Focuses on the examination of theories, practices, and problems of leadership in an adventure environment. Provides hand-on experiences with students required to plan and be in a leadership position. Requires 30 hours of volunteer work experience. Course fee of $126 for transportation, equipment, and support applies.

REC 410R  
Experiential Learning Expedition  
1 to 6:1:5 to 15  
Not Offered  
* Prerequisite(s): Department approval and University Advanced Standing  
Teaches experiential learning and leadership in a expedition context. Includes but not limited to expedition planning, hard skills development, expedition behavior and group dynamics, team building, adventure tourism, and local cultural/natural resources. Repeatable up to 12 credits. Course fee of $700 for transportation, activities applies.

REC 420R  
Outdoor Leadership and Management Practicum  
2:2:0  
Fall, Spring, Summer  
* Prerequisite(s): REC 2400, Instructor approval, and University Advanced Standing  
Provides students with practical work experience (volunteer or paid) either through a program offered by the college or in an existing outdoor or experientially based agency. Includes participation in a 150 hour department approved supervised outdoor recreation service. Examines topics that vary by practicum experience. May be repeated for a total of 6 hours toward graduation. May be graded credit/no credit.

REC 430R  
Teaching Assistantship in Outdoor Recreation  
1 to 4:1 to 4:0  
Fall, Spring, Summer  
* Prerequisite(s): Instructor Approval and University Advanced Standing  
Provides students who have demonstrated a high level of proficiency to serve as assistant instructors in selected Outdoor Recreation courses. Requires students to take active leadership roles. Includes planning, sequencing and teaching outdoor recreation topics and skills with faculty supervision. May be repeated for up to 8 credit hours toward graduation. Graded Credit/No Credit.

REC 4350  
Research Methods in Outdoor Recreation  
3:3:0  
Not Offered  
* Prerequisite(s): REC 2400 and (MAT 1000 or higher) and University Advanced Standing  
Introduces students to key research in their field. Emphasizes analytical and interpretive skills. Develops scientific writing skills. Promotes design and utilization of comprehensive research methodologies commonly applied in Outdoor Recreation.

REC 4400  
Natural Resource and Protected Area Management  
3:3:0  
Fall  
* Prerequisite(s): REC 2200 and University Advanced Standing  
Examines topics in the management of Nation Parks, National Forests, Bureau of Land Management, and other public lands and protected areas focusing on management strategies and techniques for addressing common resource and social problems in natural resource recreation management. Emphasizes case studies and problem analysis. Course fee of $30 applies for transportation, support applies.

REC 4500  
Wildland Recreation Behavior  
3:3:0  
Spring  
* Prerequisite(s): REC 4400 and University Advanced Standing  
Studies behaviorally-based models and relevant research in wildland recreation. Provides an in-depth analysis of human behavior influences and topics including visitor satisfaction, crowding, carrying capacity, resource destruction, motivations, attitudes, preferences, norms, conflicts, and specialization. Using these theoretical concepts, visitor-based management models will be presented and criticized. Emphasis on critical problems affecting public land recreation management. Course fee of $20 applies for transportation, support applies.

REC 4800  
Professional Preparation in Recreation  
1:1:0  
Fall, Spring  
* Prerequisite(s): University Advanced Standing  
* Prerequisite(s) or Corequisite(s): REC 2400  
Prepares the student to make the transition from student to professional in Outdoor Recreation. Includes discussion of internship selection, application materials, interviewing skills, job search, salary negotiation, and other professional issues. Provides mentoring during the internship search process.

REC 481R  
Senior Internship  
1 to 8:1 to 8:0  
Fall, Spring, Summer  
* Prerequisite(s): REC 4800, REC 420R, 80 credit hours completed, minimum 2.5 GPA, instructor approval, and University Advanced Standing  
Provides supervised, hands-on field experience for excellent students preparing to take entry-level positions in recreation. May be repeated for a maximum of 12 credits toward graduation. May be graded Credit/No Credit.

REC 489R  
Undergraduate Research in Recreation  
1 to 4:0:5 to 20  
On Sufficient Demand  
* Prerequisite(s): REC 2200, Departmental approval of research proposal, and University Advanced Standing  
Provides students the opportunity to conduct research under the mentorship of a faculty member. Students will put in practice the theoretical knowledge gained in prior major courses. Students will create a significant intellectual or creative product that is characteristic of the recreation discipline and worthy of communication to a broader audience. May be repeated for a maximum of 8 credits toward graduation.

REC 490R  
Topics in Recreation  
1 to 3:1 to 3:0  
On Sufficient Demand  
* Prerequisite(s): (REC 2200 or Instructor Approval) and University Advanced Standing  
Focuses student reading, research, and discussion on specific areas of concentration within the field of outdoor recreation management. (Specific areas of focus will change as the instructor and his or her focus or expertise changes.) Analyzes how outdoor recreation affects and is affected by culture, ideology, socio-economic factors, history, etc. Focuses may include: Recreation and Popular Culture, Recreation and Diversity, and History and Philosophic Issues in Recreation, among others. May be repeated for up to 6 credits toward graduation.
RESP 1540
Survey of Respiratory Therapy
1:1:0 Fall, Spring, Summer
Introduces students to the profession of respiratory therapy. Includes field trips and limited lab activities. Open to all students. May be delivered hybrid and/or online.

RESP 2145
Fundamentals of Respiratory Care Lab
3:0:6 Spring
* Prerequisite(s): Acceptance into the Respiratory Therapy Program
* Corequisite(s): RESP 2300
Provides laboratory experiences to develop basic patient interaction and assessment skills required of an entry-level respiratory therapist. Emphasizes students’ ability to carry out commonly ordered respiratory therapy procedures. Includes participation in respiratory care simulations. Course lab fee of $217 applies.

RESP 2165
Mechanical Ventilation Lab
2:0:4 Summer
* Prerequisite(s): RESP 2145
* Corequisite(s): RESP 2320
Provides laboratory experience with mechanical ventilation techniques and equipment. Emphasizes patient observation and assessment skills, as well as techniques in initiating, troubleshooting, monitoring, managing, and weaning ventilator parameters. Course lab fee of $217 applies.

RESP 2210
Cardiopulmonary and Renal Anatomy and Physiology I
3:3:0 Spring
* Prerequisite(s): Acceptance into the Respiratory Therapy Program
Introduces anatomy and physiology of the pulmonary, cardiovascular, and renal systems. Includes principles of fluid dynamics governing oxygen and carbon dioxide transport throughout the body.

RESP 2230
Cardiopulmonary Pathophysiology I
2:2:0 Spring
* Prerequisite(s): Acceptance into the Respiratory Therapy Program
* Corequisite(s): RESP 2210
Covers the underlying pathophysiology of medical and surgical cardiopulmonary diseases. Emphasizes abnormal physiological processes which result in the signs and symptoms of each cardiopulmonary disorder. Includes diagnosis, selection, and implementation of therapeutic modalities and the role of the respiratory therapist in treatment.

RESP 2250
Basic Patient Assessment
2:2:0 Spring
* Prerequisite(s): Acceptance into Respiratory Therapy Program.
Introduces basic patient assessment techniques, including respiratory therapy application of obtaining patient history and physical examination. Emphasizes integration of laboratory and imaging studies.

RESP 2270
Application of Cardiopulmonary Diagnostics
3:3:0 Summer
* Prerequisite(s): RESP 2210
Introduces theory and clinical application of basic cardiopulmonary diagnostic studies, including simple spirometry, arterial and mixed venous blood gases, and electrocardiograms. Emphasizes critical thinking skills in interpretation of diagnostic findings.

RESP 2300
Fundamentals of Respiratory Care
3:3:0 Spring
* Prerequisite(s): Acceptance into the Respiratory Therapy Program.
* Prerequisite(s) or Corequisite(s): RESP 2145
Examines principles and theory of clinical application of basic respiratory treatments and therapies, including indications, contraindications, hazards and complications, and equipment management. Includes principles and theory of clinical application of airway management and invasive and non-invasive ventilation. Emphasizes patient assessment and critical thinking skills.

RESP 2320
Mechanical Ventilation I
3:3:0 Summer
* Prerequisite(s): RESP 2300
* Corequisite(s): RESP 2165
Introduces basic principles of mechanical ventilation, including determining the need for ventilation support, as well as initiation, maintaining, monitoring, and weaning from mechanical ventilation.

RESP 2330
Entry Level Respiratory Therapy Review
1:1:0 Fall
* Prerequisite(s): RESP 2320
Provides a comprehensive review to integrate concepts and skills in Respiratory Therapy.

RESP 2420
Critical Thinking in Respiratory Care
2:2:0 Fall
* Prerequisite(s): RESP 2300
Provides learning experiences for students to develop a deep and broad understanding of respiratory care content based on sound clinical decision making. Requires students to solve practical problems in respiratory care.

RESP 2520
Principles of Pharmacology
2:2:0 Spring
* Prerequisite(s): RESP 2210
Introduces pharmacology, including general principles, autonomic and central nervous system agents, cardiovascular agents, and immunotherapeutic agents. Includes the study of drugs used in managing renal, GI tract, endocrine, and infectious or neoplastic diseases and disorders.

RESP 2705
Clinical Practice I
3:3:0 Summer
* Prerequisite(s): RESP 2145
Provides opportunity to observe and participate in specialty areas of the respiratory care profession.

RESP 2725
Clinical Practice II
3:3:0 Fall
* Prerequisite(s): RESP 2705
Provides clinical rotations in selected medical settings, focusing on skills of initiation, management, and weaning of mechanical ventilation. Includes case studies as well as patient care.

RESP 3210
Cardiopulmonary and Renal Anatomy and Physiology II
2:2:0 Fall
* Prerequisite(s): RESP 2210 and University Advanced Standing
Addresses cardiopulmonary anatomy and physiology specifically for the advanced-level respiratory care practitioner focusing on the advanced physiologic considerations of the cardiovascular, pulmonary, and renal systems.
Course Descriptions

RESP 3220  
Cardiopulmonary Pathophysiology II  
2:2:0  Spring  
* Prerequisite(s): RESP 2320 and University Advanced Standing  
Examines pathophysiology and diagnosis of coronary artery disease, fungal lung diseases, neoplasms, HIV, adult respiratory distress syndrome (ARDS), chest trauma, shock, multiple organ dysfunction syndrome (MODS), and differentiation of extracellular and intracellular fluid compartments.

RESP 3230  
Advanced Cardiopulmonary Technology  
2:2:0  Spring  
* Prerequisite(s): RESP 2270 and University Advanced Standing  
Explores advanced diagnostic procedures and develops interpretive skill in cardiopulmonary function, lung dynamics, specialty gases, blood gas analysis, and metabolic patient assessment.

RESP 3260  
Neonatal/Pediatric Critical Care  
3:2:2  Fall  
* Prerequisite(s): RESP 2320 and University Advanced Standing  
Examines pediatric and neonatal respiratory care with emphasis on intensive care activities, therapeutic procedures, life support modalities, and fetal, neonatal, and pediatric pathophysiology. Course lab fee of $69 applies.

RESP 3270  
Adult Critical Care  
2:2:0  Spring  
* Prerequisite(s): RESP 2725 and University Advanced Standing  
Explores advanced level adult respiratory care in the intensive care setting. Emphasizes ventilation/perfusion monitoring, hemodynamic monitoring, airway, assessment, and critical patient management.

RESP 3280  
Extended Care Roles for Respiratory Therapists  
2:2:0  Fall  
* Prerequisite(s): RESP 2270 and University Advanced Standing  
* Prerequisite(s) or Corequisite(s): RESP 3785  
Analyzes theory and principles of extended care roles for the respiratory therapist. Examines the respiratory therapist's role in quality management, pulmonary rehabilitation, sleep medicine, homecare, and hyperbaric medicine. Includes legal, ethical, and moral considerations of chronic and extended care.

RESP 3320  
Mechanical Ventilation II  
4:3:3  Spring  
* Prerequisite(s): RESP 2320 and Advanced University Standing  
Focuses on the study of advanced mechanical ventilation. Emphasizes advanced modes of ventilation, patient management, and assessment. Includes invasive and non-invasive ventilation techniques.

RESP 3430  
Principles of Healthcare Education and Disease Management  
3:3:0  Spring  
* Prerequisite(s): RESP 2330 and University Advanced Standing  
Introduces concepts and principles of respiratory chronic disease management. Examines health models, processes, staffing, training, patient advocacy/engagement, and reporting/reimbursement necessary to improve patient outcomes and reducing healthcare costs. Provides background in educational theory and practical application skills of educational delivery and evaluation within the construct of the healthcare environment.

RESP 3510  
Anatomy and Physiology of Sleep  
3:3:0  On sufficient demand  
* Prerequisite(s): University Advanced Standing and Department approval. Requires acceptance into the Respiratory Care Program or completion of a respiratory care program or R.N. credential.  
Introduces anatomy and physiology of the neurological, cardiac, and respiratory systems during the wake and sleep cycles. Emphasizes changes related to sleep disorders.

RESP 3520  
Introduction to Sleep Disorders  
3:3:0  On sufficient demand  
* Prerequisite(s): RESP 3510 and University Advanced Standing  
Provides an overview of the history of sleep medicine, normal sleep physiology, the effects of sleep-wake disruption, sleep disorders, and abnormal sleep physiology. Includes an introduction to polysomnography and the fundamentals of therapeutic interventions utilized to treat sleep disorders.

RESP 3565  
Clinical Practice III Neonatal/Pediatric Respiratory Care  
3:3:0  Spring  
* Prerequisite(s): University Advanced Standing  
* Prerequisite(s) or Corequisite(s): RESP 3260  
Provides mentored participation in the clinical care of patients in the neonatal/pediatric critical care setting. Emphasizes cardiovascular and patient/ventilator monitoring and assessment and airway management.

RESP 3765  
Clinical Practice III Neonatal/Pediatric Respiratory Care  
3:3:0  Spring  
* Prerequisite(s): University Advanced Standing  
* Prerequisite(s) or Corequisite(s): RESP 3260  
Provides mentored participation in the clinical care of patients in the neonatal/pediatric critical care setting. Emphasizes cardiovascular and patient/ventilator monitoring and assessment and airway management.

RESP 3785  
Extended Roles in Respiratory Therapy Clinical  
2:2:0  Spring  
* Prerequisite(s): University Advanced Standing  
* Prerequisite(s) or Corequisite(s): RESP 3280  
Provides clinical experiences related to RESP 3280, such as rehabilitation, extended care, home care, polysomnography, patient assessment for discharge planning and quality management.

RESP 4610  
Advanced Patient Assessment  
3:3:0  Summer  
* Prerequisite(s): RESP 3270 and University Advanced Standing  
Emphasizes the diagnostic processes involved in assessing, evaluating, and treating patients with cardiopulmonary disease, with an intensive, mentored clinical experience.

RESP 4630  
Continuous Quality Improvement  
2:2:0  Summer  
* Prerequisite(s): University Advanced Standing  
Enhances understanding of how to construct and conduct quality improvement projects in the clinical workplace.

RESP 4640  
Respiratory Therapy Capstone  
2:2:0  Summer  
* Prerequisite(s): RESP 3270 and Advanced University Standing  
Focuses on areas of advanced respiratory care, leadership and management, case management, research, education, or other special area of interest. Student will identify and complete a project applying knowledge and skills learned in the program.

RESP 4775  
Clinical Practice IV Adult Critical Care  
4:4:0  Summer  
* Prerequisite(s): RESP 3270 and University Advanced Standing  
Provides mentored participation in the clinical care of patients in the adult critical respiratory care setting, with emphasis on hemodynamic monitoring and assessment, ventilation/perfusion monitoring, patient/ventilator monitoring and assessment, and airway management.

RESP 4800  
Respiratory Therapy Seminar  
3:3:0  Summer  
* Prerequisite(s): RESP 3270 and University Advanced Standing  
Explores problem-based clinical concepts. Includes a comprehensive program review and preparatory focus on the written and clinical simulation examinations of the NBRC. Covers resume writing and interviewing skills.

RESP 480R  
Health Education and Promotion  
1 to 4:1 to 4:0  Fall, Spring, Summer  
* Prerequisite(s): University Advanced Standing and departmental approval.  
Provides students an opportunity to pursue independent study in respiratory therapy with a faculty mentor. The health education promotion project addresses the growing role of the Respiratory Care Practitioner (RCP) in patient education, public education, and health promotion in general. Requires preparation and presentation of oral and/or written reports. May be repeated for up to 4 credits toward graduation.
RESP 4890 Principles of Respiratory Care Research and Management 3:3:0 Summer
* Prerequisite(s): RESP 3270 and University Advanced Standing
Examine research methods and the scientific approach to critical appraisal of research literature. Analyze scientific data to support approaches to respiratory care. Introduce theories, principles, and skills needed to function in a leadership position. Addresses key issues confronting respiratory care leaders today.

RESP 4940 Special Topics in Respiratory Therapy 2:2:0 Fall, Spring, Summer
* Prerequisite(s): RESP 2320 and University Advanced Standing
Provides moderated discussion and/or laboratory experiences relating to current events in health care, legislative and ethical issues, and emergent technologies in respiratory care.

Religious Studies (RLST)

RLST 3540 (Cross-listed with: PHIL 3540) Christian Ethics 3:3:0 Spring Odd Year
* Prerequisite(s): PHIL 1610 and University Advanced Standing
Examines key developments and conceptions in Christian ethics through historical and conceptual methodologies. Explores the relationship between religious and secular approaches to ethics in their approach to questions of war, economics, politics, and/or other relevant issues.

RLST 3610 (Cross-listed with: PHIL 3610) Introduction to Christian Theology 3:3:0 On Sufficient Demand
* Prerequisite(s): PHIL 1610 and University Advanced Standing
Examines key developments and conceptions in Christian theology through historical and conceptual methodologies.

RLST 3620 (Cross-listed with: PHIL 3620) Mormon Theology and the Christian Tradition 3:3:0 On Sufficient Demand
* Prerequisite(s): PHIL 1610 and University Advanced Standing
For students majoring in humanities-related disciplines and other students interested in the academic study of religion. Engages students in exploring the defining features of Mormon thought in relation to the broader Christian tradition. Examines traditional theological questions such as the problem of evil, the scriptural canon, the nature of God and humanity, and the role of ritual.

RLST 3650 (Cross-listed with: PHIL 3650) Approaches to Religious Studies 3:3:0 Spring
* Prerequisite(s): PHIL 2050 or PHIL 205H or PHIL 205G or instructor approval and University Advanced Standing
For students majoring in humanities-related disciplines and other students interested in the academic study of religion. Teaches methodological approaches and critical thinking strategies in the study of religion. Explores various disciplines in their approaches to religious belief and practice. Includes the study of such thinkers as David Hume, Immanuel Kant, Friedrich Schleiermacher, Rudolf Otto, William James, Ludwig Feuerbach, Soren Kierkegaard, Max Weber, Emile Durkheim, John Hick, and Rene Girard.

RLST 366R (Cross-listed with: PHIL 366R) Issues in Religious Studies 3:3:0 Spring Odd Year
* Prerequisite(s): PHIL 2050 or PHIL 205H or PHIL 205G or instructor approval and University Advanced Standing
For students majoring in humanities-related disciplines and other students interested in the academic study of religion. Addresses specific topics and theoretical approaches related to religious studies. Topics may include religion and violence, religion and public discourse, religious ritual, etc. Subject matter varies by semester and is repeatable for a total of 9 hours of credit.

Russian (RUS)

RUS 1010 Beginning Russian I 4:4:1 Fall, Spring
* Prerequisite(s): Students need equivalent knowledge of RUS 1020
Studies conversational Russian that is used in daily settings. Includes culture study, speaking, listening, reading, and writing. Emphasizes conversation in real life situations. Uses the Natural and Total Physical Response teaching methods. Lab access fee of $10 applies.

RUS 1020 Beginning Russian II 4:4:1 Fall, Spring
* Prerequisite(s): Students need equivalent knowledge of RUS 1010
Studies second semester conversational Russian that is used in daily settings. Includes culture study, speaking, listening, reading, and writing. Emphasizes conversation in real life situations. Uses the Natural and Total Physical Response teaching methods. Completers should be able to communicate enough to visit or work in a Russian speaking country. Lab access fee of $10 applies.

RUS 115R Russian Conversation I 1:1:0 Fall, Spring
Offers novice Russian speakers opportunities to enhance their speaking proficiency in the target language by focusing on oral verbal production. Teaches how to improve authentic pronunciation, reduce errors in authenticity of language structure, generate thought in the target language spontaneously as a substitute for translation, and sharpen listening comprehension for natural conversational flow. Contrasts with all other first year courses which must strive to produce mastery of the whole range of language acquisition components, including writing, grammar, etc. Facilitates lowering the affective filter when conversing in the target language by increasing the frequency of speech opportunities and defusing concern for such matters as spelling, etc. Increases mastery of lexical items through increased frequency of oral usage. May be repeated for a maximum of 3 credits toward graduation.

RUS 135R Russia in the Headlines 1:1:0 On Sufficient Demand
Explores current issues in Russian headlines. Explains cultural, historical, political and social factors that contribute to positions taken by current Russian leaders. May be repeated for a maximum of 3 credits toward graduation.

RUS 2010 Intermediate Russian I 4:4:1 LH Fall
* Prerequisite(s): Students need equivalent knowledge of RUS 1020
Reviews and builds upon the grammar, reading, writing, and conversation skills learned in the first year courses. Introduces readings and discussions on the history, culture, and literature of Russia, maintaining a focus on oral proficiency. Lab access fee of $10 applies.

RUS 202G Intermediate Russian II 4:4:0 Spring
* Prerequisite(s): Students need equivalent knowledge of RUS 2010
Studies fourth-semester conversational Russian that is used in daily settings. Includes culture study, speaking, listening, reading, and writing. Emphasizes conversation in real life situations. Uses the Natural and Total Physical Response teaching methods. Completers should be able to converse enough to visit or work in a Russian speaking country. Lab access fee of $10 applies.
RUS 215R
Russian Conversation II
1:1:0
Fall, Spring
* Prerequisite(s): Students should have equivalent knowledge of RUS 1020

Offers lower division / novice Russian speakers opportunities to enhance their speaking proficiency in the target language by focusing on oral verbal production. Teaches how to improve authentic pronunciation, reduce errors in authenticity of language structure, generate thought in the target language spontaneously as a substitute for translation, sharpen listening comprehension, and develop conversational strategies such as circumlocution and managing a conversation with useful expressions for starting a conversation, gaining time to think, helping the other speaker, seeking agreement, etc. Contrasts with all other first year courses which must strive to produce mastery of the whole range of language acquisition components, including writing, grammar, etc. Facilitates lowering the affective filter when conversing in the target language by increasing the frequency of speech opportunities and defusing concern for such matters as spelling, etc. Increases mastery of lexical items through increased frequency of oral usage. May be repeated for a maximum of 3 credits toward graduation.

RUS 266G
Introduction to Russian Culture
3:3:0
Fall Odd Year
* Prerequisite(s): ENGL 1010 or ENGH 1005

Studies Russian culture (988-1900) within a historical, cultural, thematic, and aesthetic context.

RUS 3030
Russian Conversation and Composition I
3:3:0
* Prerequisite(s): (RUS 202G or instructor approval) and University Advanced Standing

Emphasizes production skills [speaking and writing], reviews and expands lexical depth and advances mastery of Russian grammar. Examines contemporary Russian culture topics through studying a variety of Russian sources: readings, film, lecture, individual research, etc. Analyzes topics through active class discussion in Russian. Conducted entirely in Russian.

RUS 3040
Russian Conversation and Composition II
3:3:0
On Sufficient Demand
* Prerequisite(s): (RUS 202G or instructor approval) and University Advanced Standing

Explores communicative skills in Russian. Provides opportunity for students to improve language production through extensive oral and written instruction and study of selected literary and cultural texts. Advances mastery of Russian grammar while emphasizing production skills of speaking and writing. Prepares students to participate fully in subsequent advanced courses. All course work conducted in Russian.

RUS 3050
Advanced Russian
3:3:0
Fall, Spring
* Prerequisite(s): It is recommended that students have either taken RUS 202G, had at least one year residency in a Russian-speaking country, or instructor approval

Designed for non-native Russian speakers, who, as a result of foreign residency or similar exposure to the language, have attained a fairly good mastery of basic Russian. Targets major grammatical concepts with a focus on oral proficiency development. Overviews Russian culture and gives an introduction to Russian literature. Lab access fee of $10 applies.

RUS 3200
Business Russian
3:3:0
On Sufficient Demand
* Prerequisite(s): RUS 3050 and University Advanced Standing

Teaches Russian business terminology and prepares students to take the Business Russian Proficiency Tests sponsored by the Russian Chamber of Commerce.

RUS 3520
Russian Culture and Civilization
3:3:0
On Sufficient Demand
* Prerequisite(s): (RUS 3050 or equivalent) and University Advanced Standing

Explores chronologically the evolution and development of Russia, and a multitude of aspects that construct Russian national identity. Completers should acquire an understanding of contemporary issues, ethnic and economic development of Russia, as well as historical interdependence with other nations. Presentations and class instructions conducted entirely in Russian.

RUS 3620
Nineteenth-Century Russian Literature and Its Film Adaptations
3:3:0
On Sufficient Demand
* Prerequisite(s): University Advanced Standing

Introduces Russian Realist literature from 1800 and explores how these classic texts have been adapted for film. Emphasizes literary and film analysis and criticism, explores literary history, develops skills in interpreting literary and filmic texts, and deepens understanding of Russian culture. All coursework conducted in English with select readings in Russian upon request.

RUS 366G
Twentieth Century Russian Culture
3:3:0
Spring Odd Year
* Prerequisite(s): ENGL 2010 and University Advanced Standing

Explores the main Russian cultural influences of the 20th century. Examines the cultural, social and political movements developed from roughly 1880-1999 and considers the main figures who embody these movements. Focuses on individuals who exemplify cultural achievements in their given field or sphere of influence. Requires a research paper that focuses on an individual who contributed to the 20th century cultural milieu. Taught in English.

RUS 367G (Cross-listed with: HIST 367G)
History of Russian Film
3:2:2
Spring Even Year
* Prerequisite(s): (ENGL 1010 or ENGH 1005) and University Advanced Standing

Studies Russian cinema within the historical, cultural, thematic, and aesthetic context.

RUS 4050
Special Problems in Grammar Usage and Style
3:3:1
On Sufficient Demand
* Prerequisite(s): ([RUS 3030 and RUS 3040] or RUS 3050] and University Advanced Standing

Reviews Russian grammar focusing on problem areas. Explores grammar as deployed in different genres. Emphasizes writing in different styles. Identifies styles in readings and compiles according to certain styles.

RUS 4110
Translation and Interpretation
3:3:0
On Sufficient Demand
* Prerequisite(s): (RUS 3050 or equivalent) and University Advanced Standing

Introduces translation as a discipline. Develops the special skills needed for translating and interpreting, and to achieve mastery of the contemporary spoken and written language. Discusses basic theory, principles and tools of translation. Employs the tools of translation: dictionaries, glossaries, grammars and computerized resources. Focuses on the extensive practice of translation and interpretation from English to Russian and from Russian to English.

RUS 416G
Post Soviet Russian Media and Film
3:2:2
Fall Even Year
* Prerequisite(s): ENGL 2010 and University Advanced Standing

Examines visual media with special attention paid to the embedded cultural discourse that can only be understood with references to Russian history, language, and cultural identity. Explores Russia's depiction of and relationship with its past, present and future. Explores certain questions about visual media in post-Soviet society: the function of cinema in the new Russia; how cinema offers questions about visual media in post-Soviet society: the function of cinema in the new Russia; how cinema offers what reality cannot—a goal for people to live up to at a time when politics and ideology fail to provide direction; how cinema articulates the reality of contemporary Russian life.

RUS 490R
Special Topics in Russian Studies
3:3:0
On Sufficient Demand
* Prerequisite(s): ENGL 2010 and University Advanced Standing

Explores a variety of subjects relevant to the study of Russian language, literature and culture. Engages students in critical analysis and discourse. May be repeated for a maximum of 6 credits toward graduation.
Student Leadership and Success (SLSS)

SLSS 1000 University Student Success
3:3:0 Fall, Spring, Summer
* Prerequisite(s): Appropriate reading skills
Introduces and integrates new students to the UVU community, both academically and socially. Teaches strategies for academic success, such as critical thinking skills, time and financial management, and effective collaboration techniques. Develops student awareness of campus resources and assists in exploring and establishing personal, academic, and career goals. Includes lectures, group interaction, online interaction with faculty and students, in-class exercises, and projects which apply learning to real life situations.

SLSS 101R Student Success Topics
1 to 3:1 to 3:0 Fall, Spring, Summer
* Prerequisite(s): Appropriate reading skills
Variable credit course that surveys essential skills for success in college. Topics covered include, but are not limited to: memory, note taking, test taking, textbook reading and study strategies, time management, writing processes, communication, and thinking skills. May be repeated for a maximum of 9 credits toward graduation. May be graded credit/no credit.

SLSS 103R Student Leadership Development I
1 to 4:1:0 to 9 Fall, Spring, Summer
* Prerequisite(s): Departmental Approval
Provides an overview of leadership styles, personalities, and organizational dynamics for student leaders. Explores the structure and culture of Student Leadership, Utah Valley University, the governing boards of higher education, and the State of Utah relating to shared governance and student involvement in campus leadership. May be repeated for a maximum of 8 credits toward graduation. May be delivered hybrid.

SLSS 104R Student Leadership Development II
1 to 4:1:0 to 9 Fall, Spring, Summer
* Prerequisite(s): Departmental Approval
Focuses on the nature of leadership, citizenship, and advocacy in a democracy. Provides an overview of leadership and civics as crucial to the success of any leader, including a student leader. May be repeated for a maximum of 8 credits toward graduation.

SLSS 1050 Library Research
1:1:0 Fall, Spring, Summer
Introduces information gathering strategies and processes. Teaches discovery of books, articles, and other information sources. Emphasizes critical evaluation and ethical use of information. Prepares students for in-depth research. May be delivered online.

SLSS 1100 Stress Management
3:3:0 Fall, Spring, Summer
Provides strategies to develop new attitudes for coping with stressful circumstances. Increases a broader perspective and deeper understanding of acute and chronic stress. Develops conflict resolution techniques through improved communication skills. Studies physiological signs of stress and strain. Emphasizes relaxation techniques to increase performance and reduce the effects of stressful situations. Presents how diet affects personal performance and stress reduction. Explores physical fitness and the effects a sound body can have on coping with stress. May be delivered online.

SLSS 1120 Leadership and Civic Engagement
3:3:0 Fall, Spring, Summer
Identifies how student leaders can impact the UVU community and the community which they live. Explores student leadership models in relation to change and discovery community needs in a service-learning environment. Applies student leadership practices and understanding of civic engagement to inform the UVU community of a local, national or world-wide community need(s). Reflects on student leadership, civic engagement, and community. Practices life-long learning and advocacy for community change.

SLSS 1190 Power Reading and Learning Strategies
3:3:0 Fall, Spring, Summer
Is for students with good reading skills who wish to build on their strengths and take charge of their own learning. Introduces what successful college students do and invites students to begin implementing these research-based techniques and methods in their other courses. Focuses on developing a conceptual and strategic framework for effective reading and learning at the college level. Includes attention to creating the conditions for effective learning, comprehension of academic texts, identifying and remembering key information, test preparation and test taking. May be delivered online. Canvas Course Mats $35/Cengage applies.

SLSS 1195 Speed Reading
2:2:0 Fall, Spring
For students with good reading skills who want to increase reading speed and flexibility while maintaining or increasing their level of comprehension. Also teaches methods of speed studying.

SLSS 1200 The 7 Habits of Highly Effective People
3:3:0 Fall, Spring, Summer
Provides the foundation for personal leadership by teaching fundamental principles of character and life-changing paradigms. Examines the personal and organizational components of effectiveness. Focuses on high leverage changes such as time management, communication skills, win/win negotiation, and principle-centered life choices. Prepares students for life-long success. Includes highly interactive class discussions, application exercises, videos, and group work. May be delivered hybrid and/or online. Course fee of $40 applies.

SLSS 120H The 7 Habits of Highly Effective People
3:3:0 Fall, Spring, Summer
Provides the foundation for personal leadership by teaching fundamental principles of character and life-changing paradigms. Examines the personal and organizational components of effectiveness. Focuses on high leverage changes such as time management, communication skills, win/win negotiation, and principle-centered life choices. Prepares students for life-long success. Includes highly interactive class discussions, application exercises, videos, and group work. Engages in more complex personal leadership material and applies the concepts with a more comprehensive approach to meet honors requirements. May be delivered hybrid and/or online.

SLSS 120R Testing Strategies for Educators
1:1:0 Fall, Spring, Summer
Provides prospective Elementary Education Majors an opportunity to acquire the study strategies and test taking skills necessary to pass examinations that allow them to be admitted into the education program and to receive state licensure. May be repeated for a maximum of 3 credits toward graduation.

SLSS 1400 Dimensions of Engaged Learning
1:1:0 Fall, Spring, Summer
Introduces students to theories and best practices related to engaged learning in higher education. Provides opportunities for students to collaborate, share ideas, and participate in common experiences.

SLSS 141R University Forum
1:1:0 Fall, Spring, Summer
Encourages student participation in the academic and intellectual life of UVU through attendance and critical reflection on select academic and scholarly events. Integrates students’ classroom learning with topical events through exposure to scholars and practitioners on a wide range of issues and from a variety of perspectives. May be repeated for a maximum of 6 credits toward graduation. Graded credit/no credit.

SLSS 2100 Major and Career Exploration
3:3:0 Fall, Spring, Summer
For students who are undecided about their major or career goals. Provides students with the opportunity to interact with career professionals; understand how to access internship, career preparation, and placement resources at UVU; and integrates understanding of self with knowledge of majors, careers, and the world of work. Utilizes an appropriate decision making model to identify possible major and career choices. May be delivered online. Course fee of $23 for materials applies.
Course Descriptions

SLSS 2300 Leadership Mentoring II 3:3:0 Fall, Spring
Provides the ongoing and further development of the theoretical base and hands-on training in leadership and mentoring techniques for peer mentors, and also assists them in further exploring and developing their own learning skills and strategies, and methods for mentoring these skills in others. Explores higher cognitive application and analysis of teaching/facilitating learning as a form of leadership.

SLSS 240R Mentoring Leadership Practicum 2:1:10 Fall, Spring, Summer
Provides the theoretical base and hands-on training in leadership and mentoring techniques as well as an understanding of and ability to apply the UVU Student Leadership Core Competencies. Assists student leaders in further developing their own self-awareness, learning skills and strategies, and explores methods for facilitating these in others. Provides an avenue for student leadership program administrators to facilitate goal development, fulfillment and performance among student leaders and the individuals they serve. Emphasizes building relationships with students, teaching life skills and leadership strategies, and guiding students through the college experience. Repeatable for a maximum of 8 credits towards graduation.

SLSS 2500 Leader--Strengths-Based Leader/Coach 3:3:0 Fall, Spring, Summer
Advances the study and practice of personal leadership by focusing on research-based character strengths. Uses strengths-based inquiry and assessment, identifies and examines character strengths as they relate to optimal functioning, well-being, and personal leadership (leadership of self and others). Draws upon the theories of positive leadership, positive paradigms and practices to develop a strengths-based core that they can transfer to diverse situations and a wide array of roles. Course fee of $10 applies.

SLSS 281R Internship 1 to 8:0 to 8:0 Fall, Spring, Summer
* Prerequisite(s): Department Approval
* Corequisite(s): SLSS 2100 recommended
Provides supervised, practical, and professional experience for students exploring a variety of career areas. May be repeated for a maximum of 12 credit hours towards graduation. May be graded credit/no credit.

SLSS 3200 Leader--Teacher and Mentor 3:3:0 Fall, Spring, Summer
Provides concurrent theoretical and engaged learning experiences that invite students to explore the notion of leader as an effective facilitator of learning and as a coach for self and others. Engages a broad range of current academic literature exploring relevant intra- and interpersonal leadership principles and their interactions within micro and macro level settings. Develops adaptable philosophical and practical toolkit to more effectively navigate within and across multiple settings as a mentor, teacher, and coach to self and others.

SLSS 402G Global Professionalization 3:2:0 Fall, Spring, Summer
* Prerequisite(s): University Advanced Standing
Underscores UVU's commitment to valuing global and intercultural opinions, backgrounds, traditions, perspectives, and experiences. Fosters an intercultural learning curriculum and an understanding of and an appreciation for, a variety of cultural perspectives and experiences is an essential element of higher education. Invites learners to move away from the view of "differences as deficiencies" which continues to be prevalent in society. Invites learners to become increasingly aware of the value and strength of diversity and to be more reflective of each person's role within education and society in general. Explores a growing body of literature and experience that implies a demanding personal and professional commitment. Examines deeper understanding that enhances learners' cultural awareness and prepare them for future employment in global and intercultural settings.

SLSS 405G Leader--Global Contributor 3:3:0 Fall, Spring, Summer
* Prerequisite(s): Placement into ENGL 1010 or ENGH 1005 or higher
Examines what the world will look like in 25 years due to the influence of seven global dimensions or the 7 Revolutions (population, resource management, technology, information/knowledge, economic integration, conflict, and governance). Explores various global, political, economic, social, and behavioral systems; and examines underlying causes of those issues within students' lives. Introduces academic skills in research, communication, critical thinking, and personal leadership.

SLSS 4800 Leader Capstone--Lifelong Change Agent 4:4:0 Fall, Spring, Summer
Integrates three central components: experiential learning, service, and leadership. Provides the opportunity to demonstrate knowledge, application, and proficiency of the core Leadership Certificate content areas. Allows students to propose projects in areas related to their academic and/or professional interests or goals. Projects are subject to approval by department faculty.

SLSS 481R Advanced Internship 1 to 12:1 to 12:0 Fall, Spring, Summer
* Prerequisite(s): Department approval and University Advanced Standing
Provides mentorship during professional internships in a variety of career areas. Internships will be focused on the student's major and future career and will require development of industry specific skills and abilities. Provides networking opportunities within the industry. May be Graded Credit/No Credit. May be repeated for a maximum of 12 credits towards graduation.

Sociology (SOC)

SOC 1010 Introduction to Sociology 3:3:0 Fall, Spring, Summer
Studies and compares social groups and institutions and their inter-relationships. Includes culture, socialization, deviance, stratification, race, ethnicity, social change, and collective behavior.

SOC 101H Introduction to Sociology 3:3:0 Spring
Studies and compares social groups and institutions and their inter-relationships. Includes culture, socialization, deviance, stratification, race, ethnicity, social change, and collective behavior.

SOC 1020 Modern Social Problems 3:3:0 Fall, Spring, Summer
Studies and analyzes modern social problems such as crime, delinquency, family dysfunctions and inequality and exploitation of people in contemporary society. Class requires volunteer experience in community agencies.

SOC 107G Multicultural Societies 3:3:0 Fall, Spring, Summer
Examines the benefits and challenges of diversity in the United States. Explores history and life experiences of people from various racial and ethnic groups. Provides a forum for constructive interaction among people of different racial, ethnic, social, economic, and religious backgrounds.

SOC 1200 Sociology of the Family 3:3:0 Fall, Spring, Summer
Discusses the family in the context of society and its seven sociological institutions: family, media, government, economy, technology, education, and religion. Evaluates how changes in these institutions have facilitated many changes in the structure and function of the modern family. Examines traditional, current, and anticipated definitions of the family using core sociological theory and research tools. Evaluates cultural influence on the family. Focuses on strengthening marriages at the levels of dating, mate selection, marriage, newly wedded adjustment, parenting, finance, procreative family maintenance, and elderly family experiences. Emphasizes the application of one's own life and family experiences while maintaining scientific rigor and critical awareness.

SOC 2370 Sociology of Gender 3:3:0 Fall, Spring
* Prerequisite(s): ENGL 1010 or ENGH 1005 with a C+ or higher
Examines sociological perspectives on gender roles globally. Addresses the effect of social construction of gender roles in various cultures around the world. Investigates how roles have changed over time and the consequences of these changes to broader societal norms globally and in the United States.
SOC 275R  
Survey of Current Topics  
1 to 3:1 to 3:0  
On Sufficient Demand  
* Prerequisite(s): (ANTH 101G or PSY 1010 or SOC 1010) and ENGL 1010 or ENGH 1005 with a C+ or higher  

Provides selected topics in Sociology. Approaches subjects from a cross-disciplinary perspective. Requires a project demonstrating competency in the specific topic. May be repeated for nine credits toward graduation.

SOC 320G  
Race and Minority Relations  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): ENGL 2010 with a C+ or higher and University Advanced Standing

Studies ethnic and racial minority groups and the development of formal and informal relationships shared by these groups and the majority group. Explores the roles and origins of these groups and the concepts of prejudice, ethnic inequalities, current minority group movements, cross-cultural issues, economic, political, and educational aspects of majority-minority relations.

SOC 340  
Sociology of Religion  
3:3:0  
* Prerequisite(s): ENGL 2010 with a C+ or higher, SOC 1010, and University Advanced Standing

Examines religion from a sociological perspective. Analyzes religion as a social phenomenon. Discusses religious organizations, religion and politics, and religion and social class.

SOC 3430  
Sociology of Education  
3:3:0  
Fall  
* Prerequisite(s): ENGL 2010 with a C+ or higher, SOC 1010, and University Advanced Standing

For students who desire a better understanding of United States and world education systems. Examines and investigates educational trends and issues such as private vs. public systems; dropout rates; desegregation; student achievement/failure; education policies; race; class; gender issues; the "Hidden Curriculum"; and education reform using Sociological theory and empirical research.

SOC 3460  
Political Sociology  
3:3:0  
Fall  
* Prerequisite(s): ENGL 2010 with a C+ or higher, SOC 1010, and University Advanced Standing

Explores the distribution of political power at the national and international levels from a variety of theoretical perspectives. Pays particular attention to the power wielded by international media conglomerates and the influence of international institutions such as the World Trade Organization, the World Bank, and the International Monetary Fund.

SOC 3501  
Social Psychology  
3:3:0  
* Prerequisite(s): SOC 1010 and University Advanced Standing

Examines individual's thoughts, feelings, and behaviors in social contexts. Analyzes human behaviors from a sociological perspective. Includes the history of sociological social psychology, perspectives and research methods in sociological social psychology, the social psychology of stratification, self and identity, socialization over the life course, social psychology of deviance, mental health and illness, social attitudes, sociology of emotions and relationships, and collective behavior.

SOC 3510  
Sociology of Work and Occupations  
3:3:0  
Spring  
* Prerequisite(s): ENGL 2010 with a minimum C+ grade, SOC 1010, and University Advanced Standing

Examines work and occupations in historical and contemporary contexts. Examines current employment patterns and trends, the nature of labor markets and jobs, the gendered arrangements of paid and unpaid work, the organization and management of work. Explores transformations in occupational settings resulting from changes in economy and labor market. Focuses on the macro level (the effects of advancements in technology, bureaucratization and unionization on the division of labor), the micro-level (job satisfaction and alienation), and on the interface between macro and micro levels (job prestige, rewards, effects of ethnicity, age, and other characteristics).

SOC 3520 (Cross-listed with: ENST 3520)  
Environmental Sociology  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): SOC 1010 and ENGL 2010 with a C+ grade or higher and University Advanced Standing

Explores in detail several different approaches to understanding the social causes of and solutions to environmental degradation. Discusses the development of a wide variety of theory-based critiques of various social institutions (e.g., economic, political, religious) and how these institutions' values can create and perpetuate unsustainable practices.

SOC 3560  
Sociology of Deviance  
3:3:0  
Fall  
* Prerequisite(s): ENGL 2010 with a C+ or higher, SOC 1010, and University Advanced Standing

Examines the strengths and weaknesses of several different definitions of deviance. Explains deviant behavior from a variety of theoretical perspectives and summarizes the existing data on several different forms of deviance, i.e., individual violations of social mores, street level crime, corporate crime, and crimes committed by nation states.

SOC 3690  
Internet and Society  
3:3:0  
Spring  
* Prerequisite(s): (ENGL 1010 or ENGH 1005), SOC 1010, and University Advanced Standing

Traces the history of new media through a sociological approach. Utilizes sociological theories of mass media and new media, (internet, smartphones, social media, etc.) and their impact on identities and institutions. Refers to sociological theories created in the pre-internet era – such as symbolic interactionism – to explain the pervasive presence of new media in society as well as our use of them.

SOC 3700  
Social Inequality  
3:3:0  
Spring, Summer  
* Prerequisite(s): (ENGL 2010 with a C+ or higher), SOC 1010, and University Advanced Standing

Studies social structure, culture, environment (urban/ rural axis), inequality, and poverty in American Society. Examines Spanish Harlem, Detroit, Appalachia, and the Bitterroot Valley of Montana.

SOC 375G  
Sociology of Aging  
3:3:0  
* Prerequisite(s): University Advanced Standing

Examines the social aspects of aging at the personal, group, and larger social levels of society including the social implications of aging, the theories of aging, as well as formal and informal support of medical care, housing, and well-being of elderly persons. Includes the study of the biological processes of aging and its impact on the roles and relationships elderly person experience in the later stages of life. Emphasizes the individual's experience in the context of national and global demographic trends, cultural and ethnic diversities and economic realities across the classes and across political boundaries.

SOC 3800  
Animals and Society  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): ENGL 2010 with a C+ or higher, SOC 1010, and University Advanced Standing

Examines the roles that non-human animals play in human societies. Utilizes sociological approaches to study human-animal relationships and to critically evaluate the ideologies which justify these relationships. Pays particular attention to human relationships in North America to domestic pets, livestock, and wildlife.

SOC 3850  
Rural Life--Global and Local  
3:3:0  
* Prerequisite(s): ENGL 2010 with a C+ or higher, SOC 1010, and University Advanced Standing

Introduces rural life across the globe. Discusses the views of agrarian writers and thinkers. Explores rural values, rural communities, rural race relations, and rural poverty. Evaluates how the rural perspective provides a platform for critique of modern societal transformations in the twentieth and early twenty-first centuries.
Course Descriptions

SOC 4000  
Classical Social Theory  
3:3:0  
Fall, Spring  
* Prerequisite(s): ENGL 2010 with a minimum C+ grade, SOC 1010, and University Advanced Standing  
Examines the contributions of key theorists such as Durkheim, Weber, Marx, DuBois, and Addams to the development of contemporary sociology. Applies key theoretical concepts and frameworks created and used by classical sociologists to current and historical social issues.

SOC 4020  
Survey Research Design  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): ENGL 2010 with a C+ grade or higher, BESC 3010, BESC 3020, and University Advanced Standing  
Teaches methods of conducting survey research. Includes how to construct, validate, and administer surveys; how to conduct interviews; how to report data, and how to interpret findings.

SOC 4100  
Contemporary Social Theory  
3:3:0  
Fall, Spring  
* Prerequisite(s): SOC 1010 and SOC 4000 and (ENGL 2010 with a C+ or higher) and University Advanced Standing  
Examines major contemporary sociological theories which provide the basis for sociological research and the interpretation of social processes. Examines the nature of sociological theory and theory-building to understand the difference and connection between theoretical, methodological and empirical works in sociology. Covers some or all of the following influential theoretical frameworks: structural functionalism; Frankfurt School; exchange and rational choice theories; symbolic interactionism; phenomenology; poststructuralism; postmodernism; feminism; and world systems theories.

SOC 4400  
Social Change  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): ENGL 2010, SOC 1010, and University Advanced Standing  
Analyzes societies and their component parts. Evaluates various endogenous and exogenous forces which bring about social change. Examines historical and contemporary processes of social change and stratification. Explores current social conditions and applicable methods of social change. Offered once every other year.

SOC 475R  
Current Topics in Sociology  
1 to 3:1 to 3:0  
On Sufficient Demand  
* Prerequisite(s): ENGL 2010 with a minimum grade of C+, SOC 1010, and University Advanced Standing  
Presents selected topic in Sociology and will vary each semester. Requires a project demonstration competency in the specific topic. May be repeated 3 times with different topics.

SOC 490R  
Independent Studies  
1 to 3:1 to 3:0  
On Sufficient Demand  
* Prerequisite(s): Instructor approval, department chair approval, and University Advanced Standing; for Behavioral Science Bachelor Degree students only  
For qualified students who wish to undertake a well-defined project or directed study related to an area of special interest. Requires individual initiative and responsibility. Includes limited formal instruction and faculty supervision. Projects may include writing a publishable paper, passing a competency exam, producing an annotated bibliography, oral presentation, or other options as approved by instructor. May be repeated for a maximum of 6 credits.

Social Science (SOSC)  
SOSC 291H  
National Honors Study Topic  
3:3:0  
On Sufficient Demand  
Sponsored and promoted by Phi Theta Kappa, national organization. Designed for an intellectual pursuit of National Honors Study topic. Discussion topic changes annually. Deals with current international issues that impact society and the quality of life. Students research and discuss the topic from several different perspectives and develop a knowledge base from which to formulate their own ideas.

Spanish (SPAN)  
SPAN 1010  
Beginning Spanish I  
4:4:1  
Fall, Spring, Summer  
* Prerequisite(s): Students need equivalent knowledge of SPAN 1020  
Emphasizes listening, speaking, and writing skills along with basic grammar, vocabulary, and verb conjugations, all within the cultural context of modern Hispanic societies. Uses an eclectic method of instruction, emphasizing conversational exchanges. Requires weekly lab. May be delivered hybrid. Lab access fee of $10 applies.

SPAN 1020  
Beginning Spanish II  
4:4:1  
Fall, Spring, Summer  
* Prerequisite(s): Students need equivalent knowledge of SPAN 1010  
Includes the remaining grammar and language concepts, literature, and cultural readings. Uses an eclectic method of instruction, emphasizing conversational exchanges. Conversational lab required. Computer and multimedia lab encouraged. May be delivered hybrid. Lab access fee of $10 applies.

SPAN 115R  
Spanish Conversation I  
1:1:0  
Fall, Spring  
Offers novice Spanish speakers opportunities to enhance their speaking proficiency in the target language by focusing on oral verbal production. Teaches how to improve authentic pronunciation, reduce errors in authenticity of language structure, generate thought in the target language spontaneously as a substitute for translation, and sharpen listening comprehension for natural conversational flow. Contrasts with all other first year courses which must strive to produce mastery of the whole range of language acquisition components, including writing, grammar, etc. Facilitates lowering the affective filter when conversing in the target language by increasing the frequency of speech opportunities and defusing concern for such matters as spelling, etc. Increases mastery of lexical items through increased frequency of oral usage. May be repeated for a maximum of 3 credits toward graduation.

SPAN 1500  
Spanish Travel Study  
3:1:6  
On Sufficient Demand  
Introduces students to a Spanish-speaking foreign country for a minimum of 10 days of intensive language and culture study. Course entails several meetings prior to departure and at least one after the return home to facilitate observation and analysis of data to be gathered on the tour. An organized presentation of that data will be contained in a multimedia project due no later than one month after tour.

SPAN 2010  
Intermediate Spanish I  
4:4:1  
Fall, Spring, Summer  
* Prerequisite(s): Students need equivalent knowledge of SPAN 1020  
Reviews and builds upon the grammar, reading, writing, and conversation skills learned in the first year courses. Introduces readings and discussions on the history, culture, and literature of the Spanish speaking world, maintaining a focus on oral proficiency. Lab access fee of $10 applies.

SPAN 202G  
Intermediate Spanish II  
4:4:0  
Fall, Spring, Summer  
* Prerequisite(s): Students need equivalent knowledge of SPAN 2010  
Emphasizes reading, writing, and conversation skills through studies in literature. Media reading labs are available to help reading comprehension. Requires oral and written response. Lab access fee of $10 applies.

SPAN 203G  
Spanish for Heritage Speakers  
4:4:1  
Fall  
* Prerequisite(s): Must be a heritage Spanish speaker (heritage speakers are individuals who speak their first language, which is not English, at home).  
For heritage speakers of Spanish with little knowledge of grammar and no formal training in the language. Emphasizes and develops the oral skills students already possess as well as the four language skills: listening, speaking, reading, and writing. Meets Global Intercultural requirements.
SPAN 215R
Spanish Conversation II
1:1:0 Fall, Spring
* Prerequisite(s): Students should have equivalent knowledge of SPAN 1020
Offers lower division / novice Spanish speakers opportunities to enhance their speaking proficiency in the target language by focusing on oral verbal production. Teaches how to improve authentic pronunciation, reduce errors in authenticity of language structure, generate thought in the target language spontaneously as a substitute for translation, sharpen listening comprehension, and develop conversational strategies such as circumlocution and managing a conversation with useful expressions for starting a conversation, gaining time to think, helping the other speaker, seeking agreement, etc. Contrasts with all other first year courses which must strive to produce mastery of the whole range of language acquisition components, including writing, grammar, etc. Facilitates lowering the affective filter when conversing in the target language by increasing the frequency of speech opportunities and defusing concern for such matters as spelling, etc. Increases mastery of lexical items through increased frequency of oral usage. May be repeated for a maximum of 3 credits toward graduation.

SPAN 3030
Spanish Conversation and Composition I
3:3:0 Fall
* Prerequisite(s): (SPAN 202G or equivalent) and University Advanced Standing
Explores communicative skills in Spanish. Provides opportunity for students to improve language production through extensive oral and written instruction and study of selected literary and cultural texts. Reviews grammar topics such as verb tenses, use of adjectives, and object pronouns.

SPAN 3040
Spanish Conversation and Composition II
3:3:0 Spring
* Prerequisite(s): (SPAN 202G or equivalent) and University Advanced Standing
Explores communicative skills in Spanish. Provides opportunity for students to improve language production through extensive oral and written instruction and study of selected literary and cultural texts. Reviews grammar topics such as the subjunctive, relative clauses, and future and conditional tenses.

SPAN 3050
Advanced Spanish
3:3:0 Fall, Spring, Summer
* Prerequisite(s): It is recommended that students have passed SPAN 202G, have had one year residency in a Spanish-speaking country, or instructor approval
For non-native Spanish speakers who, as a result of foreign residency or similar exposure to the language, have attained competency in basic Spanish. Overviews the basic grammar of Spanish with special emphasis on major concepts, i.e., mastery of verb forms, object pronouns, preterite vs. imperfect, use of the subjunctive, etc. Lab access fee of $10 applies.

SPAN 3060
Oral Proficiency
1:1:0 Fall, Spring, Summer
* Prerequisite(s): University Advanced Standing
* Prerequisite(s) or Corequisite(s): (SPAN 3030 and SPAN 3040) or SPAN 3050
Designed to help students understand the standards for oral proficiency as defined by the American Council on the Teaching of Foreign Languages (ACTFL) and to improve their oral proficiency skills. Is required of all Spanish and Spanish Education majors, who should achieve minimally the Intermediate High level as per the ACTFL guidelines. Requires Oral Proficiency Interview (OPI).

SPAN 3116
Pop Culture-Film/Media/Entertainment
3:3:0 Fall
* Prerequisite(s): High-school students have to pass the AP Spanish Language or AP Spanish Literature & Culture test with a 3 or higher.
This course is part of the State of Utah Spanish Bridge Program and it will be taught only in high schools and for high school students. Not to be taught on college campus for university students. Explores the role that current film, media, and entertainment play in the Spanish-speaking world. Examines the historical and cultural perspectives presented through these media through a variety of approaches. Taught in Spanish.

SPAN 3117
Breaking Down Walls-Building Identities
3:3:0 Fall
* Prerequisite(s): High school students have to pass the AP Spanish Language or AP Spanish Literature & Culture test with a 3 or higher.
This course is part of the State of Utah Spanish Bridge Program and it will be taught only in high schools and for high school students. Not to be taught on college campus for university students. Explores how critical moments of change in the Spanish-speaking world have shaped the present. Analyzes crucial social and historical events that affected Spain, Latin America, and the Hispanic people in the United States.

SPAN 3118
Literature and Film-Contemporary issues
3:3:0 Fall
* Prerequisite(s): High school students have to pass the AP Spanish Language or AP Spanish Literature & Culture test with a 3 or higher.
This course is part of the State of Utah Spanish Bridge Program and it will be taught only in high schools and for high school students. Not to be taught on college campus for university students. Explores works of literature and film in Spanish to analyze contemporary societal issues. Emphasizes literary analysis and criticism. Develops knowledge of literary history, skills in interpreting literary texts, and deepens understanding of the Spanish language.

SPAN 315R
Advanced Spanish Conversation
1:1:0 Fall, Spring
* Prerequisite(s): (SPAN 202G or instructor approval) and University Advanced Standing
Provides speaking opportunities for upper-division Spanish learners to expand their conversational skills. Promotes authentic Spanish pronunciation and helps students reduce grammatical and structural errors. May be repeated for a maximum of 3 credits toward graduation.

SPAN 3200
Business Spanish
3:3:0 Fall, Spring
* Prerequisite(s): SPAN 3050 and University Advanced Standing
Teaches language structures and terminology specific to Spanish language in the field of Business. Examines the cultural issues present in the interactions with Spanish-speaking clients. Prepares students to work with Spanish-speaking clients in future careers in business, marketing, banking or translation/interpreting. Lab access fee of $10 applies.

SPAN 3220
Pronunciation Phonetics and Phonology
3:3:0 Spring
* Prerequisite(s): SPAN 3050 and University Advanced Standing
Explores comparatively the articulatory system of English and Spanish, not only to help students identify and correct anomalies or inaccuracies in their own speech or the speech of others, but also to strengthen their understanding of the nature of oral speech. Provides extensive laboratory involvement for practice and analysis.

SPAN 3310
Spanish for Healthcare Professionals
3:3:0 Spring
* Prerequisite(s): (SPAN 3030 and SPAN 3040) or SPAN 3050, and University Advanced Standing
Explores comparatively the articulatory system of English and Spanish, not only to help students identify and correct anomalies or inaccuracies in their own speech or the speech of others, but also to strengthen their understanding of the nature of oral speech. Provides extensive laboratory involvement for practice and analysis.

SPAN 3320
Spanish for Mental Health Professionals
3:3:0 Fall
* Prerequisite(s): (SPAN 3030 and SPAN 3040) or SPAN 3050, and University Advanced Standing
Explores comparatively the articulatory system of English and Spanish, not only to help students identify and correct anomalies or inaccuracies in their own speech or the speech of others, but also to strengthen their understanding of the nature of oral speech. Provides extensive laboratory involvement for practice and analysis.

SPAN 3340
Spanish for Tourism and Hospitality Management
3:3:0 Spring Odd Year
* Prerequisite(s): (SPAN 3030 and SPAN 3040) or SPAN 3050 and University Advanced Standing
Teaches language structures and terminology specific to Spanish language in the field of Tourism and Hospitality Management. Examines the cultural issues present in the interactions with Spanish-speaking clients. Prepares students to work with Spanish-speaking clients in future careers in the tourist and hospitality industry.
SPAN 3350
Spanish for Legal Professions
3:3:0 Spring Even Year
* Prerequisite(s): (SPAN 3030 and SPAN 3040) or SPAN 3050 and University Advanced Standing

Teaches language structures and terminology specific to Spanish language in the legal field. Explores political and legal institutions in the Spanish-speaking countries. Examines the cultural issues present in the interactions with Spanish-speaking clients. Prepares students to work with Spanish-speaking clients in future careers in law, administration and government, business, translation and interpreting.

SPAN 351G
Culture and Civilization—Spain
3:3:0 Fall, Spring
* Prerequisite(s): (SPAN 3050 or equivalent) and University Advanced Standing

Explores chronologically the cultural formation and development of Spain. Completers should acquire an understanding of the ethnic development and linguistic history of Spain. Presentations and class instruction conducted entirely in Spanish.

SPAN 352G
Culture and Civilization—Spanish America
3:3:0 Fall, Spring
* Prerequisite(s): (SPAN 3030 and SPAN 3040) or SPAN 3050 and University Advanced Standing

Explores chronologically the cultural formation and development of Spanish America. Completers should acquire an understanding of the ethnic development and linguistic history of Spanish American countries and societies. Presentations and class instruction conducted entirely in Spanish.

SPAN 3610
Spanish Peninsular Literature to 1800
3:3:0 Spring
* Prerequisite(s): ([SPAN 3030 and SPAN 3040] or (SPAN 3050 or equivalent)]) and University Advanced Standing

Introduces chronologically to 1800 representative Spanish authors. Emphasizes literary analysis and criticism. Completers should develop knowledge of literary history, acquire skills in interpreting literary texts, and deepen understanding of the Spanish language. Presentations and class instruction conducted entirely in Spanish.

SPAN 3620
Spanish Peninsular Literature from 1800
3:3:0 Fall
* Prerequisite(s): (SPAN 3030 and SPAN 3040) or SPAN 3050, and University Advanced Standing

Studies and analyzes chronologically from 1800 representative Spanish authors to focus on the relevance of their writings to the student's own life. Emphasizes literary analysis and criticism. Develops knowledge of literary history, skills in interpreting literary texts, and deepens understanding of the Spanish language. Analyzes works of diverse genres such as fiction, poetry, and essay. Provides students with enough exposure to each author to develop a feeling for his or her work.

SPAN 3630
Spanish American Literature to 1880
3:3:0 Spring
* Prerequisite(s): ([SPAN 3030 and SPAN 3040] or SPAN 3050) and University Advanced Standing

Introduces chronologically to 1880 representative Spanish American authors. Emphasizes literary analysis and criticism. Completers should develop knowledge of literary history, acquire skills in interpreting literary texts, and deepen understanding of the Spanish language. Presentations and class instruction conducted entirely in Spanish.

SPAN 3640
Spanish American Literature from 1880
3:3:0 Fall
* Prerequisite(s): ([SPAN 3030 and SPAN 3040] or SPAN 3050) and University Advanced Standing

Introduces chronologically from 1880 representative Spanish American authors. Emphasizes literary analysis and criticism. Completers should develop knowledge of literary history, acquire skills in interpreting literary texts, and deepen understanding of the Spanish language. Presentations and class instruction conducted entirely in Spanish.

SPAN 3690
Spanish and Latin American Cultures through Cinema
3:3:0 Fall Odd Year
* Prerequisite(s): SPAN 3050 OR (SPAN 3030 and SPAN 3040), and University Advanced Standing

Explores contemporary issues in the cultures and societies of Latin America and Spain by analyzing, interpreting and critically reading film and visual texts. Provides opportunities to improve students' proficiency in Spanish through oral and written interaction and production. Conducted entirely in Spanish.

SPAN 380R
Community Engagement in Spanish
1 to 3:1:2 to 6 Spring
* Prerequisite(s): ([SPAN 3030 and SPAN 3040] or SPAN 3050 or instructor approval) and University Advanced Standing

Offers students the opportunity to volunteer in projects involving the local Hispanic community. Addresses the linguistic and cultural aspects of community volunteering. Requires from 2 to 6 hours of volunteering weekly in local schools, clinic, social service agencies, or civic organizations. Repeatable for a maximum of 6 hours credit toward graduation.

SPAN 4050
Topics in Grammar Usage and Style
3:3:1 Fall, Spring, Summer
* Prerequisite(s): ([SPAN 3030 and SPAN 3040] or SPAN 3050) with a grade of C or higher and University Advanced Standing

Reviews Spanish grammar focusing on problem areas. Explores grammar as deployed in different genres. Emphasizes writing in different styles. Lab access fee of $10 applies.

SPAN 4100
Teaching Spanish Grammar
3:3:0 Spring
* Prerequisite(s): Admission to a Secondary Education teacher licensure program or departmental approval; ([SPAN 3030 and SPAN 3040] or SPAN 3050) and University Advanced Standing
* Corequisite(s): LANG 4200 recommended

Enables prospective Spanish educators to acquire the strategies, methodology and techniques of how to present deductive and inductive principles of Spanish grammar. Discusses basic theory, principles and tools of Spanish linguistic issues. Includes extensive principle development and microteaching used as an assessment tool.

SPAN 4110
Introduction to Translation and Interpreting
3:3:0 Fall, Spring
* Prerequisite(s): ([SPAN 3030 and SPAN 3040] or SPAN 3050) and it is highly recommended to take previously 6 credits from the Spanish for the Profession courses (Medical Spanish, Business Spanish, Legal Spanish, Spanish for Psychology, Spanish for Tourism, etc.)

Teaches basic concepts from Translation Studies. Provides practice on translation and interpretation between the pair of languages English and Spanish. Describes professional opportunities in the translation and interpretation field. Includes class discussion, translation practice, analysis of translations, oral presentations and a portfolio. Lab access fee of $10 applies.

SPAN 4120
Advanced Translation English and Spanish
3:3:0 Spring
* Prerequisite(s): SPAN 4110 and University Advanced Standing

Provides opportunities for Spanish/English translation of texts in different fields (health, law, business, science, etc.). Examines the characteristics and terminology used in specialized texts. Introduces key concepts in the different areas of professional expertise and the differences they present in Spanish speaking countries compared to English speaking countries. Identifies job opportunities as a bilingual professional. Includes class discussion, translation practice, analysis of translations, oral presentations and a portfolio.

SPAN 412R
Spanish for the Professions
3:3:0 On Sufficient Demand
* Prerequisite(s): (SPAN 3050 or departmental approval) and University Advanced Standing

Offers Medical Spanish, Legal Spanish, or Spanish for Tourism according to student demand. Focuses on the practical needs of students who seek careers in the applicable areas. Addresses the specialized vocabulary and communicative ability necessary for a professional in a bilingual English-Spanish or monolingual Spanish environment. Introduces interpretation in professional situations. May be repeated for a maximum of 6 credits toward graduation with different topics.
SPAN 4130
English Spanish Interpreting
3:3:0  Fall
* Prerequisite(s): SPAN 4110 and University Advanced Standing

Teaches skills for interpreting in Spanish and English with an emphasis on the mode of liaison or bilateral interpreting. Introduces key concepts on language interpretation and the profession of interpreter. Teaches basic skills for interpreting like discourse analysis and oratory skills. Teaches general interpreting strategies like synthesis and anticipation, and specific strategies for liaison or bilateral interpreting. It emphasizes professional standards and self-monitoring. Includes class discussion, practice, observation and analysis of practice, oral presentations, a student portfolio, reflection papers, and a final paper or project.

SPAN 4200
Advanced Business Spanish
3:3:0  Fall, Spring
* Prerequisite(s): SPAN 3200 and University Advanced Standing

Focuses on Spanish business terminology, documentation, case studies and transactions. Explores grammar in different genres, emphasizing composition in different writing styles. Prepares students to take the Advanced Business Certification test offered by the Chamber of Commerce of Madrid, Spain.

SPAN 4310
Advanced Spanish for Healthcare Professionals
3:3:0  Fall
* Prerequisite(s): SPAN 3310 and University Advanced Standing

Focuses on Spanish business terminology, documentation, case studies and transactions. Explores grammar in different genres, emphasizing composition in different writing styles. Prepares students to take the Advanced Business Certification test offered by the Chamber of Commerce of Madrid, Spain.

SPAN 4340
Spanish Linguistics
3:3:0  Spring
* Prerequisite(s): [SPAN 3030 and SPAN 3040] or SPAN 3050 and University Advanced Standing

Provides a comprehensive introduction and overview of the different areas of Spanish Linguistics. Designed for students with a focus in Pedagogy, Business Spanish, Translation, Spanish for the Professions or Literature and Culture. Focuses on the core concepts of the various sub-fields of linguistics applied to Spanish: Phonetics and Phonology, Morphology, Syntax, Semantics, Sociolinguistics, the History of the Language, Dialectology and Pragmatics.

SPAN 4500
Advanced Research and Academic Writing in Spanish
3:3:0  Fall, Spring
* Prerequisite(s): SPAN 4050 with a grade of C or higher and University Advanced Standing

Addresses academic research and scholarly writing in the Spanish major. Emphasizes advanced research techniques, textual analysis, style, and argumentation. Prepares students for senior thesis and graduate research. Lab access fee of $10 applies.

SPAN 460R
Topics in Hispanic Literature
3:3:0  Fall Odd Year
* Prerequisite(s): (SPAN 3610 or SPAN 3620 or SPAN 3630 or SPAN 3640) and University Advanced Standing

Addresses key texts representative of the development of genres, themes, or individual authors' works. Engages students in critical analysis and discourse. Possible topics may include Medieval Spanish Literature, the "Generacion del 98," the works of Jorge Luis Borges, or the recent Spanish American novel. May be repeated for a maximum of six credits toward graduation with different topics.

SPAN 4660
Contemporary Spanish American Literature
3:3:0  On Sufficient Demand
* Prerequisite(s): (SPAN 3610 or SPAN 3620 or SPAN 3630 or SPAN 3640) and University Advanced Standing

Introduces the major works of Spanish American writers in the latter part of the 20th and early 21st centuries. Involves close reading and textual analysis through class discussion, written projects, examinations, and oral presentations. Conducted entirely in Spanish.

SPAN 484R
Special Topics in Hispanic Studies
1 to 3:1 to 3:1  Fall Even Year
* Prerequisite(s): (SPAN 3050 or departmental approval) and University Advanced Standing

Presents selected topics in Hispanic Studies. Reflects the interdisciplinary nature of the Hispanic Studies field. May be repeated for a maximum of 6 credits toward graduation with different topics.

SPAN 4900
Capstone Seminar
3:3:0  Fall, Spring, Summer
* Prerequisite(s): Spanish 4500 and 18 credits of upper-division Spanish courses (or instructor approval) and University Advanced Standing

Engages students in independent, directed research and writing. Encourages further exploration of topics covered during courses in the major program. Requires use of advanced research methods and peer review of others' work. Includes public oral exposition of research findings.

Statistics (STAT)

STAT 1040
Introduction to Statistics
3:3:0  Fall, Spring, Summer
* Prerequisite(s): One of the following: MAT 1000 or MAT 1010 with a grade of C or better within the past two years; an ACT mathematics score of 23 (assuming the test has been taken within the last two years); appropriate placement by the Accuplacer test score

A quantitative literacy course with a statistical theme. Includes descriptive statistics, sampling, and inferential methods. Emphasizes problem solving and critical thinking. Canvas Course Mat $72/Macmillan applies.

STAT 1045
Introduction to Statistics with Algebra
5:5:0  Fall, Spring, Summer
* Prerequisite(s): One of the following: MAT 1000 or MAT 1010 with a grade of C or better within the past two years; an ACT mathematics score of 23 (assuming the test has been taken within the last two years); appropriate placement by the Accuplacer test score

A quantitative literacy course with a statistical theme. Includes descriptive statistics, sampling, and inferential methods. Emphasizes problem solving and critical thinking. Canvas Course Mat $72/Macmillan applies.

STAT 2040
Quantitative Thinking
4:4:0  Fall, Spring, Summer
* Prerequisite(s): Within the past two years: MATH 1050 or MATH 1055 with a grade of C or higher or appropriate math placement test score

A quantitative literacy course with a statistical theme. Includes summarizing data, measures of central location, measures of variation, probability, mathematical expectation, probability distributions, sampling and sampling distributions, estimation, hypothesis testing, analysis of variance, regression analysis, and correlation.

STAT 2050
Introduction to Statistical Methods
4:4:0  Fall, Spring
* Prerequisite(s): (MATH 1050 or MATH 1055 with a grade of C or higher within the past two years) or a placement by the appropriate placement test (taken within the past two years)

Introductory statistics course for statistics majors. Applies discrete and continuous probability distributions to real data sets. Teaches confidence intervals and hypothesis testing for both one and two sample problems. Covers introductory topics in experimental design, linear regression, nonparametric statistics, and categorical data analysis.

STAT 2060
Introduction to Statistical Computing
1:0:3  Spring
* Prerequisite(s) or Corequisite(s): STAT 2040 or STAT 2050 with a grade of C or higher

Familiarizes students with the SAS statistical software package. Teaches how to organize, input data, and be able to use reference books to figure out the appropriate way to run the analysis needed using SAS.
Course Descriptions

STAT 3040  Probability and Statistics for Engineering and the Sciences  
3:3:0  Fall  
* Prerequisite(s): (STAT 2040 or STAT 2050 and MATH 2210 each with a grade of C or higher) and University Advanced Standing  

Introduces mathematical statistics for scientists and engineers. Includes counting techniques, random variables, expected values, joint and marginal distributions, point estimation, hypothesis testing, analysis of variance, and regression.

STAT 4000  Applied Regression and Time Series  
3:3:0  Spring  
* Prerequisite(s): STAT 2040 or STAT 2050 with a grade of C or higher and University Advanced Standing  

Provides students in non-mathematical disciplines the ability to answer typical research questions for their senior projects or graduate-level research. Includes linear regression, transformations, variable selection techniques, logistic regression, indicator variables, multiconjecture, and ARIMA time series. Satisfies the VEE statistics requirement for the Society of Actuaries. Introduces SAS software as a tool for statistical analysis.

STAT 4100  Design of Experiment  
3:3:0  Spring  
* Prerequisite(s): STAT 2040 or STAT 2050 with a grade of C or higher and University Advanced Standing  

Introduces the design and analysis of randomized comparative experiments. Includes single factor ANOVAs, randomized block designs, Latin squares, factorial designs, and nested and split plot designs. Covers mixed models including random effects and computation of expected mean squares to form appropriate F-ratios. Uses SAS statistical program software to perform statistical analysis.

STAT 4200  Survey Sampling  
3:3:0  Fall Odd Year  
* Prerequisite(s): STAT 2040 or STAT 2050 with a grade of C or higher and University Advanced Standing  

Introduces survey sampling including simple random sampling, stratified random sampling, systematic and cluster sampling. Discusses ratio and difference estimators, weighting for non-responses, eliminating sources of bias and designing the questionnaire.

STAT 4300  Stochastic Processes  
3:3:0  Spring Odd Year  
* Prerequisite(s): STAT 3040 or STAT 4710 with a grade of C or higher and University Advanced Standing  

Teaches how to perform statistical inference on Markov chains, including classifying states, computing mean and variance of recurrence times, and investigating long-run limiting behavior to model physical systems using the Poisson process. Teaches how to calculate and analyze queuing characteristics of each of the popular queuing models.

STAT 4400  Multivariate Analysis  
3:3:0  Spring  
* Prerequisite(s): MATH 2270, STAT 4710, with C or higher, and University Advanced Standing  

Introduces multivariate data analysis. Performs inference on data arising from multivariate normal distribution including MANOVA, principal component analysis, factor analysis, canonical correlation analysis, discriminant analysis and cluster analysis. Uses Statistical software R or SAS for data analysis on all the topics covered.

STAT 4500  Nonparametric Statistics  
3:3:0  Fall Even Year  
* Prerequisite(s): STAT 2040 or STAT 2050 with a grade of C or higher and University Advanced Standing  

Introduces nonparametric statistical procedures to apply in situations when parametric statistics (usually based on normality) are not appropriate. Covers types of nonparametric analyses that includes one and two sample hypothesis tests, goodness-of-fit tests, contingency tables, block designs, and regression analysis.

STAT 4600  Statistical Process Control  
3:3:0  Fall Even Year  
* Prerequisite(s): STAT 2040 or STAT 2050 with a grade of C or higher and University Advanced Standing  

Presents the theory and methods of quality monitoring including process capability, control charts, acceptance sampling, quality engineering, and quality design.

STAT 4710  Mathematical Statistics-Probability and Statistics  
3:3:0  Fall  
* Prerequisite(s): STAT 2040 or STAT 2050 with a grade of C or higher and University Advanced Standing  

* Prerequisite(s) or Corequisite(s): MATH 2210 or MATH 221H  

Introduces mathematical statistics including random variables, set theory, transformations, expectation, joint and marginal distributions, moment generating functions, and order statistics.

STAT 4720  Mathematical Statistics: Statistical Inference  
3:3:0  Spring  
* Prerequisite(s): STAT 4710 with a grade of C or higher and University Advanced Standing  

Is a continuation of STAT 4710. Includes estimation, sufficiency, completeness, hypothesis testing, statistical inference with the normal distribution, and Bayesian statistics.

STAT 6010  Theory of Statistics I  
3:3:0  On Sufficient Demand  
* Prerequisite(s): Mathematics Endorsement 4, or instructor approval  

Teaches topics including, but not limited to, probability theory, random variables, functions of random variables, probability distributions and their characteristics, transformations of random variables, Pearson's correlation coefficient, and bivariate normal distribution and regression.

STAT 6020  Theory of Statistics II  
3:3:0  Fall  
* Prerequisite(s): STAT 6010 with C or better; Licensed Secondary Teacher Mathematics Endorsement Level 4  

State of Utah and/or permission of instructor  

Emphasizes theoretical statistical inference. Includes, but is not limited to, concept sufficiency, theory of estimation, testing of statistical hypothesis, Neyman-Pearson lemma, Bayesian inference, sequential testing, and large sample theory for inference.

Substance Use Disorder Counseling (SUDC)  

SUDC 3430  Psychopharmacology for the Substance Use Disorder Counseling Field  
3:3:0  
* Prerequisite(s): Admission to the UVU SUDC program and University Advanced Standing  

Addresses basic principles of nervous system function with emphasis on communication between nerve cells. Focuses on therapeutic drugs as well as drugs of abuse to include mechanisms of action and behavioral effects. Includes content on dynamics of addiction.

SUDC 3470  Dynamics of Addiction  
3:3:0  
* Prerequisite(s): Admission to the UVU SUDC program and University Advanced Standing  

Explores processes contributing to development and maintenance of addiction. Addresses internal (genetics, motivation) and external (family dynamics, peer pressure) contributors. Includes issues related to drug policy, costs of addiction, and prevention/treatment of drug addiction.

SUDC 4300  Introduction to Substance Use Disorder Counseling  
3:3:0  
* Prerequisite(s): Admission to the UVU SUDC program and University Advanced Standing  

Surveys concepts and practices of major therapeutic systems, with a focus on substance use disorder counseling. Introduces students to the major psychotherapeutic models of both individual and group therapy. Addresses basic counseling issues including ethics and professionalism. Develops skills in relationship development, interviewing, initial assessment and intake procedures.
SUDC 4400
Advanced Substance Use Disorder Counseling
3:3:0
* Prerequisite(s): Admission to the UVU SUDC Program, completion of SUDC 4300 with a C- grade or higher, and University Advanced Standing

Expands concepts and practices of major therapeutic systems, with a focus on advanced substance use disorder counseling. Continues coverage of major psychosocial therapeutic models of both individual and group therapy. Elaborates on basic counseling issues including ethics and professionalism. Continues to develop skills in relationship development, interviewing, initial assessment, and intake procedures.

SUDC 4710
Introduction to Professional Development
2:2:0
* Prerequisite(s): Admission to the UVU SUDC program and University Advanced Standing

Defines the scope of practice and legal and ethical obligations of substance abuse counselors. Examines the knowledge, skills, attitudes, legal obligations, and limitations of practice of professional substance abuse counselors. Introduces the 12 core functions.

SUDC 4720
Advanced Professional Development
3:3:0
On Sufficient Demand
* Prerequisite(s): Admission to the UVU SUDC program, completion of SUDC 4710 with a C- grade or higher, and University Advanced Standing

Expands on professional issues in Substance Use Disorder Counseling. Focuses on the 12 core functions of substance abuse, ethics, theories of substance abuse, and theory and practice of individual and group counseling.

SUDC 481R
Internship
1 to 8:1 to 8:0
* Prerequisite(s): Admission to the UVU SUDC program, completion of SUDC 4710 with a C- grade or higher, instructor approval, and University Advanced Standing

Provides practical and research experience in the substance use disorder counseling field with a focus on the 12 core functions of substance use disorder counseling. Supervised by agency representative. Internships must be approved by the UVU SUDC program and written contracts must be signed. Requires students pursuing the SUDC license to complete a minimum of 200 hours of field experience. Requires students pursuing the ASUDC license to complete a minimum of 350 hours of field experience. May be repeated for a maximum of 8 hours toward graduation.

Land Surveying (SURV)

SURV 1020
Introduction to Surveying and Mapping
1:1:0
Fall
Provides an orientation to the field of Surveying and Mapping including Boundary Surveying, Geodesy, Forensic Surveying, Construction Surveying, Geographic Information Systems (GIS), and other types of surveys. Involves presentations by community/industry professionals encompassing the surveying and mapping occupations. Teaches college success principles and practices for the Surveying and Mapping program. Lab access fee of $45 for computers applies.

SURV 1030
Fundamentals of Geodesy and Control Surveys
3:3:0
Spring
Explores the science of geodesy or the size and shape of the earth. Involves Global Positioning Systems theory for computing a position on the earth using three-dimensional coordinate systems, reference coordinate systems, state plane coordinates, transformations, geodetic datums, orthometric heights and leveling. Introduces basic properties and characteristics of the most common map projections. Explains principles and theories used to establish control surveys and survey networks based on geodesy. Introduces traverse, triangulation, and elevation adjustment computations along with random and systemic errors in measurement. Offers field application assignments of typical survey control networks using GPS and Total Stations to collect GPS data. Includes post processing coordinate transformation, creation, and report generation using the NGS OPUS system. Requires verifiable demonstration of field skills and techniques. Lab access fee of $45 for computers applies.

SURV 1220
Remote Sensing and Photogrammetry
3:3:0
Spring
* Prerequisite(s): MAT 1010 or appropriate math placement score


SURV 1340
Fundamentals of Boundary Law
3:3:0
Spring
Explains the fundamental responsibilities of a land surveyor in recognizing, locating and creating land boundaries, including sequential and simultaneous conveyances, easements and reversions, riparian and littoral rights. Presents basic rules of evidence. Provides exposure to principles and procedures used to establish new boundaries and locate existing boundaries.

SURV 2010
Land History of America
3:3:0
Fall
Discusses how, what, and why certain countries, events, and individuals have significantly impacted the history of the lands of America. Describes how the contributions of the various inventions, instruments, individuals, conditions, and events impacted the lands of America. Identifies how current land conditions, policies, and laws in the State of Utah have been impacted by Utah land history. Lab access fee of $45 for computers applies.

SURV 2030
Geodesy
3:3:0
Fall
* Prerequisite(s): EGDT 2400, MATH 1060 or EGDT 1600 and 1610 or appropriate math placement score

Examines the science of geodesy. Includes size and shape of the earth, spherical and ellipsoidal geometry, the celestial sphere, and astronomical trigonometry. Involves Global Positioning Systems theory for calculating position on the earth using three-dimensional coordinate systems, reference coordinate systems, state plane coordinates, transformations, spheroid, ellipsoid, geodetic datums, celestial sphere, orthometric heights and leveling. Covers basic properties and characteristics of the most common map projections with emphasis on the projection used in State Plane Coordinates such as Lambert Conformal. Universal Transverse Mercator (UTM). Examines the student to survey applications of practical astronomy including time systems, astronomical azimuth, and Solar/Polaris observations and calculations. Lab access fee of $45 for computers applies.

SURV 2100
Mapping From Field to Finish
3:3:0
Fall
* Prerequisite(s): EGDT 1400, EGDT 1040, GIS 2640

Teaches how to identify, operate, and maintain common instrumentation used to collect field data including GPS, Total Stations, and Drones. Integrates survey field data, Geographic Information Systems (GIS) data, and Computer Aided Drafting (CAD) data to develop static and dynamic maps and plans often used by public and private entities. Demonstrates best practice field and office procedures and techniques commonly used by federal, state, and local governments and private industry. Explains potential field safety considerations, problems, and issues, as well as the development of a safety plan. Includes written and oral presentations. Lab access fee of $45 for computers applies.

SURV 2310
Surveying US Public Lands
3:3:0
Fall
* Prerequisite(s): EGDT 1400, MATH 1060 or EGDT 1600 and 1610 or appropriate math placement score

Studies U.S. Public Land Survey System (PLSS) as described in the current official Department of the Interior-Bureau of Land Management (BLM) Manual of Instructions for Surveying Public Lands with emphasis on federal, state, and other applicable laws, evidence, reserves, and subdivision of sections. Covers a detailed study of general and special instructions, irregularities in subdivisions, lost and obliterated corners, single and double proportion methods, monumentation, riparian boundary laws and rights, hiatuses, mineral surveys, and official survey documents. Introduces Spanish and Mexican land grants, as well as state and national boundaries. Lab access fee of $45 for computers applies.
SURV 2320 
Property Descriptions and Public Land Records
3:3:0 Fall
* Prerequisite(s): (ENGL 1010 or ENGH 1005) and EGDT 1400
Involves analysis, interpretation, and writing of legal descriptions with proper form, controlling elements, metes-and-bounds, sectionized land descriptions, easements, and rights-of-way. Discusses different types of descriptions, junior-senior rights in descriptions, latent & patent ambiguities, basis of bearing and interpretation, easements, and reversions. Applies practical exercises and case studies. Studies the responsibilities of the professional land surveyor regarding due diligence in searching public land records and performing applicable legal research. Examines public records and recording laws. Emphasizes title search to patent and includes zoning laws relating to land. Involves tour(s) of local record systems and/or public offices.

SURV 3010 
Measurement Analysis and Adjustments
4:4:0 Spring
* Prerequisite(s): EGDT 2400, MATH 1060 or (EGDT 1600 and 1610) or appropriate math placement score; and University Advanced Standing
Examines observation theory, and observational error analysis. Discusses the theory of measurement errors, principles of error propagation, variance and covariance, and the theory of the least squares method. Studies variances and co-variances of observed, derived, and adjusted quantities; regression analysis, and polynomial curve fitting. Involves systems of linear equations, linearization, and iteration of nonlinear equations; adjustment validation using hypothesis testing; modeling of surveying problems using different techniques of least squares and also presents several methods used to fit survey data to mathematical and survey models. Software fee of $18 applies. Lab access fee of $45 for computers applies.

SURV 3030 
Land Development Planning, Platting, and Mapping
3:3:0 Spring
* Prerequisite(s): EGDT 1040, EGDT 1400, matriculation into the Geomatics BS degree, and University Advanced Standing
Discusses land use planning techniques for residential and commercial developments. Subdivisions, industrial parks, and commercial complexes are studied along with the associated governmental regulations, codes, rules, and approval processes and procedures. Requires a mock public presentation on course projects. Uses current surveying/engineering software to develop and plot drawings including; subdivision plats, records of survey, ALTA surveys, topographic site surveys, and other maps. Software fee of $18 applies. Lab access fee of $45 for computers applies.

SURV 3210 
Advanced Photogrammetry
3:3:0 Fall
* Prerequisite(s): EGDT 1400, MATH 1060, or (EGDT 1600 and 1610), or appropriate math placement score; and University Advanced Standing
Examines principles of photogrammetry as applied to surveying and mapping. Analyzes geometry of vertical and aerial photographs, stereoscopic parallax, geometry of tilted photographs, and stereoplottor mapping. Discusses close-range photographic analysis, planimetric and topographic maps, flight planning, digital photogrammetry, aerial cameras and camera calibration. Involves the theory and techniques of photo orientation, digital imagery, and aerial triangulation. Software fee of $18 applies. Lab access fee of $45 for computers applies.

SURV 3220 
Control Surveys
3:3:0 Fall
* Prerequisite(s): SURV 2030, SURV 3010, matriculation into the Geomatics BS degree, and University Advanced Standing
Applies principles and theories presented in prerequisite courses and moves the student to an advanced applications level. Studies the establishment of control surveys and survey networks. Reviews compass rule adjustment computation, matrix methods and least squares adjustment methods, random and systematic errors in measuring, and error propagation. Offers field applications of Remote and GPS surveying systems: static, kinematic and RTK procedures, data collection, post processing coordinate transformation, creation, and report generation. Teaches practical applications of network adjustment, control surveys, triangulation, and precision traverses with precise elevation control. Requires demonstration of field skills and techniques. Software fee of $18 applies. Lab access fee of $45 for computers applies.

SURV 3230 
Construction and Route Surveys
3:3:0 Spring
* Prerequisite(s): EGDT 2400, MATH 1060 or EGDT 1600 and 1610, or appropriate math placement score; and University Advanced Standing
Applies principles and theories presented in prerequisite courses. Develops computations, standard practices and practical applications for common construction and route surveys. Includes survey staking of pipes, curbs, streets, parking lots, buildings, and other typical land development and infrastructure project elements. Develops volume and area calculations. Requires computer derived solutions and applications from plans and specifications using modern data collection and coordinate geometry (COGO) computer software. Lab access fee of $45 for computers applies. Software fee of $18 applies.

SURV 3340 
Boundary Law
3:3:0 Spring
* Prerequisite(s): Matriculation into the Geomatics BS degree required and University Advanced Standing
Studies the responsibilities of the land boundary surveyor in protecting rights, title, and interest of the land; riparian and littoral rights, bona-fide rights, boundary easements and reversions, conveyances; sequential and simultaneous. Presents principles and rules of evidence. Includes monuments and monumentation, boundary locations, and procedures used to establish new boundaries and locate existing boundaries. Lab access fee of $45 for computers applies.

SURV 3400 
Surveying Applications and Field Techniques III
3:2:2 Fall
* Prerequisite(s): EGDT 2400, GIS 3600, and University Advanced Standing
Focuses on state of the art surveying applications and field techniques often employed by surveyors for various field and office tasks some of which may include horizontal and vertical networks and traverses, route surveys, and topographic/site surveys, and machine control methods. Teaches the construction, care, maintenance, calibration, effective setup and observation methods used for the latest in surveying instrumentation often including: global positioning systems (GPS), total robotic stations, 3D laser scanners, automatic levels, modern data collectors, coordinate geometry (COGO), computer-aided drafting (CAD) software, Drone surveying, and other geospatial surveying systems and instruments. Lab access fee of $45 for computers applies. Software fee of $25 applies.

SURV 4340 
Surveying Legal Principles
3:3:0 Spring
* Prerequisite(s): SURV 2320, SURV 3340, ENGL 2310, matriculation into the Geomatics BS degree, and University Advanced Standing
Focuses on researching the body of law as it applies to the practice of surveying. Covers common law associated with the Statute of Frauds, Constructive Notice, and Surveyor/Attorney interaction and roles. Discusses principles and concepts of dispute and conflict resolution as well as the specific role of the expert witness. Reviews the fact finder role of the surveyor in research/investigation techniques and sources while focusing on facts of a case and the applicable laws. Completes will work on case studies and prepare a final legal research paper. Involves tour(s) of a law library.
SURV 4400 Surveying Applications and Field Techniques IV 3:2:3 On Sufficient Demand

* Prerequisite(s): SURV 3400 and University Advanced Standing
Focuses on projects both lab/office and field work. Uses a mentor based teaching model to engage in several projects from inception to final deliverables. Requires students to make project decisions individually and as a team regarding each aspect of the various assigned projects. Requires each team member to demonstrate their own ability to perform all tasks required to complete the assigned projects within a given time frame resulting in deliverables that meet a pre-professional level of competency. Lab access fee of $45 for computers applies. Software fee of $25 applies.

SURV 4500 Professional Services Practicum 3:3:0 Spring

* Prerequisite(s): University Advanced Standing
Examines the planning, organizing, and application of field and office practices, and develops a practical business plan including policies and procedures associated with a typical professional services firm providing civil engineering, architectural, and surveying services to the public and private sector. Reviews and applies a myriad management principles and functions including: operations, financial, marketing, human resource, project, and risk management. Exposes the student to the functions of typical financial software. Explores business concepts specific to professional services; pricing, fees, bidding, proposals, contracts, and professional liabilities. Involves developing a business plan for a professional services firm. Lab access fee of $45 for computers applies.

SURV 451R Surveying and Mapping Lecture Series .5 to 2.5:2 to 2:0 Fall, Spring

* Prerequisite(s): University Advanced Standing
Consists of lectures presented by guest speakers or faculty on various topics in Surveying and Mapping including but not limited to: land surveying, mapping, remote sensing, geodesy, legal issues, photogrammetry, and various new and emerging technologies. May be repeated for a maximum of 2 credits toward graduation.

SURV 455G Global Professional Ethics and Liabilities 3:3:0 Fall

* Prerequisite(s): PHIL 2050 and University Advanced Standing
Teaches the code of ethics adopted by the various professional services state and national organizations and/or associations. Explains meaning and attributes of professionalism along with the ethical, moral, and social responsibilities of professional engineers, architects, and surveyors. Integrates laws for practicing as a professional service with professional ethics as well as the roles of multi-culturalism and globalization. Includes model standards (international, national, and state), professional liability cases, safety, risks, professional client relationships, bribery, global engagement, contracts, and intellectual property. Involves lecture, readings, case studies, and other media.

SURV 481R Surveying and Mapping Internship 1 to 8:1 to 8:0 On Sufficient Demand

* Prerequisite(s): Junior or Senior Standing, departmental written approval, matriculation into the Surveying and Mapping BS degree, and University Advanced Standing
Provides opportunities to apply classroom theory and principles to actual on-the-job work experience, on a paid or non-paid basis, in the field of Surveying and Mapping. Emphasizes the establishment of goals, learning objectives, and expected outcomes with their Faculty Sponsor at the beginning of the internship and/or semester. Involves the submittal of a comprehensive written report at the end of the semester consisting of an evaluation of original goals and objectives and reflects on the achieved outcomes gained from the work experience. May be repeated for a maximum of 8 credits toward graduation. May be graded credit/no credit.

SURV 490R Professional Topics in Surveying and Mapping 2 to 4:2 to 4 On Sufficient Demand

* Prerequisite(s): University Advanced Standing
Studies a chosen topic in Surveying and Mapping. May include research, experimentation, analysis, and reporting. May be taken more than once for different topics and for a maximum of 9 credits toward graduation.

SURV 4930 Senior Surveying and Mapping Capstone 4:4:0 Spring

* Prerequisite(s): University Advanced Standing, Senior Standing
Provides an opportunity for a senior Surveying and Mapping student to participate in a significant and current research project which may advance the field of Surveying and/or Mapping. Includes independent study and laboratory/field work as necessary and must be approved and supervised by assigned faculty and technical mentors. Culminates in the preparation and presentation of a written paper describing the results of the research and/or completed project to project stakeholders, interested students, faculty, administration, the professional community, or the broader general audience. Lab access fee of $45 for computers applies. Software fee of $25 applies.

Social Work (SW)

SW 1010 Introduction to Social Work 3:3:0 Fall, Spring, Summer
Introduces social work theory and practice. Examines the relationship between policy and practice in the context of nine major fields of social work. Considers challenges faced by today's practitioners. Explores current career opportunities in the field.

SW 2100 Human Behavior and the Social Environment I 3:3:0 Fall, Spring, Summer

* Prerequisite(s): Admission into the BSW program
Presents major theoretical concepts about human development and environmental factors influencing development from the social and behavioral sciences and their applications to micro, mezzo, and macro social work practice. Focuses on the first half of the life cycle, the prenatal period through adolescence. The first in a two-course human behavior and the social environment sequence. May be delivered hybrid and/or online.

SW 275R Survey of Current Topics 3:3:0 On Sufficient Demand

* Prerequisite(s): (ANTH 101G or PSY 1010 or SOC 1010 or SW 1010) and ENGL 1010 or ENGL 1005
Presents selected topic in Social Work and will vary each semester. Approaches subjects from a cross-disciplinary perspective. Requires a project demonstrating competency in the specific topic. May be repeated for nine credits toward graduation.

SW 3000 (Cross-listed with: FAMS 3000) Social Work Practice I 3:3:0 Fall, Spring, Summer

* Prerequisite(s): Admission to the BSW program or declared major in Family Science and University Advanced Standing
Introduces the basic knowledge, values, and skills needed for generalist social work practice. Focuses on working with individuals using the planned change process within the strengths perspective. Assists students in understanding the social and environmental conditions that negatively affect clients and empowering clients to take steps to enhance their own well-being. Provides content on the evaluation of social work practice.

SW 3100 Social Work Practice II 3:3:0 On Sufficient Demand

* Prerequisite(s): SW 3000, Admission to the BSW program, and University Advanced Standing
Focuses on generalist social work practice with emphasis on small groups. Uses the planned change process to assist oppressed groups within the values and ethics of the profession. Includes content on evaluation of practice.

SW 3200 Social Work Practice III 3:3:0 On Sufficient Demand

* Prerequisite(s): SW 3000, SW 3100, Admission into the BSW program, and University Advanced Standing
Explores how generalist practice relates to the various levels of practice and how it particularly relates to macro practice. Emphasizes macro issues such as community organization and development, socio-cultural interactions, legislative matters, and other areas related to policy practice. Particular attention will be given to areas of practice that involve disenfranchised groups and how to promote social justice for these groups at the macro level.
SW 3400 Human Behavior and the Social Environment II 3:3:0
* Prerequisite(s): SW 2100, Admission into the BSW program, and University Advanced Standing

Presents major theoretical concepts about human development and environmental factors influencing development from the social and behavioral sciences and their applications to micro, mezzo, and macro social work practice. Focuses on the second half of the lifecycle, young adulthood through older adulthood.

SW 3500 Social Welfare Policies and Services 3:3:0 Fall, Spring
* Prerequisite(s): Admission into the BSW program and University Advanced Standing

Analyzes current social policy within the context of historical and contemporary factors that shape policy. Examines major social forces and institutions as they relate to and determine social policy emphasizing social welfare services in an industrialized society. Evaluates social welfare frameworks in light of the principles of social and economic justice. Identifies effect of social policy on generalist social work practice.

SW 3510 International Social Work 3:3:0 On Sufficient Demand
* Prerequisite(s): ENGL 2010 with a C+ grade or higher, SW 1010, and University Advanced Standing

Investigates ways in which micro and macro skills can be integrated via a social development model to address social welfare issues in international settings. Includes the development of interventions beginning at the community level and moving toward global as well as individual practice. Focuses on the enhancement of practice knowledge and skills in program design, development, implementation and evaluation. Addresses basic resources such as food, shelter, potable water and sanitation, as well as sustainable economic development, inter-ethnic conflict, global indebtedness, ethnocentric organizational development, and empowerment/conscientization as a method of intervening in social challenges.

SW 355G Thanatology--Death and Dying 3:3:0 Fall, Spring
* Prerequisite(s): (PSY 1010 or SW 1010) and (ENGL 2010 with a C+ grade or higher) and University Advanced Standing

Introduces students to the subject of thanatology. Reviews theories and research associated with death and dying. Examines death systems, cultural norms, taboos and rituals. Studies the health care system, public policy, laws, and customs. Addresses death from a developmental perspective. Explores life-threatening illness, suicide, and end-of-life issues. Reviews grief and loss themes. Familiarizes students with vocabulary and explores related human service occupations such as bereavement counseling and hospice care. May be delivered hybrid.

SW 3600 Ethics and Values in Social Work Practice 3:3:0 On Sufficient Demand
* Prerequisite(s): Admission into the BSW program and University Advanced Standing

Acquaints students with the values of the field of social work and the Code of Ethics of the National Association of Social Workers and to help them begin to develop the ability to effectively deal with the ethical issues they will be confronted with in professional practice. Increases students awareness of new and emerging ethical issues and provide tools and methodologies for ethical decision-making. Addresses ethical dilemmas involving conflict between personal values, agency guidelines, professional standards, and cultural differences. Includes discussion of models for ethical decision-making, the NASW Code of Ethics, as well as the codes of ethics of other human services professional organizations.

SW 371G Diversity Issues in Social Work Practice 3:3:0 On Sufficient Demand
* Prerequisite(s): Admission into the BSW program and University Advanced Standing

Increases understanding and appreciation of diverse client populations, the nature of cultural identity, group membership and differential access to resources, and strategies to combat discrimination, oppression and economic deprivation and to promote social and economic justice. Examines socio-identities including: race, ethnicity, religion, gender, social class, sexual orientation, abilities, and age. Includes discussion of oppressive and discriminatory experiences as well as resilience and strengths encountered by different groups. Explores similarities, differences, and controversies between diverse populations in the context of their personal values and professional policy and practice.

SW 3750 Child Abuse Neglect and Domestic Violence 3:3:0 Fall, Spring
* Prerequisite(s): SW 1010 and University Advanced Standing

Reviews definitions of child abuse and neglect and other forms of domestic violence using a multidisciplinary perspective. Explores theories explaining the causes of abuse/neglect and domestic violence. Identifies indicators of abuse/neglect and aids students in making assessments and intervening in situations of abuse/neglect and domestic violence. Educates students in mandatory reporting laws and the workings of the child welfare system in efforts to intervene and prevent abuse/neglect. Addresses current policy issues pertinent to child abuse/neglect and domestic violence and identifies effective methods in which students can advocate for social change within the social and child welfare system.

SW 3760 Post Traumatic Growth: Beyond Survival 3:3:0 Fall, Spring, Summer
* Prerequisite(s): BESC 3010 and 3020 or equivalent, and University Advanced Standing

Examines post-traumatic growth from an ecological perspective and across various at-risk populations. Emphasizes traditional and non-traditional approaches in dealing with physically and psychologically traumatic issues. Explores the characteristics of trauma from a strengths-based perspective and how to best provide services to people that have experienced traumatic events at the micro, mezzo, and macro levels. Considers events within their ecological context. Discusses sensitivity to a variety of circumstances and cultural patterns.

SW 4450 Introduction to Child Welfare I 3:3:0 Fall, Spring, Summer
* Prerequisite(s): SW 1010 and (ENGL 2010 with C+ or higher) and University Advanced Standing

Prepares students to be effective interventionists in family systems where children are at risk of abuse, neglect, or dependency. Examines four-part Child Welfare CORE Competency-based series. Provides students with the basic knowledge, skills, and abilities necessary for successful performance as child welfare workers.

SW 4460 Introduction to Child Welfare II 3:3:0 Fall, Spring, Summer
* Prerequisite(s): Admitted to BS in Social Work, SW 1010, (ENGL 2010 with C+ or higher) and University Advanced Standing

Addresses the basic effects of abuse, neglect, and separation on child development. Focuses on the knowledge and skills required for child welfare workers to provide services related to child placement, including risk assessment, attachment, separation, loss, grief, family intervention, and reunification and relining services. Teaches strategies to reduce trauma and promote effective child placement. Explains the foster-care system, including how to work with foster caregivers.

SW 4500 Crisis Intervention 3:3:0 On Sufficient Demand
* Prerequisite(s): [SW 1010 and (ENGL 2010 with a minimum C+ grade) or instructor approval] and University Advanced Standing

Introduces the student to the philosophy, knowledge, techniques, and skills of crisis intervention. Provides opportunities through projects, written assignments, role playing, and first-hand interaction with professional crisis workers by which the students may deepen their understanding of this demanding method of social work practice. May be delivered hybrid and/or online.
SW 4600
The DSM of Mental Disorders
3:3:0 On Sufficient Demand
* Prerequisite(s): SW 1010, PSY 3400, ENGL 2010 with a C+ grade or higher, and University Advanced Standing

Provides an overview of the Diagnostic and Statistical Manual of mental disorders (DSM) based on clinical diagnosis. Teaches DSM based clinical diagnosis. Teaches DSM diagnoses including diagnostic criteria, prevalence rates, gender and cultural differences in prevalence and symptomatology, disease course, and differential diagnosis. Uses class discussions, videotapes of individuals with different DSM diagnoses, and case scenarios.

SW 4700
Case Management in Social Work Practice
3:3:0 Fall, Spring
* Prerequisite(s): SW 1010 and University Advanced Standing

Provides the conceptual foundation for providing case management services and crisis intervention to individuals in various population groups.

SW 475R
Current Topics in Social Work
3:3:0 On Sufficient Demand
* Prerequisite(s): SW 1010 and ENGL 2010 and University Advanced Standing

Presents selected topic in Social Work and will vary each semester. Requires a project demonstrating competency in the specific topic. May be repeated with different topics for 9 credits toward graduation.

SW 4800
Integrated Seminar I
1:1:0 Fall, Spring, Summer
* Prerequisite(s): SW 3000, admission to the BSW program, and University Advanced Standing
* Corequisite(s): SW 481R

Provides a generalist base for social work practice that involves an on-site, supervised field agency practicum and a weekly seminar. Assists the student to integrate classroom learning with learning that takes place in the on-site field practicum. First of two courses in field practicum sequence. Graded Credit/No Credit.

SW 481R
Field Placement
1 to 8:0:5 to 40 Fall
* Prerequisite(s): Admission to the BSW program and University Advanced Standing
* Corequisite(s): SW 4800 or SW 4850

Provides a generalist base for social work practice that involves an on-site, supervised field agency practicum. Assists the student to integrate classroom learning with learning that takes place in the on-site field practicum. Performs a minimum of 225 hours of supervised social work in a local agency setting. May be repeated for a maximum of 9 credits toward graduation. May be graded credit/no credit. Course fee of $84 applies for practical experience applies.

SW 4850
Integrated Seminar II
1:1:0
* Prerequisite(s): Senior Standing in the BSW program, SW 4800 with B- or higher, and University Advanced Standing
* Corequisite(s): SW 481R

Provides a generalist base for social work practice that involves an on-site, supervised field agency practicum and a weekly seminar. Assists the student to integrate classroom learning with learning that takes place in the on-site field practicum. Provides an integrative classroom experience for students with a clinical interest currently working in related jobs or volunteer experiences in human service agencies or work sites. Second of two courses in the field practicum sequence.

SW 489R
Advanced Research in Social Work
1 to 3:1 to 3:0
* Prerequisite(s): (SW 1010 and BESC 3020 with a C grade or higher); ENGL 2010 with C+ grade or higher; University Advanced Standing; Instructor approval

Expands research experience by either (1) significantly assisting on a faculty member’s research project or (2) carrying out an independent research project of the student’s design under faculty mentorship. Requires individual initiative and responsibility. Includes limited formal instruction. May include literature searches, completion of the IRB application process, materials creation, data collection, data analysis, writing a publishable paper, preparing a poster, preparing an oral presentation, or other options as approved by the instructor. May be repeated for a maximum of 6 credits toward graduation.

SW 490R
Independent Studies
1 to 3:1 to 3:0 On Sufficient Demand
* Prerequisite(s): Instructor approval, department chair approval, and University Advanced Standing; for Behavioral Science Bachelor Degree students only

For qualified students who wish to undertake a well-defined project or directed study related to an area of special interest. Requires individual initiative and responsibility. Includes limited formal instruction and faculty supervision. Projects may include writing a publishable paper, passing a competency exam, producing an annotated bibliography, oral presentation, or other options as approved by the instructor. May be repeated for a maximum of 6 credits.

SW 6000
Social Work Practice I--Individuals
3:3:0
* Prerequisite(s): Admission to the MSW Program

Prepares students for practice by helping them develop the knowledge, values, and skills needed to successfully treat clients. Emphasizes interpersonal and interviewing skills, the generalist planned change process, utilizing a strengths perspective, values and ethics, and cultural competence.

SW 6020
Social Work Practice II-Groups
3:3:0
* Prerequisite(s): SW 6000

Introduces the theory and practice of social work in groups. Prepares students for practice by helping them develop the knowledge, values, and skills needed for generalist social work practice with groups. Utilizes evidence-based practice in developing group leadership skills.

SW 6030
Social Work Practice III-Advanced Practice with Individuals and Families
3:3:0
* Prerequisite(s): SW 6000

Examines clinical approaches most often used with clients. Emphasizes the theoretical basis of treatment modalities and how to apply them in practice.

SW 6050
Social Work Practice IV-Advanced Practice with Organizations and Communities
3:3:0 Fall, Spring, Summer
* Prerequisite(s): SW 6300

Analyzes multiple approaches social workers use to influence groups, organizations, communities, and systems. Examines concepts, theories, and models of macro level practice and skills for addressing complex practice and organizational situations.

SW 6200
Human Behavior and the Social Environment I
3:3:0
* Prerequisite(s): Admission to the MSW Program

Presents biological and social science concepts and how they influence human behavior, particularly regarding social environments. Analyzes human behavior by understanding how people process information, what motivates them, how they respond to stress, and what conditions bring about successful change. Applies this information to properly assess the person, their environment, and how that environment has influenced their actions.

SW 6210
Human Behavior and the Social Environment II
3:3:0
* Prerequisite(s): Admission to the MSW Program

Explores biological and social science concepts and how they influence human behavior, particularly regarding social environments. Investigates varying social environment factors, such as culture, ethnicity, stress, adaptation, and gender. Examines biological, psychological, social, and spiritual theories to develop accuracy in assessments.
Course Descriptions

SW 6300 Social Welfare Policy and Analysis 3:3:0
* Prerequisite(s): Admission to the MSW program
Analyzes current social policy within the context of historical and contemporary factors. Examines major social forces and institutions as they relate to and determine social policy emphasizing social welfare services within current U.S. society. Evaluates social welfare frameworks in light of the principles of social and economic justice and how this impacts individual, group, and community well-being.

SW 6320 Social Work with Latino--Pacific Islanders-- and other Communities of Color 3:3:0
* Prerequisite(s): SW 6000
Evaluates U.S. immigration historical trends and policies and immigration reform challenges, with a major focus on immigrant Latino populations. Teaches culturally competent practice and essential skills in advocacy and policy analysis. Focuses on communities of color.

SW 6400 Social Work Research Methods 3:3:0
* Prerequisite(s): Admission to the MSW Program
Addresses advanced quantitative and qualitative methods to prepare students for carrying out research in agencies. Includes critical analysis of scholarly literature and applying it in clinical practice. Explains the importance of both practice and program evaluation in a clinical setting.

SW 6407 Advanced Social Work Ethics 3:3:0
* Prerequisite(s): Admission to the MSW Program
Provides an overview of the NASW Code of Ethics. Emphasizes the application of the Code to social work practice situations among various client systems and populations. Addresses the relationships between the Code and the client’s basic legal rights.

SW 6490 MSW Advanced Standing Bridge Course 4:4:0
* Prerequisite(s): Acceptance into the MSW Advanced Standing program
Supplements the knowledge, skills, and values foundation developed in participants’ BSW programs. Reviews content learned at the baccalaureate level and material that will be helpful in preparing students for the concentration year of the MSW program. Prepares MSW students to transition from the foundation year to the advanced concentration courses. Addresses topics necessary for advanced MSW level practice and to support effective and ethical micro- and macro-level interventions. Covers key content addressed in SW foundation courses within the BSW program. This course is open to Advanced Standing students only.

SW 6491 MSW Advanced Standing Skills Course 4:4:0
* Prerequisite(s): Acceptance into the MSW Advanced Standing program, SW 6490
Develops students’ applied skills in Social Work practice. Integrates foundational social work approaches to practice, such as empowerment, strengths-based, and collaborative/person-centered skills. Assures that incoming Advanced Standing students have mastered foundational competencies in social-work practice skills with various types of human systems. Prepares MSW students to transition from the foundation year to the advanced concentration courses. Open to Advanced Standing students only.

SW 6500 Addictions 3:3:0
* Prerequisite(s): SW 6000
Teaches how to reduce or eliminate the detrimental impact of substance use disorders at multiple levels, such as families, groups, organizations, and communities. Teaches the knowledge and skills that assist in reducing and eliminating addiction. Enables students to identify, assess, and evaluate those struggling with substance abuse and dependency throughout the life span and how to intervene when necessary.

SW 6510 Clinical Issues in Substance-Related Addictions 3:3:0
* Prerequisite(s): SW 6500
Addresses the advanced assessment and treatment of clients affected by the use and abuse of alcohol and other substances. Examines addictions from a bio-psycho-social perspective. Discusses different models of addictive behavior for assessment and treatment. Covers assessment factors including gender, age, class, race, and cultural factors. Examines the evidence base for particular practice modalities for family, group, and individual treatment. Analyzes treatment needs of different client populations, including youth, dual-diagnosed adults, and family members. Explains self-help and twelve-step programs and the diversified roles of social workers.

SW 6530 Psychopharmacology 3:3:0
* Prerequisite(s): Admission to MSW program
Addresses principles of nervous system function with emphasis on communication between nerve cells. Focuses on therapeutic drugs as well as drugs of abuse to include mechanisms of action and behavioral effects. Teaches content on dynamics of addiction within a pharmacological context.

SW 6610 Spirituality in Social Work 3:3:0
* Prerequisite(s): Admission to MSW program
Addresses a theistic model for social work clinical practice. Examines various religious and spiritual world views and their application to counseling and psychotherapy. Emphasizes the need for increased sensitivity and competence in working with clients for whom faith-based interventions are desired.

SW 6620 Marriage and Family Therapy 3:3:0
* Prerequisite(s): SW 6000
Introduces a skills-based course in the field of marriage and family therapy. Trains prospective clinicians to work with individuals, couples, and families from a systems focus. Reviews the history of family therapy and the predominant models of the field. Emphasizes ethical and cultural issues in the realm of family therapy.

SW 6630 Mental Health Diagnosis 3:3:0
* Prerequisite(s): Admission to MSW program
Explains the major issues in the area of psychopathology and diagnosis of mental disorders from a bio-psycho-social perspective. Covers influences on the incidence, manifestation, and course of the most commonly presented mental disorders and the differential effect of these factors on diverse populations. Examines mental illness through the experience of family members and significant others.

SW 6640 Crisis Intervention 3:3:0
* Prerequisite(s): Admission to MSW program
Introduces the philosophy, knowledge, techniques, and skills of crisis intervention. Provides opportunities through projects, written assignments, role playing, and first-hand interaction with professional crisis workers to deepen understanding of this demanding method of social work practice.

SW 6650 Couples Therapy 3:3:0
* Prerequisite(s): SW 6000
Trains prospective clinicians in working with couples in a therapeutic capacity. Teaches the basic skills, dominant models, and unique challenges of couples therapy. Examines essential skills and techniques in working with dating, cohabiting, premarital, and marital couples. Examines unique situations of therapy such as addictions, affairs, and sexual issues. Addresses issues of diversity in couples therapy.
SW 6660  
Family Violence Across the Lifespan  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): Admission to the MSW program  
Examines interpersonal violence within the context of familial role and across at-risk populations. Emphasizes a variety of family systems and the impact that issues such as divorce, substance abuse, child abuse, and incarceration have on the various units in the family system. Considers issues and builds practice skills related to family support services, child maltreatment, and substitute care.

SW 6670  
Post Traumatic Growth—Practice and Clinical Considerations  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): Admission to the MSW Program  
Examines post-traumatic growth across various at-risk populations. Considers several clinical and therapeutic issues in addition to other practice skills related to supportive services from a variety of theoretical frameworks that promote individual, familial, and community growth. Discusses diagnostic criteria and treatment differences in post-traumatic stress and post-traumatic growth. Explores events within their ecological context and works to build sensitivity to a variety of circumstances and cultural patterns. Emphasizes traditional as well as non-traditional approaches in dealing with physically and psychologically traumatic issues such as cancer, interpersonal violence, divorce, child abuse, etc. Discusses characteristics of trauma from a strengths-based perspective and how to best provide services to people that have experienced traumatic events at the micro, mezzo, and macro levels. May be delivered hybrid and/or online.

SW 6700  
Advanced Practice with Communities of Color and Other Diverse Populations  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): SW 6000, SW 6320  
Explains diversity and difference, power and privilege, and oppression. Encourages self-examination within these systems as an essential foundation for culturally competent social work practice. Introduces issues related to service utilization within communities of color and providing effective interventions for historically underserved populations.

SW 6710  
Policy Practice with Communities of Color and Other Diverse Populations  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): SW 6300  
Emphasizes macro practice skills in working with different communities of color through empowerment and collaborative efforts. Explores the historical trends related to institutional discrimination and how this is expressed in current society as policy and cultural norms. Explains a variety of strategies for increasing participation across systems from communities of color and how to empower these groups without resorting to professional imperialism.

SW 6720  
Engaging and Empowering the Latino Community  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): SW 6320  
Builds on the generalist practice, research, policy, and human behavior courses from the foundation year. Includes how to integrate content with clinical knowledge and skills relevant to practice with Latinos. Provides guidelines for application of content to Latinos and practicum cases. Identifies challenges that surface in those applications. Focuses on increasing awareness of how cultural backgrounds, values, traditions, and filters influence worldviews.

SW 6810  
Integrative Seminar I  
1:1:0  
* Prerequisite(s): Admission to the MSW program  
* Corequisite(s): SW 6910  
Integrates and applies the knowledge and skills obtained from coursework to a social service agency setting. Examines practice experiences such as experiences with people of different cultures/races/ages, ethical dilemmas, emotional and cognitive responses to agency experience, etc. Processes issues that may arise during students’ field experiences.

SW 6820  
Integrative Seminar II  
1:1:0  
* Prerequisite(s): SW 6810  
* Corequisite(s): SW 6920  
Builds on Integrated Seminar I. Integrates and applies the knowledge and skills obtained from coursework to a social service agency setting. Examines practice experiences such as experiences with people of different cultures/races/ages, ethical dilemmas, emotional and cognitive responses to agency experience, etc. Processes issues that may arise during students’ field experiences.

SW 6830  
Integrative Seminar III  
1:1:0  
* Prerequisite(s): SW 6820  
* Corequisite(s): SW 6930  
Provides opportunities for integration of social work course work and field practicum experiences. Features in-depth analysis of specific social work competencies within the students’ domains of practice. Teaches the domains of social work practice that include: assessment, interventions, program policies, and service delivery and leadership in the chosen practice area. Provides guidance in practicum and seminar.

SW 6840  
Integrative Seminar IV  
1:1:0  
* Prerequisite(s): SW 6830  
* Corequisite(s): SW 6940  
Builds on Integrative Seminar III. Provides opportunities for integration of social work course work and field practicum experiences. Features in-depth analysis of specific social work competencies within the students' domains of practice. Teaches the domains of social work practice that include: assessment, interventions, program policies, and service delivery and leadership in the chosen practice area. Provides guidance in practicum and seminar.

SW 6910  
Foundation Field Practicum I  
4:0:12  
* Prerequisite(s): Admission to the MSW program  
* Corequisite(s): SW 6810  
Offers engaged field education as the central form of instruction and learning to socialize students to become practitioners. Integrates social work theory with practice. Reinforces the purposes, values, and ethics of the social work profession. Fosters the integration of empirical and practice-based knowledge to promote the development of professional competence.

SW 6920  
Foundation Field Practicum II  
4:0:12  
* Prerequisite(s): SW 6910  
* Corequisite(s): SW 6820  
Provides opportunity to apply classroom learning and to integrate theory with practice. Aligns with Council on Social Work Education standards for field education. Reinforces the purposes, values, and ethics of the social work profession. Promotes the development of professional competence.

SW 6930  
Advanced Field Practicum I  
4:0:12  
* Prerequisite(s): Admission to the MSW program  
* Corequisite(s): SW 6830  
Provides agency-based field instruction for advanced learning and practice opportunities relevant to social work. Provides opportunity to integrate and apply advanced generalist practice theory within field experiences. Advances knowledge and skills in practice, research, and evaluation across multi-level systems. Combines field experience, traditional classroom, field supervision, online activities and assignments, and self-directed learning per the field practicum manual.

SW 6940  
Advanced Field Practicum II  
4:0:12  
* Prerequisite(s): SW 6930  
* Corequisite(s): SW 6840  
Continues agency-based field instruction and classroom seminar for advanced learning and practice opportunities relevant to social work. Provides opportunity to integrate and apply advanced generalist practice theory within field experiences. Increases knowledge and skills in practice, research, and evaluation across multi-level systems. Combines field experience, traditional classroom, field supervision, online activities, assignments, and self-directed learning per the field practicum manual.

SW 6945  
Supplemental Field Practicum  
1 to 4:0:3 to 12  
Spring  
* Prerequisite(s): SW 6940 or departmental approval  
Agency-based field instruction for advanced learning and practice opportunities relevant to social work. Provides opportunity to integrate and apply advanced generalist practice theory within field experiences. Increases knowledge and skills in practice, research, and evaluation across multi-level systems. Combines field experience, field supervision, and self-directed learning per the field practicum manual. May be repeated for a maximum of 4 credits toward graduation.
Course Descriptions

SW 6950
MSW Capstone
2:2:0
* Prerequisite(s): SW 6000, SW 6300, SW 6400
Synthesizes course work and field practicum into a final capstone project. Emphasizes readiness for graduate level employment through networking, developing a resume, practicing interviewing skills, and preparing for the advanced clinical social work exam.

Technology Management (TECH)

TECH 1000
Experiential Credit Portfolio Development and Assessment
2:2:0
Fall, Spring
* Prerequisite(s) or Corequisite(s): TECH 110R
Introduces basic concepts, theories and principals of a professional portfolio to demonstrate prior learning experience. Includes the identification of prior professional experience, certifications, licenses, etc. to document professional competencies for assessment by a committee of appropriate faculty and technology professionals to determine experiential credit granting equivalences in courses TECH 110R. Introduces the value of continuous learning and the process of learning how to learn.

TECH 1010
Understanding Technology
3:3:0
Fall, Spring, Summer
Covers the principal technologies that are important and prevalent today and their associated science principles. Explores how technology applies to, affects, and interacts with various fields, environments and workplaces. Develops an appreciation for how technology evolves and what possible new and exciting technologies are on the horizon.

TECH 1050
Manufacturing Processes and Systems
3:2:3
Fall
Covers a wide variety of manufacturing processes, including: casting, welding, sheet metal forming, machining, composites fabrication, injection molding, extrusion, thermofoming, rotational molding, and electronics fabrication. Covers understanding of manufacturing systems and all the components required to work together, including: the production system, ERP software system, quality system, business structure, supply chain, and delivery.

TECH 110R
Technical Experiential Credit
1 to 8:0:3 to 24
Fall, Spring
* Prerequisite(s): TECH 1000
Allows students to obtain technical experiential credit through an approved portfolio. Portfolio is developed and approved in TECH 1000. May be repeated for a maximum of 15 credits toward graduation.

TECH 200G
Technology and Human Life
3:3:0
Fall, Spring, Summer
Acquaints students with the major technologies affecting our culture and the global community, such as biotechnology, nanotechnology, information technology, and military technology. Places special emphasis on the moral, social, economic, legal, and political consequences of these technologies. Covers summary descriptions of various technologies, some of the major issues associated with them, and the underlying philosophical foundations of our encounters with them. May be delivered online.

TECH 2010
Supervision in Technology
3:3:0
Fall, Summer
Addresses employee motivation and the impact of the workplace environment (both physical and intangible). Presents various techniques of leadership and management (addressing different motivational theories and contemporary research on worker motivation). Teaches how to build and work in effective teams to inspire good performance and use conflict and negotiation effectively. Practices good communication skills both written and oral. Teaches how to understand the organizational structure, how to manage and assess performance, and how to be aware of opportunities and challenges when managing employees in a technological environment, including strategies for training and evaluation. May include hybrid or online delivery.

TECH 2020
Operational and Product Safety Management
3:3:0
Fall, Spring, Summer
Presents fundamentals of safety in the workplace including ergonomic, environmental, and other risk factors associated with new technology. Examines the role of technical managers through case studies and observation of local work places and businesses. Studies the impact of governmental agencies and regulations on workplace and product safety. Compares various communication and human factors techniques to prevent and mitigate human error.

TECH 2050
Introduction to Quality Management
3:3:0
Spring
* Prerequisite(s): STAT 1040, STAT 1045, or EQGT 1600 with a grade of C- or higher
Introduces quality management. Includes ISO 9000, application of Lean Six Sigma, continuous process/ product improvement, basic statistical methods, performance measurements, cost of poor quality, employee empowerment, and global quality initiatives. Covers requirements for relevant professional certifications for career enhancement.

TECH 281R
Internship in Technology
1 to 3:1 to 3
On Sufficient Demand
* Prerequisite(s): Department Approval
Obtains work experience for lower-division students in their technical field. Provides supervised, practical, and professional experience. Demonstrates accountability regularly with a School of Technology and Computing coordinator. May be repeated for a maximum of 3 credits toward graduation. May be graded credit/no credit.

TECH 290R
Current Topics in Technology
3:3:0
On Sufficient Demand
On Sufficient Demand
Demonstrates current developments in technology fields and how they apply to business and industry processes. Prepares students to use contemporary technologies in their professions. May be repeated for a maximum of nine credits toward graduation. May be delivered hybrid.

TECH 297R
Independent Study
1 to 3:0:0 to 9
On Sufficient Demand
* Prerequisite(s): Department approval
Requires individual initiative and responsibility. For qualified students who wish to undertake an independent project or directed study related to an area of technology or manufacturing. The topic must be approved by the instructor and the Department Chair. May be repeated for a maximum of 4 credits toward graduation.

TECH 3000
Introduction to Technology Management
3:3:0
Fall, Spring, Summer
* Prerequisite(s): University Advanced Standing
Addresses the special characteristics of managing and leading technology dependent organizations. Covers the leading influential technologies, technology's impact on organizational structure and the policy process, strategic technological planning, futures studies, leadership, global aspects of technology management, performance assessment, technology life cycles and financing, and some of the major ethical implications of managing technology dependent organizations.

TECH 3010
Creativity Innovation and Change Management
3:3:0
Fall, Spring, Summer
* Prerequisite(s):ENGL 1010 or ENGH 1005, Sophomore Standing, and University Advanced Standing
Focuses on principles of creativity and innovation as they apply to technological enterprises. Covers theoretical and practical concepts of both creativity and innovation. Studies both concept and practice of structured methods of creative problem solving. Examines "Appreciative Inquiry" as an alternative management of change technique. Examines inventors and the invention process, including the patent process. Uses lecture, discussion, group projects, case studies, class activities, presentations, videos and guest lecturers.

TECH 301R
Technology Lecture Series
1:1:0
Fall, Spring
* Prerequisite(s): ENGL 2010 and University Advanced Standing
Presents lectures from external speakers in various technology related subjects. Requires a written reaction paper for most of the lectures. May be repeated for a maximum of 2 credits toward graduation.
TECH 3400
Project Management
3:3:0 Fall, Spring, Summer
* Prerequisite(s): University Advanced Standing
Teaches the fundamental principles, processes, and techniques of project management. Includes a systems approach to planning, scheduling, and controlling projects. Focuses on effective processes for managing projects across multiple disciplines/industries and varying management structures. Introduces project management tools that can be used to guide and manage individual and multiple projects. May be delivered hybrid and/or online.

TECH 3700
Materials Management
3:3:0 Fall, Spring, Summer
* Prerequisite(s): TECH 3000 and ENGL 2010 and University Advanced Standing
Involves a comprehensive approach to purchasing, raw and finished goods inventories, and determining and managing capacity and workers. Includes Just-in-time, Kanban, scheduling and emerging technologies. Assists in preparing students for national certifications.

TECH 3850
Quality Management in Technology
3:3:0 Fall, Spring, Summer
* Prerequisite(s): [(TECH 3000 and (STAT 1040 or STAT 1045) or advisor approval) and University Advanced Standing
Involves a comprehensive approach to Quality Management related to technical professions. Covers Lean and Six Sigma approaches, continuous improvement/Kaizen, Voice of the Customer (VOC), Statistical Process Control (SPC), cost of poor quality, leadership, employee empowerment, teamwork, change management, and quality standards. Assists in preparing students for the relevant professional certifications for career advancement.

TECH 4000
Reliability Management
3:3:0 Fall, Spring, Summer
* Prerequisite(s): TECH 3000, TECH 3850, (STAT 1040 or STAT 1045), and IM 2010 each with a grade of C- or higher and University Advanced Standing
Introduces reliability as a component of successful business strategies. Covers processes for design for reliability in the context of quality management and product development. Presents the most common tools and techniques used to test and interpret reliability data. Examines the role of managers and reliability engineers to ensure product reliability and safety. Uses a mix of case studies, student research, and current events to examine the business impact of reliability in technical enterprises. Software fee of $15 applies.

TECH 405G
Global Ethical and Professional Issues in Technology
3:3:0 Fall, Spring, Summer
* Prerequisite(s): PHIL 2050 with a grade of C- or higher and University Advanced Standing
Examines professional, ethical, and cultural issues related to the leadership of technological organizations. Studies the impact of emerging technologies, conflicting values, multiculturalism, and globalization on management practices in the workplace. Reviews current ethical theory and professional codes of conduct with special emphasis on global and intercultural issues. Includes lectures, readings, case studies and other media. May be delivered online.

TECH 4200
Technology Marketing and Customer Relationship Management
3:3:0 Fall, Spring, Summer
* Prerequisite(s): TECH 3000 and University Advanced Standing
Examines customer relationship management (CRM) and its application in marketing, sales, and service. It will include the use of Microsoft Dynamics CRM as well as a number of online resources. Students will learn CRM to align business process with customer-centric strategies, such as identification, acquisition, growth and retention of desired customers. Emphasis is given on conceptual knowledge, real-world projects, and hands-on learning using Microsoft Dynamics CRM software. May be delivered online.

TECH 4400
Advanced Project Management
3:3:0 Fall, Spring
* Prerequisite(s): TECH 3400 with a C- or higher; University Advanced Standing
Presents advanced tools and techniques which build on the concepts presented in introductory project management class. Covers principles for managing multiple projects. Studies best practices for project management. Introduces the activities of Program Management, Project Portfolio Management and Strategic Project Leadership and Management. Analyzes basic cost justification techniques for making economic decisions in technical organizations. May be delivered online.

TECH 4420
Organization Information Technologies
3:3:0 Fall, Spring, Summer
* Prerequisite(s): TECH 3000 and IM 2010 and (ACC 3000 or ACC 2020) all with a C- or higher; and University Advanced Standing
Introduces how information, and the management of that information, can affect the structure and operations of organizations. Covers technical and organizational foundations of information systems along with contemporary approaches to building, managing, and protecting information systems including hands-on work with a modern Enterprise Resource Planning (ERP) system. Emphasizes how information technology affects decision-making. Uses Excel as a decision support tool. Examines the ethical and legal issues raised by the capabilities of information technology. May be delivered online. Lab access fee of $45 for computers applies.

TECH 481R
Internship
1 to 3:1 to 3:0 On Sufficient Demand
* Prerequisite(s): TECH 3400, Technology Management Department Chair Approval, and University Advanced Standing
Provides opportunities to apply classroom theory while students work as employees in a job that relates to their careers. May be repeated for a maximum of 9 credits toward graduation. May be graded credit/no credit.

TECH 489R
Undergraduate Research in Technology Management
1 to 3:0 to 15 On Sufficient Demand
* Prerequisite(s): Department approval and University Advanced Standing
Provides the opportunity to conduct research under the mentorship of a faculty member. Practices the theoretical knowledge gained in prior major courses. Requires the creation of a significant intellectual or creative product that is characteristic of the Technology Management discipline and worthy of communication to a broader audience. May be repeated for a maximum of 3 credits toward graduation.

TECH 490R
Current Topics in Technology Management
3:3:0 On Sufficient Demand
* Prerequisite(s): (Senior Status or Instructor Approval) and University Advanced Standing
Designed to show developments in business and industry professions in the short- and mid-term future. Acquaints students with the newest technological developments in their fields. Prepares students for the changes that various technologies will bring their professions. May be repeated for a maximum of 9 credits toward graduation.

TECH 4910
Senior Capstone Project
3:3:0 Fall, Spring, Summer
* Prerequisite(s): TECH 3400, TECH 3850, Senior Status, and University Advanced Standing
For senior Technology Management majors. Provides a leadership transition from academic to applied/real-life work experience. Includes student, company liaison, and coordinator evaluation, on-site work visits, written assignments and oral presentations. Offers experience in establishing and accomplishing team objectives that improve their ability to add real value in their future employment.

TECH 497R
Independent Study
1 to 3:0 to 9 On Sufficient Demand
* Prerequisite(s): Technology Management Department Chair Approval and University Advanced Standing
Offers independent study as directed in reading or individual projects at the discretion and approval of the department chair. May be repeated for a maximum of 4 credits toward graduation.
# Course Descriptions

## Theatre (THEA)

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</table>

* Prerequisite(s): THEA 1033, THEA 1113, THEA 1513, THEA 2203, THEA 1013 or Instructor Approval
* Corequisite(s): Matriculation BA Theatre Arts
* Corequisite(s): THEA 1514

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Examinates theatre analysis, history, dramatic structure, outstanding dramatic literature, and the various roles in theatre production including the playwright, producer, director, the design team, production staff, house staff, run crew, and publicity. Utilizes lecture, film review, play reading, and live theatre attendance. 

Designed to develop the analytical skills necessary for understanding the motion picture - not only as an art form, but as a tool for the statement of ideas. Explores the visual and aural elements employed by movie-makers to influence audiences. Studies context–the historical, social, political, cultural, and artistic situation which produced the film and how it reflects ourselves and our society. Combines lecture, screening, and demonstration with critical discussions of assigned readings and films. Requires a weekly lab.

For theatre arts majors and anyone interested in developing acting skills. Covers basic acting terminologies and definitions, techniques of movement, voice, and script analysis with a strong emphasis on performance ethics.

Provides student actors with tools for increasing vocal ease and expressivity, with an emphasis on cultivating free and spontaneous breath impulse. Introduces the range of human speech sounds experientially, as a prelude to detailed phonetics and accent work. Provides a framework for developing a personal practice of voice and speech outside the classroom and applying learning through in-class performance. Please note, this is a course in acting, not public speaking.

Introduces student actors to principles and practices of physical training—including yoga, Alexander technique, and contact improvisation.

Introduction to character makeup application for stage and screen with emphasis on corrective, age, and period with some stylized applications. Studies include the development of physical characterization for scripted characters. Course fee of $23 for materials applies.

Surveys all elements of theatre and film production including sets, lighting, sound, properties, and costumes. Offers experience in the construction, painting, dressing, and striking of sets and props; the hanging, focusing and gelling of lighting instruments; the preparation of sound effects; and the operation of sound and lighting control equipment. Utilizes lecture, demonstration, films, and observation of working production facilities and personnel. Course fee of $30 for equipment applies.

Laboratory component to THEA 1513. Offers experience in the construction, painting, dressing, and striking of sets and props; the hanging, focusing and gelling of lighting instruments; the preparation of sound effects; and the operation of sound and lighting control equipment.

Provides the opportunity for students to earn college credit for supervised backstage crew positions on departmental productions. Includes assignments to wardrobe, deck crews, board operations, props and any additional positions a specific production might require. Requires participation for the entire technical rehearsal and production run to receive credit. May be repeated for a maximum of 2 credits toward graduation.

Introduces students to the analysis of story-based texts across a range of media. Focuses on the application of narrative and semiotic theory to dramatic literature from various periods in theatre history. Involves lecture, discussion, script and text analysis, film viewing, and live production attendance.

Designed to build upon the techniques learned in THEA 1033. Emphasizes character development and application in creating a role through intense scene study of scripts in both stage and screen.

Introduces concepts and techniques to teach theatre to children in the community, schools or home consistent with state and national standards. Identifies methods to use drama to teach other subjects. Introduces concepts, theories and techniques in creative drama. Assists students to become independent, creative, and productive learners as they acquire the knowledge, skills, and experience to teach drama and theatre to children ages 5-12.

Designed to help actors for both stage and screen develop the physical awareness and self discipline critical to effective performance of period style, staged combat, and the musical. Emphasizes balance, strength, postural correction, energy drives, motivation, and basic movement vocabulary.

Provides group instruction for actors to develop technical skill and understanding of the singing voice. Requires a minimum of 2 hours of practice each week.

Provides general theatre shop experience designed to offer opportunity for the hands-on application of basic sewing methods of theatrical costuming. Includes training in sewing machine and serger operation, basic sewing techniques, fabrics, simple patterning, and skills of costume construction. Course fee of $12 for equipment applies.

Laboratory component to THEA 2203. Provides general theatre shop experience designed to offer opportunity for the hands-on application of basic sewing methods of theatrical costuming. Includes training in sewing machine and serger operation, basic sewing techniques, fabrics, simple patterning, and skills of costume construction.

Introduces the philosophy and practices of theatre for children and youth, including its range of uses in the classroom, on the stage, in the community, corporate world and beyond. Focuses on storytelling, puppetry, and dramatic texts for children and youth. Requires play attendance.

Provides students with opportunities to perform in touring theatre productions for elementary and secondary audiences in school settings. Includes training in professional and amateur practices in performing, directing, designing, constructing, and managing touring shows for children and youth. May be repeated for a maximum of 6 credits toward graduation.
THEA 2311 (Cross-listed with: CINE 2311)  FF  
Film History I  
3:3:0  Spring  
Explores the development of the feature film, both in America and abroad from 1896 to 1945. Covers the evolution of motion pictures from conception as an entertainment novelty (c. 1895) to the mass-audience, commercial art form of the 1940’s. Examines film as a serious historical study of a form of mass communication, which has had ethical, social, and political consequences on society. Includes lecture, screenings, and demonstrations with critical discussions of assigned readings and films.

THEA 2312 (Cross-listed with: CINE 2312)  
Film History II  
3:3:0  Fall  
Explores the development of the feature film, both in America and abroad from 1940 to the Present. Emphasizes the continuing evolution of motion pictures from the height of the Studio System 1930s through to its status as one “form” of digital entertainment in 2010. Examines film as a serious historical study of a form of mass communication, which has had ethical, social, and political consequences on society. Includes lecture, screenings, and demonstrations with critical discussions of assigned readings and films. (Note: Some films screened may be considered controversial and carry an “R” rating.)

THEA 234R (Cross-listed with: CINE 234R)  
Special Topics in Cinema Studies  
3:2:2  On Sufficient Demand  
* Prerequisite(s): THEA 1023  
Focuses upon a particular genre, director, or film movement for the benefit of theater students seeking a film emphasis and MCT and English students seeking added depth in their fields of study. Topic varies by semester. May be repeated for 3 credits toward graduation, more for interest.

THEA 2513  
Introduction to Design for Stage and Screen  
3:3:0  Fall, Spring  
* Prerequisite(s): THEA 1513  
* Corequisite(s): THEA 2514  
Studies the design process associated with costumes, scenery, and lighting. Uses research, conceptual renderings, models, and drafting. Introduces perspective drawing, figure drawing, three dimensional model building, and standard drafting practices. Course fee of $10 applies.

THEA 2514  
Introduction to Design for Stage and Screen Lab  
1:0:3  Fall, Spring  
* Prerequisite(s): THEA 1513  
* Prerequisite(s) or Corequisite(s): THEA 2513  
Laboratory course to accompany THEA 2513. Teaches skills in the application of elements and principles of design in the creation of scenery, costumes, and lighting in the theatre.

THEA 2515  
Rendering for Theatre  
3:3:0  Fall  
* Prerequisite(s): ART 1020, ART 1650  
Trains theatrical design students in the advanced drawing and painting skills necessary to create detailed renderings of costumes and scenery that effectively communicate visual ideas for stage design concepts.

THEA 2517  
Visual Concepts in Theatre  
3:3:0  Fall  
* Prerequisite(s): THEA 2513  
Introduces students to the translation of scripts into visual imagery for the stage. Focuses on the processes of conception, development, and implementation of design components to the point of actual presentation.

THEA 2521  
Introduction to Lighting and Sound  
3:3:0  Fall  
Exposes students to foundational technologies and system designs in lighting and sound for live performance. Provides opportunities for hands-on experience working on realized productions within the theatre department, rounding out their educational experience.

THEA 2541  
Costume History  
3:3:0  Fall  
Studies costume history from ancient to modern times. Focuses on the political, social, economic and aesthetic concerns of each period. Includes study of the impact of other cultures on Western costume design.

THEA 259R  
Production Practicum for Stage and Screen  
1:0:3  Fall, Spring, Summer  
* Prerequisite(s): THEA 1513  
Provides the opportunity for sophomore students to earn college credit for supervised projects in production for the period up to dress rehearsal and during strike. Involves the development of a contract between the student and the assigned instructor. May be repeated for a maximum of 2 credits toward graduation.

THEA 271R  
BFA Cohort Seminar  
1:1:0  On Sufficient Demand  
Prepares BFA students for integration into the program through theatrical projects that encourage ensemble collaboration and cooperation with cohorts. Teaches critical unifying skills for future professional endeavors. May be repeated for a maximum of 8 credits toward graduation.

THEA 2741  
Scriptwriting for the Stage  
3:3:0  Fall, Spring  
Introduces practical storytelling techniques for the stage. Involves writing short form scripts using classic play structure. Focuses on helping student writers to find story material, create engaging characters, structure stories, and communicate thematic ideas.

THEA 2742  
Scriptwriting for the Screen  
3:3:0  Fall, Spring  
Introduces practical storytelling techniques for the screen. Involves writing short form scripts using dramatic structure. Focuses on helping student writers to find story material, create engaging characters, structure stories, and communicate thematic ideas.

THEA 281R  
Theatre Internship  
1 to 6:1 to 6:0  On Sufficient Demand  
* Prerequisite(s): Departmental Approval  
Provides a transition from school to professional life where learned theory is applied to actual practice through meaningful on-the-job experience. May be repeated for a maximum of 4 credits toward graduation. May be graded credit/no credit.

THEA 284R  
Singing Technique for Actors I  
1:1:0  Fall, Spring  
* Prerequisite(s): Audition required  
Offers private vocal instruction for theatre majors to develop skills and techniques for performance in musical theatre. Requires substantial individual practice each week and bi-monthly master class participation. May be repeated for a maximum of 3 credits toward graduation. Course lab fee of $331 for private voice lessons.

THEA 290R  
Independent Study  
1 to 5:1 to 5:0  On Sufficient Demand  
For students with individual projects. Credits given for acceptable projects in playwriting, direction, acting, design or other supervised performance, labor, or research in theatre or film. Proposals must be submitted and approved by the department or instructor prior to enrollment. May be repeated for a maximum of 3 credits toward graduation.

THEA 3033  
Acting III  
3:3:0  Spring  
* Prerequisite(s): THEA 1033, THEA 1113, THEA 2033 and University Advanced Standing  
Trains advanced students in the use of contemporary methods, theories, and practices in creation of roles. Focuses on material written and produced in late 20th and early 21st century theatre.

THEA 3110 (Cross-listed with: COMM 3110, ENGL 3110)  
Non Fiction Cinema History  
3:2:3  On Sufficient Demand  
* Prerequisite(s): THEA 1023 and University Advanced Standing  
Surveys the history of non-fiction/documentary film from 1896 to the present. Includes study of early pioneers from Flaherty’s NANOOK OF THE NORTH to the current trend of reality television and the popular documentaries of Michael Moore.
THEA 3113  Acting for Film  
3:2:3  Fall  
* Prerequisite(s): THEA 2033 or DGM 2110 or Instructor Approval; University Advanced Standing  
Introduces the specialized techniques of performance, audition, and agent/actor relationships as they apply to the film and television industries.

THEA 3115  Improvisation  
3:3:0  Spring  
* Prerequisite(s): THEA 1113, THEA 2033, THEA 2131 and University Advanced Standing  
Introduces acting students to the use of improvisational techniques. Includes advanced training in the application of objectives, tactics, relationships, and movement in the creation of improvised scenes.

THEA 3116  BA Auditioning  
3:3:0  Spring  
* Prerequisite(s): THEA 1033 and University Advanced Standing  
Prepares BA students with the specific skills to successfully audition for stage roles at the amateur level. Includes instruction on playing objectives, defining relationships, making emotional connections, and physicalizing action. Focuses on mental and psychological preparation for the audition situation.

THEA 3117  Auditioning I  
3:3:0  Spring  
* Prerequisite(s): THEA 1033, THEA 2033, THEA 3115 and University Advanced Standing  
Prepares students with the specific skills to successfully audition for stage and screen roles. Includes work on objectives, relationships, emotional connection, and honest physically.

THEA 3118  Improvisation II-Performance Team  
2:1:3  Fall, Spring  
* Prerequisite(s): THEA 1033, THEA 2033, THEA 3115, and University Advanced Standing  
Develops acting skills through improvisational performance. Involves training in short and long form improv incorporating skills of story and song structure. Emphasizes application of objectives, tactics, relationships, honest response and communication, and sensory work.

THEA 3122  Voice and Speech II  
3:3:0  Fall  
* Prerequisite(s): THEA 1113, THEA 2033, THEA 2131, and University Advanced Standing  
Continues the work of first-semester Voice and Speech. Deepens the actor's use of voice, including resonance, range, and vocal variety. Introduces detailed phonetics using the International Phonetic Alphabet and identifies markers of formal versus informal speech. Greater emphasis will be placed on text work, including imaging and operative language. Please note, this is a course in acting, not public speaking.

THEA 3123  Acting in Accent  
3:3:0  Fall  
* Prerequisite(s): THEA 1113, THEA 3122, and University Advanced Standing  
Introduces methods for the actor to research, prepare, and perform any accent with authenticity. Includes exploration of the articulatory setting, pronunciation, and prosody of an accent, using primary research sources.

THEA 3124  Voice and Speech III  
3:3:0  Fall  
* Prerequisite(s): THEA 3122, BFA Theatre majors only, and University Advanced Standing  
Introduces advanced topics in voice and speech including creating character voices, voice use in heightened emotional states and violence, and/or beginning and narration.

THEA 3131  Movement for the Actor II  
3:3:0  Fall  
* Prerequisite(s): THEA 1033, THEA 2131 and University Advanced Standing  
Trains advanced movement students in somatic techniques such as Yoga, Tai Chi, Feldenkrais, and Laban.

THEA 3133  Stage Combat  
3:3:0  Fall  
* Prerequisite(s): THEA 2131 and University Advanced Standing  
Teaches basic principles of stage combat/choreography and safety practices.

THEA 314G (Cross-listed with: COMM 314G, ENGL 314G)  
Global Cinema History  
3:2:3  On Sufficient Demand  
* Prerequisite(s): (ENGL 2150 or THEA 1023) and University Advanced Standing  
Studies the evolution of global film styles, movements, stars, and genres with a focus on international cinema chronologies outside the United States. Some films screened may be considered controversial and carry an "R" rating.

THEA 3151  Acting for Musical Theatre I  
3:3:0  Spring  
* Prerequisite(s): THEA 2033 and University Advanced Standing  
Introduces the acting student to the techniques of acting, singing, and dancing for the musical, as well as looking at the history and trends of the musical. Also incorporates the art of transitioning between dialogue and song.

THEA 3152  Acting for Musical Theatre II  
3:3:0  Fall  
* Prerequisite(s): THEA 3151 and University Advanced Standing  
Further develops and refines the performer's abilities as a singer, dancer, and actor. Links trends in musical theatre with past and present artistic choices. Explores design aspects of musical theatre and thematic integration of acting, singing, and dancing. Includes lecture, discussion, film, rehearsal, and performance.

THEA 3154  Dance for Musical Theatre I  
3:2:3  Fall  
* Prerequisite(s): THEA 2033 and University Advanced Standing  
Focuses on the academic and practical study of the history and development of Musical Theatre Dance as an art form from the late 19th century to present. Melds tap, ballet, jazz, ballroom, and ethnic dance into practical character and story based movement while exploring historic context, landmark choreographers and productions.

THEA 3155  Dance for Musical Theatre II  
2:3:3  Not Offered  
* Prerequisite(s): THEA 3154, BFA Theatre Arts: Musical Theatre emphasis majors only, University Advanced Standing  
Introduces the study of musical theatre choreography. Emphasizes practical application involving a blending of various styles of dance into the creation of practical character and story-based movement.

THEA 315R  Musical Theatre Practicum  
2:0:6  Fall, Spring  
* Prerequisite(s): Audition, University Advanced Standing  
Provides opportunities for musical theater students to perform leading roles in shortened versions of multiple musicals, and collaborate in the full process of producing a musical. May be repeated for a maximum of 6 credits toward graduation. Course fee of $30 for materials, specialized clothing applies.

THEA 319R  Performance Practicum for Stage and Screen  
1:0:3  Fall, Spring  
* Prerequisite(s): Audition, THEA 159R or Instructor Approval, and University Advanced Standing  
Provides opportunity for earning college credit for supervised performance and production assignments in UVU theatre productions from dress rehearsal through closing performance (excluding strike). Allows students to apply learned skills to productions that are currently in performance. Requires project approval from instructor or Department Chair. May be repeated for a maximum of 4 credits toward graduation.

THEA 3211  Applied Theatre  
3:3:0  Fall Odd Year  
* Prerequisite(s): University Advanced Standing  
Provides training and experience in Applied Theatre with adult, youth, and child participants in educational and community settings. Includes using Theatre of the Oppressed techniques (as formulated by Augusto Boal), devising original theatre pieces, and creating theatre-in-education programs that address social and community needs and issues.
THEA 3223 Makeup II 3:2:2 Spring
* Prerequisite(s): THEA 1223, Instructor Approval; and University Advanced Standing
Teaches advanced techniques in makeup design and application, character analysis, and three-dimensional masks. Includes hair applications, prosthetic appliances, airbrush techniques, and variety characterizations. Course fee of $120 for materials applies.

THEA 3231 Creative Drama 3:3:0 Fall Even Year
* Prerequisite(s): THEA 2211, THEA 2100, or Instructor Approval; University Advanced Standing
Examines how creative drama can be applied to other academic subjects, address social issues, and promote social change. Involves study of the works and creative processes of major theater practitioners.

THEA 3241 Storytelling 3:3:0 Spring Even Year
* Prerequisite(s): University Advanced Standing
Introduces techniques associated with effective storytelling practice. Focuses on the use of storytelling as a means of interpreting, generating and preserving stories as an entertaining and empowering tool. Includes performance.

THEA 3251 Puppetry 3:3:0 Spring
* Prerequisite(s): University Advanced Standing
Introduces techniques for constructing and performing with various puppets. Emphasizes performance for child, adolescent, and adult audiences.

THEA 3511 Stagecraft II 3:2:3 Spring
* Prerequisite(s): THEA 1513 and University Advanced Standing
Develops intermediate skills in the various stage crafts including carpentry, property construction, lighting and sound for theatre and film. Includes further education in drafting; set and lighting principles; professional, management and safety practices. Students fulfill assigned responsibilities for UVU theatrical productions. Course Lab fee of $40 for equipment applies.

THEA 3514 Period Styles for Theatre Design 3:3:0 Spring
* Prerequisite(s): THEA 2513
Introduction to historical styles of architecture, painting, and dress as they influence theatrical design.

THEA 3516 Art Direction for Film 3:3:0 On Sufficient Demand
* Prerequisite(s): THEA 3514 and University Advanced Standing
Focuses on the basics of production design and art direction, the importance of costumes, props, locations selection, special effects, and set decoration in the visual presentation of a cinematic story.

THEA 3521 Sound Design I 3:3:0 Spring
* Prerequisite(s): THEA 2513 and University Advanced Standing
Introduces students to the physics of sound. Focuses on the production of audio content, and the design and engineering of playback systems. Facilitates collaboration with other members of a theatrical design team. Requires 25 hours of technical sound support for UVU theatrical productions.

THEA 3531 Lighting Design I 3:3:0 Spring
* Prerequisite(s): THEA 2513 and University Advanced Standing
* Corequisite(s): THEA 3535
Focuses on the designing and practical application of theatrical lighting and sound. Includes laboratory work on UVU theatre productions. Course Tool fee of $20 for materials applies.

THEA 3534 Lighting Design II 3:1:6 Fall
* Prerequisite(s): THEA 3531 and University Advanced Standing
Explores and applies elements of design as they relate to lighting for theatre, dance and film from design process conception to final paperwork. Requires work on UVU productions as well as individual student projects.

THEA 3535 Lighting Design I Lab 1:0:3 Spring
* Prerequisite(s): THEA 2513 and University Advanced Standing
* Corequisite(s): THEA 3531
Laboratory component to THEA 3531. Allows students to implement theatrical lighting and sound design plans. Includes laboratory work on UVU theatre productions.

THEA 3541 Costume Design I 3:3:0 Spring
* Prerequisite(s): THEA 2513 and University Advanced Standing
* Corequisite(s): THEA 3545
Introduces theories and fundamentals of costume design with practical application through research and rendering. Provides an overview of costume history and period research. Emphasizes conceptual ideas based in script and director's concept. Course Lab fee of $19 applies.

THEA 3542 Costume Construction II 3:3:0 Spring
* Prerequisite(s): THEA 2203 and University Advanced Standing
Provides more experience with sewing machine operations and advanced sewing techniques. Includes textile selection and construction skills. Focuses on specialized pattern drafting and draping. Course fee of $25 for materials, equipment applies.

THEA 3543 Costume Design II 3:1:6 Fall, Spring
* Prerequisite(s): THEA 3541 and University Advanced Standing
Expands on theories of costume design and provides more experience with practical application through research and rendering. Emphasizes advanced conceptual ideas based in script and director's concept. Encourages organization of a professional portfolio.

THEA 3545 Costume Design I Lab 1:0:3 Spring
* Prerequisite(s): THEA 2513 and University Advanced Standing
* Corequisite(s): THEA 3541
Laboratory course to accompany THEA 3541. Provides opportunities for practical application of design fundamentals in creation of costumes for various genres and historical periods.

THEA 3561 Stage Management I 1:0:3 Fall, Spring
* Prerequisite(s): THEA 1513 and University Advanced Standing
Introduces students to the basic processes of creating and managing a theatre production organization. Includes introductory structural organization, collaboration, strategic planning, accounting, and marketing concepts, procedures, and simulation exercises. Prepares students for upper division courses in theatre management.

THEA 3565 Technical Direction for the Stage 3:3:0 Fall
* Prerequisite(s): THEA 3574 and University Advanced Standing
Explains the role of the Technical Director in the realization of a theatre production from page to stage. Offers training and hands-on experience in the collaborative production process as seen through the work of the Technical Director. Includes training in industry-standard software and tools.

THEA 3571 Scenic Design I 3:3:0 Spring
* Prerequisite(s): THEA 2513 and University Advanced Standing
* Corequisite(s): THEA 3575
Focuses on the application of advanced principles of scenic design for sets and properties. Involves completion of project designs featuring elevation drawing and drafting, rendering, and model building. Emphasizes development of conceptual ideas based on script and director's concept. Student designers for UVU productions may be selected from this class.
THEA 3572 Scenic Design II
3:1:6 Fall
Prerequisite(s): THEA 3571 and University Advanced Standing
Focuses on integration of elements and phases of advanced set construction, property construction and paint finishes for theatrical sets. Includes shop experience and work on UVU productions. Course fee of $30 for equipment applies.

THEA 3573 Scenic Painting
3:2:3 Fall
Prerequisite(s): THEA 2513 and University Advanced Standing
Introduces basic approaches to painting theatrical scenery. Covers traditional scene painting techniques and the tools and paints which support those techniques. Course lab fee of $42 applies.

THEA 3574 Drafting for Theatre Design
3:3:0 Spring
Prerequisite(s): THEA 2513 and University Advanced Standing
Introduces and trains technical theatre students in the processes of drafting for theatrical design. Focuses on attaining a basic proficiency in using the most recent computer-aided drafting software.

THEA 3575 Scenic Design I Lab
1:0:3 Spring
Prerequisite(s): THEA 2513 and University Advanced Standing
Corequisite(s): THEA 3571
Provides the laboratory component to THEA 3571 in which students may acquire skills in creation and presentation of scale models used in the development of scenic design for theatrical productions. Includes layout, model making techniques, model finishes, and presentation.

THEA 359R Production Practicum for Stage and Screen
1:0:3 Fall, Spring, Summer
Prerequisite(s): THEA 259R and University Advanced Standing
Provides opportunity to earn college credit for managing projects in production for the period up to dress rehearsal and during strike. Includes projects in lighting, sound, costumes, props, scenery, design, stage management, running crews, house management or publicity. Involves the development of a contract between the student and the assigned instructor. May be repeated for a maximum of 2 credits toward graduation.

THEA 3611 Directing Actors for the Stage and Screen
3:3:0 Fall
Prerequisite(s): (THEA 1033 and THEA 1713) or DGM 2110, and University Advanced Standing
Introduces basic directing techniques utilized in casting and rehearsing actors for stage and screen performance. Places emphasis on achieving honest and believable performances in the intimate style of camera acting, as well as the highly physical acting style of the stage. Includes studies in script structure, visualization, movement, pace and rhythm, gesture, casting techniques, and rehearsal techniques.

THEA 3612 Directing Actors for the Stage
3:3:0 Spring
Prerequisite(s): THEA 3611; University Advanced Standing
Builds upon concepts covered in Directing Actors for Stage and Screen. Includes class workshops and demonstrations followed by class/instructor critique. Requires completion and presentation of a director's book. Culminates in public presentation of a one-act play.

THEA 3614 Directing Actors for the Screen
3:3:0 Spring
Prerequisite(s): THEA 3611 or DGM 2110 or Instructor Approval; University Advanced Standing
Builds upon concepts covered in Directing Actors for Stage and Screen. Includes class workshops and demonstrations followed by class/instructor critique. Requires completion and presentation of a director's book. Culminates in public presentation of a short film. For Digital Media Majors and Theatre Majors with instructor approval.

THEA 3625 Development and Fundraising for the Arts
3:3:0 Spring Odd Year
Prerequisite(s): ENGL 2010 and University Advanced Standing
Introduces the development process, cultivating donors, and raising money through donations, sponsorships, and grants to support nonprofit arts organizations.

THEA 3711 Script and Text Analysis II
3:3:0 Fall
Prerequisite(s): THEA 1713 and University Advanced Standing
Focuses on the practical application of dramatic, narrative, semiotic, and developmental theory to the practice of theatrical artists, educators, and dramaturgs.

THEA 3721 Theatre History and Literature I
3:3:0 Fall
Prerequisite(s): THEA 1013, THEA 1713, ENGL 2010, and University Advanced Standing
Examines the history of the theatre from its earliest origins through the Renaissance. Emphasizes theatre practice in its social, political and economic contexts. Introduces the theory and skills necessary for writing analytically about the theatre.

THEA 3722 Theatre History and Literature II
3:3:0 Spring
Prerequisite(s): THEA 3721 and University Advanced Standing
Examines the history of the theatre and its associated literature and artists from the Restoration to the present time. Focuses on historical theatre practice in its social, political and economic contexts. Introduces the theory and skills necessary for writing performance reviews and extended research papers in theatre.

THEA 3725 Musical Theatre History
3:3:0 Spring
Prerequisite(s): THEA 1713 and University Advanced Standing
Explores the evolution of musical theatre from the 1700s through present day, focusing on how politics, cultural trends, and technology have changed the art form.

THEA 3731 Dramaturgy
3:3:0 Fall
Prerequisite(s): THEA 1713
Introduces students to the practice of production research and play outreach. Provides grounding in theory and analysis to develop skills in the discipline. Aimed at students in multiple interest areas such as performance, design and administration.

THEA 3741 Script Writing II
3:3:0 Spring
Prerequisite(s): (THEA 2741 or THEA 2742 or Instructor Approval) and University Advanced Standing
Builds and enlarges on the specific writing craft elements of plot, character, and theme introduced in prior writing classes. Examines plot structures in one-act plays and short films including documentaries. Involves students in identifying and strengthening weaknesses or challenges in their own as well as fellow students' original scripts. Includes active class discussions, readings, written and oral presentations, research and final projects of a one-act play or short film from 30 to 60 minutes in length.

THEA 374R New Script Workshop
3:2:3 Fall
Prerequisite(s): THEA 1033 or THEA 2741 or THEA 3611
Acts as a reading, performance, discussion and improvisation lab for scriptwriter's creative works. Involves students in the process of polishing, refining, and brainstorming dramatic works. Supports original student scripts with the ultimate goal of production. Integrates the work of writers, directors and actors into a collaborative effort. Includes active class discussions, readings, improvisations, written and oral presentations and critiques, research and completion of a project. May be repeated for a maximum of 6 credits toward graduation. Course fee of $15 for materials applies.
THEA 4114  
Film Acting II-Reel/Media  
2:1:3  
Fall, Spring  
* Prerequisite(s): THEA 2131, THEA 3123, and University Advanced Standing  
Focuses on development of the tools and skills necessary to compete as a professional actor. Involves creation of acting reels, head shots, and resumes. Emphasizes development of networking, professional etiquette and self-promotion skills needed to demonstrate a level of professionalism in the industry. Includes meetings with industry professionals.

THEA 4115  
Acting Styles  
3:3:0  
Spring  
* Prerequisite(s): THEA 2033, THEA 3721, and University Advanced Standing  

THEA 4117  
Auditioning II  
3:3:0  
Fall  
* Prerequisite(s): THEA 3117 and University Advanced Standing  
Teaches advanced skills and methods involved in the audition process for stage and screen roles. Focuses on developing resumes, interview skills, and preparing a wide range of audition pieces.

THEA 4118  
Senior Showcase and Career Management  
3:3:0  
Spring  
* Prerequisite(s): Senior Standing; THEA 4117, BFA Theatre Arts: Acting emphasis or Musical Theatre emphasis; University Advanced Standing  
Performance workshop course that allows BFA Theatre Arts: Acting and Musical Theatre emphasis seniors to collaborate with a director to create a showcase of each student actor's performance for professional purposes. Teaches key skills in career and personal financial management related to the acting profession.

THEA 4122  
Speaking Shakespeare  
3:3:0  
Spring  
* Prerequisite(s): THEA 1113, THEA 3122, and University Advanced Standing  
Increases the actor's command of operatic language, complex syntax, imagery, figures of sound, and rhythm to fulfill the demands of classical acting. Involves rigorous textual analysis of the verse and prose of Shakespearean texts followed by practice in vocal/physical interpretation and performance.

THEA 416R  (Cross-listed with: CINE 416R, ENGL 416R)  
Special Topics in Film Studies  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): ENGL 2150 or CINE 2150 or THEA 1023 and University Advanced Standing  
Covers cinema directors, genre, theory, and social change on a rotating basis. Explains course focus, defines terminology involved, then studies evolution and/or specific texts or contexts, and considers theoretical discourse. May be repeated for a maximum of 9 credits toward graduation. Some films screened may carry an "R" rating. Course fee of $40 for support applies.

THEA 4200  
Theatre and Drama in the Secondary School  
3:3:0  
Fall  
* Prerequisite(s): EDSC 3000, EDSC 4550, matriculation upon current research and practices. Emphasizes lesson plan writing using the Utah State Secondary Theatre Core Curriculum and the National Committee for Standards in Curriculum and the National Committee for Standards in the Arts. Integrates theory and practice through lecture, discussion, writing, activities, and classroom teaching experiences in the college and public school settings.

THEA 4212  
Practical Design  
1 to 3:1 to 3:0:3 to 9  
Fall, Spring  
* Prerequisite(s): Instructor Approval and University Advanced Standing  
Involves work on approved projects requiring sophisticated skills in scenic, lighting, costume, or makeup design. Includes designs for UVU productions or for community and regional performing groups. Requires approval by appropriate theatre faculty. May be repeated for a maximum of 3 credits toward graduation.

THEA 451R  
Special Topics in Costume Construction  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): THEA 2203 and University Advanced Standing  
Introduces students to the most advanced methods of tailored costume construction. Focuses on practical application of these techniques in the creation of fine couture. May be repeated for a maximum of 9 credits toward graduation.

THEA 4521  
Theatre Administration I  
3:3:0  
Spring Even Year  
* Prerequisite(s): University Advanced Standing  
The first of two culminating courses in undergraduate theatre administration (theatre management). Introduces concepts in theatre administration for the nonprofit theatre organization. Focuses on the framework of the four functions of administration with emphasis on the strategic planning process. Utilizes lecture, discussion, video, and real-world simulation experiences.
THEA 4622
Theatre Administration II
3:3:0 Fall Even Year
* Prerequisite(s): ACC 3000, THEA 4621, and University Advanced Standing

A continuation of the arts administration concepts begun in Arts Administration I. Discusses financial recordkeeping requirements, financial planning, and promotional aspects of the nonprofit theatre organization. Culminates in a business startup plan for a hypothetical nonprofit theatre organization. Discusses careers in arts administration. Discusses human resources as they apply to the theatre organization. Utilizes lecture, discussion, video, and real-world simulation experiences.

THEA 4741
Scriptwriting III
3:3:0 Spring Odd Year
* Prerequisite(s): THEA 2741 or THEA 2742 or Instructor Approval; University Advanced Standing

Extends student dramatic writing skills by creating, rewriting, and polishing a full-length film or play. Focuses on choice of material for specific audiences as well as the specific issues of adaptation of material from an already published source. Emphasizes the processes of selection, securing legal rights, adaptation management imperative to the success of a venture. Includes active class discussions, readings, written and oral presentations, research and final readings of students completed projects.

THEA 474R
New Play Practicum
1:0:3 Fall, Spring
* Prerequisite(s): THEA 1013 or Permission of instructor, and University Advanced Standing

Provides student writers, actors, directors, designers, and dramaturges with opportunities to participate in the development of new scripts for the stage. Emphasizes the process from script selection to actual production in UVU's Short Attention Span Theatre (SAST) festival. May be repeated for a maximum of 4 credits toward graduation.

THEA 475R
Special Projects in Dramatic Writing
2 to 9:1:4 to 12 On Sufficient Demand
* Prerequisite(s): THEA 4741 and University Advanced Standing

Offers upper-division directed study with professional/academic supervision to motivated students for writing projects such as commissioned or speculative scripted and/or dramatic works, i.e., musicals, one-man shows, guerilla theatre, mimes, short or full-length films, documentaries, television shows, lit-coms, movies-of-the-week and other forms not covered by current classes. Allows for a semester of writing/re-writing and/or critique/development and possible workshop presentation. May be repeated for a maximum of 9 credits toward graduation.

THEA 481R
Theatre Internship
1 to 8:1 to 8:0 Fall, Spring, Summer
* Prerequisite(s): Departmental Approval and University Advanced Standing

Provides a transition from school to professional life where learned theory is applied to actual practice through meaningful on-the-job experience. Repeatable for a maximum of 4 credits toward graduation. May be graded credit/no credit.

THEA 484R
Singing Techniques for Actors II
1:1:0 Fall, Spring
* Prerequisite(s): THEA 284R, Instructor Approval, and University Advanced Standing

Provides private vocal instruction for upper division theatre majors to continue develop skills and techniques for performance in musical theatre. Requires bimonthly master class participation and substantial individual practice. May be repeated for a maximum of 4 credits toward graduation. Course Lab fee of $331 for private voice lessons applies.

THEA 490R
Independent Study
1 to 3:0:5 to 15 On Sufficient Demand
* Prerequisite(s): University Advanced Standing

Provides independent study as directed in reading and individual projects at the discretion and approval of the Dean and/or Department Chair. May be repeated for a maximum of 9 credits toward graduation.

THEA 497R
Professional Topics
1:1:0 On Sufficient Demand
* Prerequisite(s): Junior Status Theatre Major, Department Approval, and University Advanced Standing

For those intending to enter professional theatre. Includes, but not limited to, the following topics: literature, research, analysis, design, management or performance aspects of theatre and the performing arts. May be repeated for a maximum of 3 credits toward graduation.

THEA 4981
Portfolio
1:1:0 Fall
* Prerequisite(s): University Advanced Standing

Features development of student portfolio for the areas of performance, design, management, directing, script writing, and performance. Includes interview skills and website development. Emphasizes placement in the theatrical job market or graduate school placement.

THEA 4993
Senior Project in Performance
3:0:9 Fall, Spring
* Prerequisite(s): THEA 3722, Senior Status, and University Advanced Standing

Provides credit for independent projects and research of advanced nature in the area of Theatre Arts under faculty supervision. Requires an area of study to be designated.

THEA 4994
Senior Project in Theatre
3:0:9 Fall, Spring
* Prerequisite(s): THEA 3722, Senior Status, and University Advanced Standing

Provides credit for independent projects and research of advanced nature in the area of Theatre Arts under faculty supervision. Requires an area of study to be designated.

University Studies (UVST)

UVST 1100
Prior Learning Assessment Theory and Practice
3:3:0 On Sufficient Demand
* Prerequisite(s): Departmental Approval

Helps students identify areas of learning they may want to have evaluated for college-level equivalency. Also guides students through the preparation and compilation of all components required for the evaluation of a portfolio of prior learning through LearningCounts.org. Delivered entirely online. Graded Credit/No Credit.

UVST 289R
Undergraduate Research
1:1:0 Fall, Spring
* Prerequisite(s): University Advanced Standing

Provides independent study as directed in reading and individual projects at the discretion and approval of the Dean and/or Department Chair. May be repeated for a maximum of 4 credits toward graduation.

UVST 299R
Community Engagement and Applied Service Learning
1:1:0 Fall
* Prerequisite(s): UVST 289R or Department Approval

Utilizes Phi Theta Kappa’s theme from their “Honors in Action” program as a vehicle to introduce undergraduates to research. Requires students to write a literature review and to present their findings. Requires students to be a member of Phi Theta Kappa. May be repeated for a maximum of 4 credits toward graduation.

UVST 3110
Theory and Practice of Tutoring Writing
3:3:0 Spring
* Prerequisite(s): ENGL 2010 and University Advanced Standing

Teaches investigative theories, methods, practices and processes of tutoring writing. Has students practice tutoring as a process, actively participating in tutorial sessions and developing tutees ability to do the same. Teaches students to read scholarship from the field of writing center studies that will give them an awareness of the concepts of professional and intellectual tutoring. Requires students to compose several responses to writing center theory, conduct numerous observations of tutorials, participate in tutorials, and ultimately compose an individual philosophy of tutoring.

UVST 481R
Internship
1 to 8:1 to 8:0 Fall, Spring, Summer
* Prerequisite(s): University Advanced Standing and Departmental Approval

Increases students' knowledge and skills in personal or career-related areas while synthesizing previous and new learning experiences. Final project involves reflection and demonstration of learning outcome achievement. For BA/BS University Studies majors, requires a project planned with and evaluated by a faculty mentor from an academic discipline closely related to the emphasis for the degree. Repeatable for a maximum of 16 credits toward graduation. May be graded credit/no credit.

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Zoology (ZOOL)

ZOOL 1090 BB Introduction to Human Anatomy and Physiology
3:3:0 Fall, Spring, Summer
* Prerequisite(s): BIOL 1010 or BIOL 1610
Presents a basic introduction to the sciences of anatomy and physiology. Covers the basic structure and function of the human body at the cellular, tissue, organ, and system levels. Provides a foundation of particular value for pre-nursing students who wish to have a preview of their required life science courses.

ZOOL 2320 Human Anatomy BB
3:3:0 Fall, Spring, Summer
* Prerequisite(s): BIOL 1610 and (ENGL 1010 or ENGH 1005) with a minimum of C- or written permission of the Anatomy program coordinator
* Corequisite(s): ZOOL 232L
Studies, in-depth, the anatomy of the human body. Covers the structure and some functions at the cellular, tissue, organ, and system levels. Emphasizes the names, locations, and functions of body components. Includes weekly laboratory study of human cadavers, models, and specimens. Course Lab fee of $30 applies.

ZOOL 2325 Human Anatomy Laboratory
1:0:3 Fall, Spring, Summer
* Corequisite(s): ZOOL 2320
Studies, in-depth, the anatomy of the human body. Covers the structure and some functions at the cellular, tissue, organ, and system levels. Emphasizes the names, locations, and functions of body components. Includes weekly laboratory study of human cadavers, models, and specimens. Course Lab fee of $30 applies.

ZOOL 232H Human Anatomy
3:3:0 Fall, Spring
* Prerequisite(s): BIOL 1610, (ENGL 1010 or ENGH 1005 or written permission of the Anatomy program coordinator), a minimum of a C- required in prerequisite courses.
* Corequisite(s): ZOOL 232L laboratory section; at least one semester of college level experience is highly recommended.
For students who intend to pursue careers in the biomedical sciences; especially pre-nursing, pre-med, pre-dent, and pre-vet students. Emphasizes the role and value of anatomical knowledge in health and disease. Covers the same general material as ZOOL 2320, but emphasizes clinical applications of the information. Students will choose and complete a course project that may involve short written reports, a term paper, or a poster presentation. Includes weekly laboratory study of human cadavers, models, and specimens. Canvas Course Mats $78/McGraw applies.

ZOOL 232L Human Anatomy Honors Laboratory
1:0:3 Fall, Spring
* Prerequisite(s): BIOL 1010 or BIOL 1610. ENGL 1010 or ENGH 1005 or written permission of the Anatomy program coordinator.
* Corequisite(s): ZOOL 232H
For students who intend to pursue careers in the biomedical sciences; especially pre-nursing, pre-med, pre-dent, and pre-vet students. Emphasizes the role and value of anatomical knowledge in health and disease. Covers the same general material as ZOOL 2320, but emphasizes clinical applications of the information. Students will choose and complete a course project that may involve short written reports, a term paper, or a poster presentation. Includes weekly laboratory study of human cadavers, models, and specimens. Course Lab fee of $30 applies.

ZOOL 242H Human Physiology
3:3:0 Fall, Spring
* Prerequisite(s): BIOL 1610 with a minimum grade of C- and CHEM 1110 with a minimum grade of C-, written permission of the physiology program coordinator.
* Corequisite(s): ZOOL 2425
Studies the functions of the human body at the chemical, cellular, organ, and system levels. Explains control mechanisms involved in homeostasis and stimulus/response pathways. Involves problem solving and analytical thinking. Includes weekly laboratory. Requires a term paper, project, or presentation.

ZOOL 2425 Human Physiology Laboratory
1:0:3 On Sufficient Demand
* Prerequisite(s): BIOL 1010 or BIOL 1610), CHEM 1110, written permission of the physiology program coordinator.
* Corequisite(s): ZOOL 242H
Studies the functions of the human body at the chemical, cellular, organ, and system levels. Explains control mechanisms involved in homeostasis and stimulus/response pathways. Involves problem solving and analytical thinking. Includes weekly laboratory. Course Lab fee of $24 applies.

ZOOL 3100 Vertebrate Zoology
3:3:0 Spring, Summer
* Prerequisite(s): BIOL 1010 or BIOL 1620) with a C- or higher and University Advanced Standing
* Corequisite(s): ZOOL 3105
Designed for intended Biology or Zoology majors who desire a broad introduction to the vertebrates and a greater understanding of their unique structure, distribution and the importance of these organisms in the present and past history of the Earth. Covers the evolutionary development of the vertebrates pertaining to major skeletal and physiological adaptations. The approach is also ecological as to vertebrate habitat requirements, their distribution, and community roles. Includes weekly laboratory.

ZOOL 3105 Vertebrate Zoology Laboratory
1:0:2 Spring, Summer
* Prerequisite(s): University Advanced Standing
* Corequisite(s): ZOOL 3100
Provides students with hands-on laboratory experience in classification and identification of vertebrates. Course Lab fee of $26 applies.

ZOOL 3200 Invertebrate Zoology
3:3:0 Fall
* Prerequisite(s): BIOL 1620 with a C- or higher and University Advanced Standing
* Corequisite(s): ZOOL 3205 Invertebrate Zoology Laboratory
Intended for Biology Department majors. Covers the anatomy, physiology, systematics, evolution and ecology of invertebrate animals.
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| ZOOL 3205   | Invertebrate Zoology Laboratory                  | 1:0:3   | Fall     | * Prerequisite(s): BIOL 1620 with a C- or higher and University Advanced Standing  
  * Corequisite(s): ZOOL 3200 Invertebrate Zoology  
  Covers the anatomy, physiology, systematics, evolution and ecology of invertebrate animals. Course Lab fee of $25 applies. |
| ZOOL 3300   | Herpetology Laboratory                           | 3:3:0   | On Sufficient Demand | * Prerequisite(s): BIOL 1620 with minimum grade of C-, and University Advanced Standing  
  * Corequisite(s): ZOOL 3305 Herpetology Laboratory  
  Covers the evolution, ecology, and diversity of reptiles and amphibians. Includes active class discussions, oral presentations. Emphasizes native Utah herpetofauna. Must be taken concurrently with weekly laboratory and required field trips. |
| ZOOL 3305   | Herpetology Laboratory                           | 1:0:2   | On Sufficient Demand | * Prerequisite(s): BIOL 1620 with minimum grade of C-, and University Advanced Standing  
  * Corequisite(s): ZOOL 3300 Herpetology  
  Covers the evolution, ecology, and diversity of reptiles and amphibians. Includes active class discussions, oral presentations, and field trips. Emphasizes native Utah herpetofauna. Must be taken concurrently with lecture. Course Lab fee of $40 for transportation, support, and lab applies. |
| ZOOL 3430   | Entomology Laboratory                            | 3:3:0   | On Sufficient Demand | * Prerequisite(s): BIOL 1620 and BIOL 1625 with a minimum grade of C- in each, and University Advanced Standing  
  * Corequisite(s): ZOOL 3435  
  Introduces the study of insects, including insect diversity and classification, anatomy and physiology, relationships to other animals and plants, behavior, and ecology. Includes the application of the study of insects to pest management, environmental assessment, and forensic investigations. |
| ZOOL 3435   | Entomology Laboratory                            | 1:0:2   | On Sufficient Demand | * Prerequisite(s): University Advanced Standing  
  * Corequisite(s): ZOOL 3430  
  Introduces the study of insects, including insect diversity and classification, anatomy and physiology, relationships to other animals and plants, behavior, and ecology. Includes the application of the study of insects to pest management, environmental assessment, and forensic investigations. |
| ZOOL 3500   | Mammalogy Laboratory                             | 3:3:0   | Fall     | * Prerequisite(s): BIOL 1620 with a minimum grade of C-, and University Advanced Standing; ZOOL 3100 and ZOOL 3105 strongly recommended  
  * Corequisite(s): ZOOL 3505  
  Explores the taxonomy, morphology, behavior, ecology, evolution, development, and conservation of mammals. Includes three weekly lectures and a weekly laboratory. |
| ZOOL 3505   | Mammalogy Laboratory                             | 1:0:2   | Fall     | * Prerequisite(s): University Advanced Standing  
  * Corequisite(s): ZOOL 3500  
  Explores the taxonomy, morphology, behavior, ecology, evolution, development, and conservation of mammals. Includes three weekly lectures and a weekly laboratory. Course Lab fee of $55 for transportation, lab applies. |
| ZOOL 3600   | Forensic Anthropology I                          | 3:1:2   | On Sufficient Demand | * Prerequisite(s): ZOOL 1090, or ZOOL 2320 and ZOOL 2325, University Advanced Standing  
  Provides instruction on the study of human bones and their remains as physical evidence in criminal investigations. Teaches the importance of dentition in determining an age estimate of human remains. Identiﬁes the differences among the sexes, whether the remains are human or nonhuman, and what is of forensic signiﬁcance. Explores crime scene methodology and clinical applications in Forensic Anthropology. Teaches problem solving and analytical thinking in order to develop a biological proﬁle based on population-speciﬁc data and standards. Investigates different pathological conditions and variables which must be taken into consideration when determining the cause of death. |
| ZOOL 3700   | Cross-listed with: EXSC 3700 Exercise Physiology | 3:3:0   | Fall, Spring, Summer | * Prerequisite(s): EXSC Majors: ZOOL 2320 (or 232H), ZOOL 2325 (or 232L), and EXSC 270G all with a C- or higher and (MATH 1050 or MATH 1055), PETE Majors: PETE 2700 and ZOOL 1090 with a C- or higher and (MATH 1050 or MATH 1055); ALL: University Advanced Standing  
  * Corequisite(s): ZOOL 2420 (or 242L), ZOOL 2425 (or 242L)  
  Studies acute and chronic physiological responses to exercise, as well as nutritional and environmental effects on these responses. Requires separate weekly laboratory. Canvas Course Mats $78/McGraw applies. |
| ZOOL 3705   | Cross-listed with: EXSC 3705 Exercise Physiology Laboratory | 1:0:3   | Fall, Spring, Summer | * Prerequisite(s): University Advanced Standing  
  * Corequisite(s): EXSC 3700  
  Studies acute and chronic physiological responses to exercise, as well as nutritional and environmental effects on these responses. The laboratory is designed to offer the hands-on experience where students will experience the physiological responses to different stressors in the lab setting. The labs are arranged to be conducted as similar material is being discussed in class. Course Lab fee of $28 for materials applies. |
| ZOOL 4000   | Animal Behavior                                 | 3:3:0   | Spring   | * Prerequisite(s): BIOL 1620 and University Advanced Standing  
  Examines the biological basis of animal behavior with emphasis on the underlying mechanisms and evolutionary causes of behavior. Covers first the proximate causes of behavior and then the ultimate or evolutionary causes of behavior. Includes topics such as the genetic basis of behavior, perceptual and effectual systems, ethology, neurophysiology, learning, animal communication, sexual behavior, and social systems. |
| ZOOL 4100   | Cross-listed with: MICR 4100 Parasitology       | 4:3:3   | On Sufficient Demand | * Prerequisite(s): (BIOL 1620 or MICR 2060) with a C- or higher and University Advanced Standing  
  Introduces the study of parasites. Emphasizes the biology of principal groups of parasites affecting humans, livestock, and other animals, including their medical economic, and ecological signiﬁcance. Emphasizes parasites causing zoonotic diseases. Includes weekly laboratory experience involving identiﬁcation of parasites. Course Lab fee of $25 applies. |
| ZOOL 4300   | Histology                                        | 4:3:2   | Spring   | * Prerequisite(s): [:ZOOL 2320 or ZOOL 232H] with a C- or higher or written instructor approval] and University Advanced Standing  
  For pre-professional students pursuing biomedical careers and Biology majors with a particular interest in vertebrate structure and function. Studies the microscopic structure of the body at the cellular, tissue, and organ levels. Emphasizes physical and functional relationships of various tissues in the organs of the body. Includes weekly laboratory. Course Lab fee of $35 applies. |
| ZOOL 4400   | Pathophysiology                                 | 4:4:0   | Fall, Spring | * Prerequisite(s): ZOOL 2320, ZOOL 2420, and MICR 2060 each with a minimum grade C-, and University Advanced Standing  
  For Biology majors with an emphasis in human physiology, pre-professional majors, and nursing students. Studies pathophysiological etiologies and mechanisms that cause disease and examines physiological adaptations and dysfunction of organs and organ systems in a disease state. |
| ZOOL 4500   | Comparative Vertebrate Zoology                   | 3:3:0   | On Sufficient Demand | * Prerequisite(s): ZOOL 3100 and (ZOOL 1090 or ZOOL 2320), with a grade of C- or higher, and University Advanced Standing  
  * Corequisite(s): ZOOL 4505 Comparative Vertebrate Zoology Laboratory  
  Studies the structure and function of vertebrates at the cellular, tissue, organ and systems levels. Emphasizes developmental and evolutionary comparative aspects of mammalian, avian, reptilian, amphibian, and piscian organs and systems. |
**ZOOL 4505**
Comparative Vertebrate Zoology Laboratory
1:0:3 On Sufficient Demand
* Prerequisite(s): ZOOL 3100 and (ZOOL 1090 or ZOOL 2320), with a grade of C- or higher, and University Advanced Standing
* Corequisite(s): ZOOL 4500 Comparative Vertebrate Zoology

Studies the structure and function of vertebrates at the cellular, tissue, organ and systems levels. Emphasizes developmental and evolutionary comparative aspects of mammalian, avian, reptilian, amphibian, and piscian organs and systems. Course Lab fee of $24 applies.

**ZOOL 4600**
Ornithology
4:3:2 On Sufficient Demand
* Prerequisite(s): BIOL 1620 and University Advanced Standing; ZOOL 3100 and ZOOL 3105 highly recommended

Provides an in-depth study of avian evolution, systematics, developmental anatomy (wings, beaks, feathers), physiology, and social and reproductive behavior. Emphasizes an evolutionary and adaptive theme to the study of birds. Includes lectures, laboratories and field trips. Course Lab fee of $41 for transportation, lab applies.

**ZOOL 4700**
Advanced Anatomy
4:3:3 Fall, Spring
* Prerequisite(s): ZOOL 2320 with a minimum grade of C- and University Advanced Standing

For students interested in biomedical science careers or with a special interest in anatomy. Covers principles and techniques of anatomical investigation and specimen preparation. Provides supervised experience in human cadaver dissection, anatomic interpretation of radiographs, craniometrics, and palpation of the body. A regional dissection approach will be used in the lab. Requires problem solving and analytical thinking. Includes the theory and basic principles of various forms of diagnostic imaging, light and electron microscopy, skeletal preparation, and injection/maceration techniques. Includes weekly laboratory. Course Lab fee of $13 applies.

**ZOOL 4750**
Human Physiology A Cell Biology Approach
4:3:3 Not Offered
* Prerequisite(s): BIOL 3400 and University Advanced Standing

Addresses physiological principles and functions of the human body systems at the molecular level. Emphasizes cell signal transduction involved in the body maintaining homeostasis. Gives special attention to nervous, muscular, cardiovascular, urinary and respiratory systems. Requires problem solving and analytical thinking skills to be successful in the class. Includes weekly laboratory. Course Lab fee of $25 applies.

**ZOOL 4780**
Neuroscience
4:3:2 Fall
* Prerequisite(s): ZOOL 2420 with a C- or higher and University Advanced Standing

Covers aspects of molecular and cell biology, physiology, pharmacology, anatomy and the interplay of these and other disciplines in our understanding of the structure and function of the nervous system. Discusses neuroanatomy, developmental neurobiology, electrophysiology, membrane specializations related to signal propagation and signal transmission, neurotransmitter function and neuropharmacology, structure and function of simple neuronal circuits and complex neural networks and the plasticity of the nervous system. Incorporates discussion of journal articles related to the latest advances in neuroscience.

**ZOOL 490R**
Special Topics in Zoology
1 to 4:1 to 4:1 to 8 On Sufficient Demand
* Prerequisite(s): BIOL 1620 and University Advanced Standing

Explores and examines special topics relating to the field of zoology. Emphasizes areas of rapid growth in zoology or current importance to society. May be repeated for a total of 9 credits toward graduation.