Utah Valley University Board of Trustees Meeting
October 26, 2017
4:00pm SC 213c

Tab	Agenda	Notes
	I. Action	
	1. Trustee Student Scholarship a. Mid-term Project Update (Arthur Evans, Sarah Khelfa) b. Award Parameters, *Scott Cooksey, VP for Development and Alumni Relations*	
A	2. Academic Programs, *Paul Thompson, Chair, Academic Affairs Committee* a. Ratification of Executive Committee vote of October 9, 2017 b. BA/BS/Minor in Family Sciences c. BS in Mechanical Engineering d. BS in Electrical Engineering e. BS in Civil Engineering	
	II. Closed Session	
	I. Action (Continued)	
	3. Rank and Tenure, *Jeff Olson, SVP, Academic Affairs*	
	4. Honorary Awards, *Karen Acerson, Chair*	
	III. Committee Reports	
	1. Academic Affairs Committee, *Paul Thompson, Chair* 2. Honorary Awards Committee, *Karen Acerson, Chair* 3. Audit Committee, *Duff Thompson, Chair*	
B	IV. Consent Calendar 1. Minutes of August 24, 2017 2. July 2017 and August 2017 Investment Reports 3. Institutional Discretionary Funds 2017-18 Budget Revised and 16-17 Actuals 4. 2016-17 Auxiliary Report 5. 2016-17 Service Enterprise Report 6. Assistant General Counsel Position Request	
	V. Information	
	1. President's Report, *Matthew S. Holland, President* 2. Inclusion Training, *Kyle Reyes, Special Assistant to the President for Inclusion* 3. Open Meetings Act Training, *Karen Clemes, General Counsel* 4. Title IX Training, *Karen Clemes, General Counsel*	

UVU BOARD OF TRUSTEES
Agenda Item Coversheet

DATE:	**October 26, 2016**
TITLE:	**Academic Programs**
EXECUTIVE/RESPONSIBLE STAFF MEMBER:	**Paul Thompson, Chair, Academic Affairs Committee**
SUBJECT:	**Programmatic Approvals**
BACKGROUND:	The Board of Trustees, as outlined in a 2017 Board of Regents policy, now has the responsibility to review the addition, modification, or deletion of programs that are in line with the university's stated mission. In the change-over period between the adoption of the policy and its effective date, confusion occurred over the proper procedure for new programs. Based on directives from the BOR, and as a result of NWCCU calendar requirements and fines, on October 9, 2017, the BOT Executive Committee was asked to reapprove 5 programs approved by the full Board at the June 22, 2017, and August 24, 2017, meetings. The Executive Committee unanimously approved the following: a.) Addition of AS in Health Science b.) Addition of AS in Intelligence Studies c.) Addition of BA in French d.) Addition of BS in Geography e.) Addition of AAS in Automotive Power Sports The Trustees are now being asked to ratify this vote. Additionally, the Trustees are being asked to approve the following degree programs: a.) Addition of BA/BS/Minor in Family Sciences b.) Addition of BS in Mechanical Engineering c.) Addition of BS in Electrical Engineering d.) Addition of BS in Civil Engineering

ALTERNATIVES:	• **Approve** as presented, "I move to approve the ratification of the Executive Committee vote of October 9, 2017, and the addition of the following degree programs: a.) Addition of BA/BS/Minor in Family Sciences b.) Addition of BS in Mechanical Engineering c.) Addition of BS in Electrical Engineering d.) Addition of BS in Civil Engineering" • **Amend** and approve, "I move to approve, as amended…" • **No action**, "I move that we go to the next agenda item…"
FINANCIAL IMPACT:	
EXHIBITS:	A.) BA/BS/Minor in Family Sciences B.) BS in Mechanical Engineering C.) BS in Electrical Engineering D.) BS in Civil Engineering

Utah System of Higher Education
New Academic Program Proposal
Cover/Signature Page - Full Template

Institution Submitting Request:	Utah Valley University
Proposed Program Title:	BA/BS/Minor in Family Science
Sponsoring School, College, or Division:	College of Humanities and Social Science
Sponsoring Academic Department(s) or Unit(s):	Department of Behavioral Science
Classification of Instructional Program Code[1] :	19.0701
Min/Max Credit Hours Required of Full Program:	120 / 120
Proposed Beginning Term[2]:	Fall 2018
Institutional Board of Trustees' Approval Date:	

Program Type (check all that apply):

☐ (AAS)	Associate of Applied Science Degree
☐ (AA)	Associate of Arts Degree
☐ (AS)	Associate of Science Degree
☐	Specialized Associate Degree (specify award type[3]:)
☐	Other (specify award type[3]:)
☒ (BA)	Bachelor of Arts Degree
☒ (BS)	Bachelor of Science Degree
☐	Specialized Bachelor Degree (specify award type[3]:)
☒	Other (specify award type[3]: Minor)
☐ (MA)	Master of Arts Degree
☐ (MS)	Master of Science Degree
☐	Specialized Master Degree (specify award type[3]:)
☐	Other (specify award type[3]:)
☐	Doctoral Degree (specify award type[3]:)
☐	K-12 School Personnel Program
☐	Out of Service Area Delivery Program

Chief Academic Officer (or Designee) Signature:
I, the Chief Academic Officer or Designee, certify that all required institutional approvals have been obtained prior to submitting this request to the Office of the Commissioner.

Jeffery Olson, Senior VP Academic Affairs Date: August 30, 2017

☒ I understand that checking this box constitutes my legal signature.

[1] For CIP code classifications, please see http://nces.ed.gov/ipeds/cipcode/Default.aspx?y=55.
[2] "Proposed Beginning Term" refers to first term after Regent approval that students may declare this program.
[3] Please indicate award such as APE, BFA, MBA, MEd, EdD, JD

Utah System of Higher Education
Program Description - Full Template

Section I: The Request

Utah Valley University requests approval to offer the following Baccalaureate degree(s): BA/BS/Minor in Family Science effective Fall 2018. This program was approved by the institutional Board of Trustees on .

Section II: Program Proposal

Program Description

Present a complete, formal program description.

Family Science is a discipline of study with the primary goals of discovery, verification, and application of knowledge about the family. Focus is placed on the dynamics and structure of families in creating preventative, educational, and, when necessary, clinical interventions for all types of families.

Consistency with Institutional Mission

Explain how the program is consistent with the institution's Regents-approved mission, roles, and goals. Institutional mission and roles may be found at higheredutah.org/policies/policyr312/ .

A new FAMS degree would fit well with the mission of UVU as an engaged teaching university. The family science program has been designed as an engaged learning program. It requires all students to complete two credit hours of internship. It is also recognized as a service-learning program by UVU with many valuable, engaged experiences in the community. The creation of a degree would allow students more opportunities to complete service learning /engaged learning opportunities and research experiences. Additionally, the FAMS degree is one of three programs at UVU that will be available fully online by 2018. Students who move away, have children, or take a job full time may still complete their degree off site from the university – helping increase the institution's degree completion goals.

Section III: Needs Assessment

Program Rationale

Describe the institutional procedures used to arrive at a decision to offer the program. Briefly indicate why such a program should be initiated. State how the institution and the USHE benefit by offering the proposed program.

The Family Studies (FAMS) program at UVU began in 2009 and currently exists as an emphasis in the behavioral science degree with 551 students as of August 2017. The desire of the faculty is to create a standalone major as well as a minor, as has been done with social work and psychology, and change the name to BA/BS/Minor in Family Science to better align with the national organization. The FAMS program closely aligns with the requirements of the National Council on Family Relations (NCFR) and is an approved program for the Certified Family Life Educator (CFLE). In the most recent approval process (Fall 2014), NCFR requested additional changes to the FAMS curriculum to strengthen the overall program. Suggestions included the creation of new FAMS classes, greater exposure to family science content, and refinement of classes offered to provide better preparation for career and graduate school opportunities. The program was approved by NCFR with the promise of these curriculum modifications occurring over the next five years. The creation of a new major would allow the program more flexibility and alignment with the criteria set forth by the program's affiliated national organization.

The minor will allow for students in other departments to take relevant classes to their field. For example, the financial planning program in the Woodbury School of Business at UVU has explored how this minor can supplement their program. Additionally, students who seek knowledge regarding the family can take other majors and still complete a minor.

Labor Market Demand

Provide local, state, and/or national labor market data that speak to the need for this program. Occupational demand, wage, and number of annual openings information may be found at sources such as Utah DWS Occupation Information Data Viewer (jobs.utah.gov/jsp/wi/utalmis/gotoOccinfo.do) and the Occupation Outlook Handbook (www.bls.gov/oco).

A BA/BS/Minor in Family Science provides a myriad of opportunities for career paths in government, educational, nonprofit, legal, and corporate settings. Most importantly, students will develop valuable student learning outcomes, knowledge, and skills they can apply in various fields and contexts. Specifically, students develop the ability to design, write, and teach educational programs for individuals, dyads, and families in family and work environments; the knowledge to preform policy analyses and write fact sheets or policy briefs; the capacity to teach financial literacy and create relevant financial plans for individuals; the understanding of ethical practices in educational, research, clinical settings; the ability to teach and implement successful communication and relationship skills for any relationship; and the capacity to conduct research and program evaluation. These learning outcomes provide students marketable skills in any pursuit they choose.

All students in the degree work with the Strengthening Families Program in service learning and internship opportunities. This program prepares students for educational, home visits, and clinical interventions. This real-world experience provides applied knowledge and practice to implement upon graduation.

The proposed degree would also allow students to select from a terminal career track or a graduate school focus. Students may choose a bachelor's degree emphasizing a career path to move seamlessly into a job after graduation or in preparation for graduate school for advanced training. Within the requirements of the degree, students complete the course requirements for three specific certifications: Certified Family Life Educator (CFLE), Social Service Worker (SSW), and court approved mediator. With the selection of a few classes as electives, students could obtain additional certifications such as recreational therapy technician, substance abuse disorder counselor (SUDC), domestic violence counselor certification, sexual assault certificate advocate, and child life specialist.

Career opportunities with this degree include the following areas: education (e.g., Head Start, Extension, school districts, therapeutic boarding schools), government (e.g., social service worker, WIC) advocacy (e.g., nonprofit agency, grant writing), community (e.g., family life education, career and life coaching), legal (e.g., Mediator, Guardian Ad Litem), healthcare (e.g., Child Life Specialist, residential treatment), and corporate (e.g., human resource, employee assistance program, corporate trainer/consultant). Given the current trends in family life, these opportunities are expanding as society, individuals, and families confront growing difficulties and complexities.

For those wishing to pursue advanced degrees, this degree provides a strong foundation for any counseling degree (e.g., marriage and family, mental health, social work) and unique preparation for other related fields including: school counseling, occupational therapy, school psychologist, recreational

therapy, law, medicine, and business degrees. In this degree, students receive advanced training in theory, research, and clinical interventions.

According to the Utah Department of Workforce Services, the demand for social and human service assistants will be increasing to 3.7% in Utah, almost 70% more than the national average of 2.2%. Over 73% of current FAMS students plan to pursue master's degrees—mostly in clinical fields. According to DWS, the demand for marriage and family therapists is increasing 4.9% in Utah compared to 3.1% nationally; the demand for mental health counselors is increasing 4.1% versus 2.9% nationally; and the demand for clinical, counseling, and school psychologists is increasing 2.5% versus 1.1% nationally. Finally, the Bureau of Labor Statistics (BLS) has reported the demand for marriage and family therapists and mental health counselors is about three times as high as the average for all occupations from 2012-2022. Each of these occupations received four to five stars for growth from the BLS.

According to the EMSI three-County Report, family science positions (CIP 19.07) show a 4.8% increase in positions compared to a 1.8% increase across the nation. Brigham Young University does offer a program with a similar CIP code. According to the EMSI state report, the target occupations for UVU's program show a 3.9% increase compared to a national increase of 1.8%. The state has approximately 535 completions in the CIP code annually.

There were 2,973 job postings in Utah for these specific community and social service positions from May 2014-April 2015. These include both new and existing job positions. Some data highlights:

- Of those with educational requirements, 760 or 80% of jobs in these fields require a bachelor's (38%), master's, or professional degree (41%).
- The top four industry sectors hiring social workers in the past 12 months are (1) health care and social assistance, (2) educational services, (3) public administration, and (4) finance and insurance
- Only 1,081 or 36% of the job postings included salary ranges. Of the data available, the mean salary for these positions = $34,783.
- These occupations have consistent year-over-year job growth increasing one to two percent annually over the past five years.

Student Demand

Provide evidence of student interest and demand that supports potential program enrollment. Use Appendix D to project five years' enrollments and graduates. Note: If the proposed program is an expansion of an existing program, present several years enrollment trends by headcount and/or by student credit hours that justify expansion.

The current Family Studies emphasis in the behavioral sciences degree was created in 2009. Since that time, and as of January 2017, the emphasis has grown to 551 students. Since 2011, the program has averaged 22% over the last five years with increases every year (24%, 8%, 30%, 17%, and 29%). Additionally, the average rate of growth in course enrollments in FAMS classes has been 25% over the last six years. These increases have come at a time when the university enrollment declined and slightly rebounded. In a recent survey of students, over 81% indicated they would prefer a FAMS major over an emphasis in a BESC major. See the growth of the program over a five-year period in the table below. Additionally, the unique student enrollments in classes show growth at rates greater than the number of

FAMS emphasis students only—meaning that the program is popular and serving the needs of other students on campus.

Similar Programs

Are similar programs offered elsewhere in the USHE, the state, or Intermountain Region? If yes, identify the existing program(s) and cite justifications for why the Regents should approve another program of this type. How does the proposed program differ from or compliment similar program(s)?

Utah State: Family, Consumer, and Human Development BS/BA
University of Utah: Human Development and Family Studies BS/BA
Weber State: Family Studies BS
Southern Utah University: Family Life & Human Development BS/BA

During the R401 process, the department chairs at each of these programs were contacted. All of the replies were favorable in support of this program. They agreed that this program would allow greater transferability of students from program to program and greater preparation of UVU students for graduate programs at these institutions.

Additionally, the preparation provided in the new degree will exceed what other similar programs provide. For instance, students in the UVU program obtain certification in two to four nationally recognized FLE curricula. Additionally, UVU students will continue to obtain training in mediation, SSW certification, and other experiences that will give them an advantage over graduates at other programs. Calls have already been received from Weber and Utah State asking about UVU FAMS student's preparation and specific requests for applicants for jobs with USU extension due to their preparation.

Collaboration with and Impact on Other USHE Institutions

Indicate if the program will be delivered outside of designated service area; provide justification. Service areas are defined in higheredutah.org/policies/policyr315/ . Assess the impact the new program will have on other USHE institutions. Describe any discussions with other institutions pertaining to this program. Include any collaborative efforts that may have been proposed.

It is unlikely that the development of a UVU FAMS degree will have an adverse effect on existing FAMS programs in the State. It could, however, provide greater transfer opportunities for students at two-year institutions (i.e., SLCC, Snow) to transfer to UVU, and for graduate programs in MSW, LMFT, and CMHC in the State, inasmuch as students graduating from the UVU FAMS program may apply for admission to these programs.

There will be much opportunity for the UVU FAMS program to collaborate with the FAMS programs of other universities in the State in a wide range of areas including field practicum placements, grants, research, special trainings, and conferences.

External Review and Accreditation

Indicate whether external consultants or, for a career and technical education program, program advisory committee were involved in the development of the proposed program. List the members of the external consultants or advisory committee and briefly describe their activities. If the program will seek special professional accreditation, project anticipated costs and a date for accreditation review.

Although not accredited per se, the program is endorsed and certified as an approved program for the Certified Family Life Educator credential by the National Council on Family Relations. The program was reviewed in December 2014 and reapproved. In that review, the reviewers did ask for additional changes to the program to provide greater depth in two of the ten concentration areas in the discipline. The creation of a major would allow those changes to be made and greatly enhance the education of UVU students. The program will be reviewed again in 2019.

Section IV: Program Details

Graduation Standards and Number of Credits

Provide graduation standards. Provide justification if number of credit or clock hours exceeds credit limit for this program type described in R401-3.11, which can be found at higheredutah.org/policies/R401.

Utah Valley University requires students to complete 120 credit hours in order to graduate. 40 of the 120 credit hours must be 3000 level classes or above. Upon graduation, FAMS students will have completed 35 credit hours of general education courses (three credits of which is FAMS 1150); 18 credit hours of general electives; 42 hours of FAMS core courses; 16-18 credits of one of two specialty tracks; two credit hours of internship and five to seven hours of approved electives. Upon completion of the FAMS program, students will have completed at least 57 upper division credit hours.

Admission Requirements

List admission requirements specific to the proposed program.

None other than the current ones needed to enroll at UVU.

Curriculum and Degree Map

Use the tables in Appendix A to provide a list of courses and Appendix B to provide a program Degree Map, also referred to as a graduation plan.

Section V: Institution, Faculty, and Staff Support

Institutional Readiness

How do existing administrative structures support the proposed program? Identify new organizational structures that may be needed to deliver the program. Will the proposed program impact the delivery of undergraduate and/or lower-division education? If yes, how?

Because the family studies program already exists in the Behavioral Science (BESC) Department as an emphasis in the BESC degree, there would be no new organizational structures needed. Currently, one of the program faculty serves as the program coordinator and reports to the department chair. The current BESC department structure would continue to support the new degree. The new program would increase course offerings in the FAMS area, including live and online classes, but over 85% of the courses needed for the major and minor are already being offered in the current degree.

Faculty

Describe faculty development activities that will support this program. Will existing faculty/instructions, including teaching/ graduate assistants, be sufficient to instruct the program or will additional faculty be recruited? If needed, provide plans and resources to secure qualified faculty. Use Appendix C to provide detail on faculty profiles and new hires.

All current full-time faculty (four) will teach exclusively for the major/minor. Given the continued growth of students in the current emphasis and additional classes required for the major, two additional tenure track faculty will be needed. In the first year, the program will need a tenure-track position to provide depth in family dynamics, theory, human sexuality, or other family studies areas; to serve as a faculty internship coordinator; and to create student research opportunities. In year two, one tenure-track faculty is needed to provide faculty expertise in human development and to create more student-faculty research opportunities. A strong emphasis will be placed on hiring diverse candidates through the National Council on Family Relations. This organization has contact with every major doctoral program in the discipline and facilitates the hiring of qualified candidates for family programs in higher education institutions.

Staff

Describe the staff development activities that will support this program. Will existing staff such as administrative, secretarial/ clerical, laboratory aides, advisors, be sufficient to support the program or will additional staff need to be hired? Provide plans and resources to secure qualified staff, as needed.

The FAMS program would request the addition of one part-time staff member (20 hours) to help with the administration of the Strengthening Families Program, mediation, and internships. This staff member would coordinate with schools, principals, and others to ensure that these programs are able to run efficiently. They would also ensure that materials/paperwork are prepared for the programs. With the internship requirement for the FAMS emphasis area, enrollments in internship have increased to 50-65 interns each semester. These students are enrolled in eight different sections of internship (varying from one to three credits) and one section of an internship seminar. The faculty need this coordinator to allow them to focus more on teaching.

Student Advisement

Describe how students in the proposed program will be advised.

Students in the new major would be advised by the same BESC advisors as they currently are in the FAMS emphasis in the BESC degree. Students will be encouraged to meet with their advisors a minimum of once a year to ensure that they are progressing satisfactorily.

Library and Information Resources

Describe library resources required to offer the proposed program if any. List new library resources to be acquired.

The focus of the UVU Library is to support the educational programs on campus. Librarians solicit recommendations from family science faculty for new materials to ensure that collections meet program objectives and requirements. Faculty teaching courses with a research component may schedule an instruction session with a librarian for their class, where students learn the information literacy skills needed to effectively find and use information resources related to their discipline.

Determining the precise number of books and videos in the collection relevant to the study of family science can be problematic due to overlapping subject areas. The library currently has 430 book and media titles with the subject heading Families, 185 titles with the subject heading Marriage, 308 titles with the subject Parenting, and 327 titles with the subject Family Therapy or Family Counseling. The library currently has 10,003 titles with the subject heading of Psychology and 2,595 on Sociology, with 817 titles specifically related to Social Psychology and 297 related to Developmental Psychology. Books specifically on the study of the family fall in the call numbers range HQ1-2044. Psychology titles in the library are located at call numbers BF1-1389, BL51-65, GN502-517, R726.5-726.8, RA790-790.95, RC321-571, and RJ499-507. Sociology titles are located at HM1-1281, HN1-995, and HT51-1595. The library's Films on Demand and Kanopy video streaming platforms both include Psychology and Sociology video collections.

Library databases useful for researching family science topics include PsycARTICLES, PsycINFO, Psychology & Behavioral Sciences Collection, Sociological Collection, Social Science Research Network, GenderWatch, Sage Online, ScienceDirect, JSTOR, and Project Muse. Off-campus access by proxy server is available for all databases. The library subscribes to roughly 917 journals related to psychology, 810 related to sociology, and 40 specifically on family science. Major family science journals that the library subscribes to include:
Journal of Marriage and Family
Family Relations
Journal of Family Psychology
Journal of Family Issues
Family Process
Journal of Personality and Social Psychology
Personality and Social Psychology Review
Journal of Marital and Family Therapy
Personal Relationships
Journal of Social and Personal Relationships
American Sociological Review

Projected Enrollment and Finance
Use Appendix D to provide projected enrollment and information on related operating expenses and funding sources.

Section VI: Program Evaluation

Program Assessment
Identify program goals. Describe the system of assessment to be used to evaluate and develop the program.

Upon successful completion of the proposed FAMS degree, students will be able to:
(1) Create educational interventions for individuals and families.
(2) Demonstrate knowledge and skill related to the ten areas outlined for Certified Family Life Educators by the National Council on Family Relations (see below for Student Standards of Performance).
(3) Apply best practices for communication and conflict management in interpersonal relationships and family systems.
(4) Demonstrate the ability to work with diverse populations and under served communities.

The proposed FAMS program will use multiple assessment measures to evaluate progress toward each program goal. Assessment outcomes and measures are designed:
(5) to ensure that the program's curriculum reflects current best practices and the knowledge base of family studies and related disciplines.
Assessment Measure: Successful external reviews from the National Council on Family Relations to ensure the UVU FAMS program remains on their list of approved programs for the CFLE.
(6) to provide opportunities for students to develop inquisitive, open-minded, and critical thinking approaches to gaining knowledge and understanding.
Assessment Measure: Research internship evaluations and other research experiences, CFLE exit exam.
(7) to work collaboratively with students and community entities to develop and disseminate family studies knowledge.
Assessment Measure: Strengthening Families/Community internship evaluations.
(8) to help students gain an understanding of and a commitment to adhere to the NCFR Code of Ethics.
Assessment measure: FAMS 2705 Ethics in Family Science assignment, CFLE exit exam.
(5) to work collaboratively with students and community entities to develop and disseminate family science knowledge.
Assessment measure: FAMS 4500 FLE Methodology curriculum, FAMS 482R Strengthening Families Internship.

Student Standards of Performance

List the standards, competencies, and marketable skills students will have achieved at the time of graduation. How and why were these standards and competencies chosen? Include formative and summative assessment measures to be used to determine student learning outcomes.

The National Council on Family Relations has set out ten content areas or competencies for Family Life Education (see below). The FAMS degree will be built and based around these ten content areas. Assessment measures include specific course assignments, course exams, the CFLE Exit Exam, and internship evaluations. Some standards will be assessed in specific classes each semester, and all ten will be evaluated by the CFLE Exit Exam. These standards/competencies, along with the assessment measures that will be used to evaluate each, are as follows:
1. Families in Social Contexts - An understanding of families and their relationships to other institutions, such as the educational, governmental, religious, healthcare, and occupational institutions in society.
2. Internal Dynamics of Families - An understanding of family strengths and weaknesses and how family members relate to each other.
3. Human Growth and Development across the Lifespan - An understanding of the developmental changes (both typical and atypical) of individuals in families throughout the lifespan. Based on knowledge of physical, emotional, cognitive, social, moral, and personality aspects.
4. Human Sexuality - An understanding of the physiological, psychological, & social aspects of sexual development throughout the lifespan, so as to achieve healthy sexual adjustment.
5. Interpersonal Relationships - An understanding of the development and maintenance of interpersonal relationships.
6. Family Resource Management - An understanding of the decisions individuals and families make about developing and allocating resources including time, money, material assets, energy, friends, neighbors,

and space to meet their goals.
7. Parent Education and Guidance - An understanding of how parents teach, guide, and influence children and adolescents as well as the changing nature, dynamics, and needs of the parent/child relationship across the lifespan.
8. Family Law and Public Policy - An understanding of legal issues, policies, and laws influencing the well being of families.
9. Professional Ethics and Practice - An understanding of the character and quality of human social conduct, and the ability to critically examine ethical questions and issues as they relate to professional practice.
10. Family Life Education Methodology - An understanding of the general philosophy and broad principles of family life education in conjunction with the ability to plan, implement, and evaluate such educational programs.

Appendix A: Program Curriculum

List all courses, including new courses, to be offered in the proposed program by prefix, number, title, and credit hours (or credit equivalences). Indicate new courses with an X in the appropriate columns. The total number of credit hours should reflect the number of credits required to be awarded the degree.

For variable credits, please enter the minimum value in the table for credit hours. To explain variable credit in detail as well as any additional information, use the narrative box at the end of this appendix.

	Course Number	NEW Course	Course Title	Credit Hours
	General Education Courses (list specific courses if recommended for this program on Degree Map)			
			General Education Credit Hour Sub-Total	35
	Required Courses			
+ -			Complete ALL of the following:	
+ -	FAMS 101G		Contemporary Families	3
+ -	BESC 3020		Research Methods for the Behavioral Sciences	3
+ -			Family Science Core	
+ -	FAMS 1100		Lifespan Development in the Family	3
+ -	FAMS 2705		Ethics for Family Interventions	3
+ -	FAMS 2800		Teaching Human Sexuality	3
+ -	FAMS 3250		Applied Parenting	3
+ -	FAMS 3800		Early Development in Families	3
+ -	FAMS 3850		Adult Development and Aging	3
+ -	FAMS 4400		Family Policy	3
+ -	FAMS 4500		Family Life Education Methodology	3
+ -	FAMS 4660		Family Financial and Resource Management	3
+ -	FAMS 4670		Family Dynamics and Systems	3
+ -	FAMS 4680		Family Theory	3
+ -			Internship Requirement	2
+ -	FAMS 482R		Strengthening Families Internship (1.0)	
+ -	FAMS 481R Or 483R		Senior Internship (1.0) or Research Internship (1.0)	
+ -			Complete ONE of the tracks	26
+ -			Social Service Worker/Mediation Specialization Track (26.0)	
+ -	SW 1010		Intro to Social Work (3.0)	
+ -	SW 3000		Social Work Practice I (3.0)	
+ -	SOC 1020 Or SW 35		Modern Social Problems (3.0) or Social Welfare Policies and	
+ -			Mediation Specialization: Complete all 3	
+ -	FAMS 3410		Fundamentals of Mediation and Negotiation (3.0)	
+ -	FAMS 4300		Family Dispute Resolution (3.0)	
+ -	FAMS 4200		Advanced Mediation and Negotiation (3.0)	
+ -			Electives: Students need to complete 8 hours of electives in BESC	
+ -			Graduate School Track (26.0)	
+ -	PSY 1010		General Psychology (3.0)	
+ -	PSY 3400		Abnormal Psychology (3.0)	
+ -	FAMS 4700		Introduction to Marriage and Family Therapy (3.0)	
+ -	BESC 3010		Statistics for the Behavioral Sciences (4.0)	

		Course Number	NEW Course	Course Title	Credit Hours
+	-			Complete ONE of the following:	
+	-	FAMS 4040		Secondary Data Analysis (3.0)	
+	-	Or SOC 4020		Survey Research Design (3.0)	
+	-	Or BESC 4040		Applied Behavioral Science Research (3.0)	
+	-			Electives: Students need to complete 10 hours of elective credit of	
				Add A Group of Courses	
				Required Course Credit Hour Sub-Total	67
		Elective Courses			
+	-			Any Course numbered 1000 or higher	18
				Add A Group of Courses	
				Elective Credit Hour Sub-Total	18
				Core Curriculum Credit Hour Sub-Total	120

Add An Emphasis

Program Curriculum Narrative

Describe any variable credits. You may also include additional curriculum information.

All of the new courses have already been proposed for either the 2016 or 2017 catalog. There are only three new courses (FAMS 4600, 4680, 483R). The remaining courses already exist in the department and are being cross listed with existing classes or reclassified to the FAMS area (FAMS 1100, 2705, 2800, 3410, 3800, 3850, 4040, and 4200).

The BA will have one more GE credit for a total of 36 as Language/Humanities credit for BA is 4. To offset this, it will have only 17 electives instead of 18, 12 of which will be in the same foreign language as the humanities GE chosen.
The Minor will be as follows:

Minor
Required Course
FAMS 101G Contemporary Families 3.0
Elective Courses:Select five classes from the following list:
FAMS 1100 Life Span Development in the Family 3.0
FAMS 1150 Marriage and Relationship Skills 3.0
FAMS 3250 Applied Parenting 3.0
FAMS 3800 Early Development in Families 3.0
FAMS 3850 Adult Development and Aging 3.0
FAMS 4660 Family Finance and Resource Management 3.0
FAMS 4670 Family Dynamics and Systems 3.0

Total Number of Credit 18.0

Degree Map

Degree maps pertain to undergraduate programs ONLY. Provide a degree map for proposed program. Degree Maps were approved by the State Board of Regents on July 17, 2014 as a degree completion measure. Degree maps or graduation plans are a suggested semester-by-semester class schedule that includes prefix, number, title, and semester hours. For more details see http://higheredutah.org/pdf/agendas/201407/TAB%20A%202014-7-18.pdf (Item #3).

Please cut-and-paste the degree map or manually enter the degree map in the table below.

Toggle Cut-and-Paste | Toggle Table

First Year Fall	Cr. Hr.	First Year Spring	Cr. Hr.
ENGL 1010 Introduction to Writing	3	ENGL 2020 Intermediate Writing	3
Quantitative Literacy	3	SW 1010 Introduction to Social Work	3
FAMS 101G Contemporary Families	3	Fine Arts	3
Elective Any course 1000 or higher	3	Language or Elective	4
Language or Elective	4	HLTH 1100 or PES 1097	2
Add Courses **Total**	16	**Total**	15
Second Year Fall	**Cr. Hr.**	**Second Year Spring**	**Cr. Hr.**
PHIL 2050 Ethics and Values	3	Biology	3
FAMS 1150 (Take as GE) Marriage and Relatio	3	American Institution	3
Language or Elective	4	Language/Humanities	4
Physical Science	3	FAMS 2705 Ethics for Family Interventions	3
FAMS 1100 Life Span Development in the Famil	3	FAMS 2800 Teaching Human Sexuality	3
Add Courses **Total**	16	**Total**	16
Third Year Fall	**Cr. Hr.**	**Third Year Spring**	**Cr. Hr.**
Third Science 2nd Biology or 2nd Physical Scie	3	FAMS 3850 Adult Development and Aging	3
FAMS 3250 Applied Parenting	3	FAMS 4500 Family Life Education Methodology	3
FAMS 3800 Early Development in Families	3	SOC 1020 or SW 3500 Mod Social Problems or	3
FAMS 4400 Family Policy	3	FAMS 3410 Fundamentals of Mediation and Ne	3
FAMS 4670 Family Dynamics and Systems	3	BESC 3100 (BESC Elect) Career & Graduate Sc	3
Add Courses **Total**	15	**Total**	15
Fourth Year Fall	**Cr. Hr.**	**Fourth Year Spring**	**Cr. Hr.**
FAMS 4680 Family Theory	3	FAMS 481R or 483R Senior Internship or Senio	1
FAMS 482R Strengthening Families Internship	1	FAMS 4200 Advanced Mediation and Negotiatio	3
SW 3000 Social Work Practice I	3	FAMS 4660 Family Financial and Resource Ma	3
FAMS 4300 Family Dispute Resolution	3	FAMS 4600 (BESC Elect) Relationship Educatio	3
BESC 3020 Research Methods for the Behavior	3	BESC Elective Any course in BESC, PSY, SW, A	2
Elective Any course 1000 or higher	2		
Add Courses **Total**	15	**Total**	12

Appendix C: Current and New Faculty / Staff Information

Part I. Department Faculty / Staff

Identify # of department faculty / staff (headcount) for the year preceding implementation of proposed program.

	# Tenured	# Tenure -Track	# Non -Tenure Track
Faculty: Full Time with Doctorate	14		12
Faculty: Part Time with Doctorate			10
Faculty: Full Time with Masters		4	
Faculty: Part Time with Masters		47	
Faculty: Full Time with Baccalaureate			
Faculty: Part Time with Baccalaureate			7
Teaching / Graduate Assistants			
Staff: Full Time			2
Staff: Part Time			

Part II. Proposed Program Faculty Profiles

List current faculty within the institution -- with academic qualifications -- to be used in support of the proposed program(s).

	First Name	Last Name	Tenure (T) / Tenure Track (TT) / Other	Degree	Institution where Credential was Earned	Est. % of time faculty member will dedicate to proposed program.	If "Other," describe
Full Time Faculty							
	Jeremy	Boden	TT	PhD	Texas Tech	100%	
	Nathan	Cottle	T	PhD	University of Texas	100%	
	Elizabeth	Fawcett	TT	PhD	BYU	100%	
	Rich	Hydo	Lecturer	MSW/MBA	Texas A&M	100%	
	Julie	Nelson	Lecturer	MS	Utah State	100%	
	Grant	Richards	T	PhD	BYU	100%	
							Add Another Full Time
Part Time Faculty							
	Jerevie	Canlas	Adj	PhD	BYU		
	Kathryn	Robinson	Adj	MSW	BYU		
	Lucy	Shirisia	Adj	MS	Utah State		
	Michael	Snapp	Adj	MS	Utah		
	Lori	Duke	Adj	MS	Argosy		
	Tyler	Stark	Adj	MS	Uni of Phoenix		
	Sherry	Cowen	Adj	PhD	BYU		
	LeAnn	Glade	Adj	JD	BYU		
	Sandi	Ness	Adj	MSW/JD	UofU		
	Kindra	Heilpren	Adj	MSW	North Carolina		
	Sarah	Hunter	Adj	MSW	Utah		
							Add Another Part Time

Part III: New Faculty / Staff Projections for Proposed Program

Indicate the number of faculty / staff to be hired in the first three years of the program, if applicable. Include additional cost for these faculty / staff members in Appendix D.

	# Tenured	# Tenure -Track	# Non -Tenure Track	Academic or Industry Credentials Needed	Est. % of time to be dedicated to proposed program
Faculty: Full Time with Doctorate		2		PhD	100%
Faculty: Part Time with Doctorate					
Faculty: Full Time with Masters					
Faculty: Part Time with Masters					
Faculty: Full Time with Baccalaureate					
Faculty: Part Time with Baccalaureate					
Teaching / Graduate Assistants					
Staff: Full Time					
Staff: Part Time			1		100%

Appendix D: Projected Program Participation and Finance

Part I.

Project the number of students who will be attracted to the proposed program as well as increased expenses, if any. Include new faculty & staff as described in Appendix C.

Three Year Projection: Program Participation and Department Budget						
	Year Preceding Implementation	New Program				
		Year 1	Year 2	Year 3	Year 4	Year 5
Student Data						
# of Majors in Department	2,086	2,116	2,146	2,176	3,006	3,036
# of Majors in Proposed Program(s)		460	490	520	540	550
# of Graduates from Department	407	407	417	427	437	437
# Graduates in New Program(s)		90	100	100	110	110
Department Financial Data						
	Department Budget					
	Year Preceding Implementation (Base Budget)	Year 1 Addition to Base Budget for New Program(s)	Year 2 Addition to Base Budget for New Program(s)	Year 3 Addition to Base Budget for New Program(s)		
Project additional expenses associated with offering new program(s). Account for New Faculty as stated in Appendix C, "Faculty Projections."						
EXPENSES – nature of additional costs required for proposed program(s)						
List salary benefits for additional faculty/staff each year the positions will be filled. For example, if hiring faculty in year 2, include expense in years 2 and 3. List one-time operating expenses only in the year expended.						
Personnel (Faculty & Staff Salary & Benefits)	$3,329,672	$124,336	$185,321	$185,321		
Operating Expenses (equipment, travel, resources)	$89,216	$5,000	$9,000	$9,000		
Other:						
TOTAL PROGRAM EXPENSES		$129,336	$194,321	$194,321		
TOTAL EXPENSES	$3,418,888	$3,548,224	$3,613,209	$3,613,209		
FUNDING – source of funding to cover additional costs generated by proposed program(s)						
Describe internal reallocation using Narrative 1 on the following page. Describe new sources of funding using Narrative 2.						
Internal Reallocation						
Appropriation	$3,418,888					
Special Legislative Appropriation						
Grants and Contracts						
Special Fees						
Tuition		$212,960	$222,640	$242,000		
Differential Tuition (requires Regents approval)						
PROPOSED PROGRAM FUNDING		$212,960	$222,640	$242,000		
TOTAL DEPARTMENT FUNDING	$3,418,888	$3,631,848	$3,641,528	$3,660,888		
Difference						
Funding - Expense	$0	$83,624	$28,319	$47,679		

Part II: Expense explanation

Expense Narrative

Describe expenses associated with the proposed program.

Expenses for this program include the addition of two tenure-track faculty and one part time staff member. With the projected enrollments, this program results in a net increase in revenue each first 3 years and does not require any additional expenses in year 4 and 5.

Part III: Describe funding sources

Revenue Narrative 1

Describe what internal reallocations, if applicable, are available and any impact to existing programs or services.

The proposed program does not involve the reallocation of funds.

Revenue Narrative 2

Describe new funding sources and plans to acquire the funds.

The primary sources of funding for the FAMS program will be student tuition and other departmental monies. Monies from the department will be shifted from the bachelor's degree in Behavioral Science – FAMS emphasis to the new FAMS program.

Utah System of Higher Education
New Academic Program Proposal
Cover/Signature Page - Full Template

Institution Submitting Request: Utah Valley University

Proposed Program Title: BS in Mechanical Engineering
Sponsoring School, College, or Division: Technology and Computing
Sponsoring Academic Department(s) or Unit(s): Engineering Technology
Classification of Instructional Program Code: 14.1901
Min/Max Credit Hours Required to Earn Degree: 126
Proposed Beginning Term: Fall 2018
Institutional Board of Trustees' Approval Date:

Program Type (check all that apply):

☐	Associate of Applied Science Degree (AAS)
☐	Associate of Arts Degree (AA)
☐	Associate of Science Degree (AS)
☐	Specialized Associate Degree (specify award type)
☐	Other (specify award type)
☐	Bachelor of Arts Degree (BA)
☑	Bachelor of Science Degree (BS)
☐	Professional Bachelor Degree (specify award type)
☐	Other (specify award type)
☐	Master of Arts Degree (MA)
☐	Master of Science Degree (MS)
☐	Professional Master Degree (specify award type)
☐	Other (specify award type)
☐	Doctoral Degree (specify award type)
☐	K-12 School Personnel Program
☐	Out of Service Area Delivery Program

Chief Academic Officer (or Designee) Signature:
I, the Chief Academic Officer or Designee, certify that all required institutional approvals have been obtained prior to submitting this request to the Office of the Commissioner.
Signature: **Date:**

Utah System of Higher Education
Program Description - Full Template

Section I: The Request

The Engineering Technology Department in the College of Technology and Computing at Utah Valley University requests approval to offer the Bachelor of Science in Mechanical Engineering effective Fall 2018.

Section II: Program Proposal

Program Description

Mechanical engineering, which has evolved over the years as new technologies have emerged, is one of the broadest engineering disciplines. The Bachelor of Science in Mechanical Engineering prepares graduates to apply mathematical and scientific principles to the design, development, testing, and manufacturing of machines, robots, tools, biomedical devices, power generating equipment such as steam and gas turbines, wind turbines, solar systems, internal combustion engines, and heating, cooling, and refrigeration equipment.

The proposed BS in Mechanical Engineering (BSME) will provide combined classroom and laboratory components and will prepare students to work for local, state, and federal governments; biomedical and aerospace fields; manufacturing sectors; consulting firms; transportation industry; and high tech and energy sectors. The program will also prepare students for further studies at the graduate level should they decide to do so.

Consistency with Institutional Mission

The mission statement of Utah Valley University reads: "Utah Valley University is a teaching institution which provides opportunity, promotes student success, and meets regional educational needs. UVU builds on a foundation of substantive scholarly and creative work to foster engaged learning. The University prepares professionally competent people of integrity who, as lifelong learners and leaders, serve as stewards of a globally interdependent community." The BSME program fits well into UVU's mission by meeting the educational needs of the region. It also augments the existing STEM offerings at UVU. The proposed program will increase the number of engineering graduates needed in the region to address the projected economic growth and development along the Wasatch Front. Moreover, the BSME program will prepare professionally competent people of integrity by following the curriculum guidelines of ABET and the American Society of Mechanical Engineers (ASME) code of ethics. The proposed program will further strengthen existing industrial relationships and create new partnerships as well.

Section III: Needs Assessment

Program Rationale

Utah County is one of the fastest growing regions in the State and home to a growing number of technology companies. To support this growth, it becomes necessary to have a steady supply of highly educated people in technology fields and engineering. Due to the growth of high-tech industry along the Wasatch Front, studies have shown that the demand for computer scientists and all types of engineers has increased by nearly three-fold in the past ten years. The technology companies surveyed by the Utah Technology Council have emphasized their struggle to find

qualified candidates to fill positions and have stated that they often need to go out-of-state to recruit all types of engineers including mechanical. These results suggest that the growing need for engineers and computer scientists in Utah is not being fulfilled by the two major public institutions in the state (i.e., University of Utah and Utah State University). The lack of having enough graduates with mechanical engineering backgrounds could lead to the departure of some companies and preclusion of others to consider Utah for expansion or establishment of their enterprises.

There is a high demand for engineering graduates. They play vital roles in the growth of the high tech sector and are essential in Utah's growing economy. UVU currently has a computer engineering program that meets part of this need. However, there are still considerable needs for civil, electrical, and mechanical engineers. The proposed BSME program would complement the existing computer engineering program and provide additional, desperately needed engineers along the Wasatch Front. The UVU engineering programs (civil, electrical, mechanical) will also enhance the position of the State of Utah by providing an attractive environment for high technology industries.

Labor Market Demand

UVU is proposing to develop a mechanical engineering program to address a critical shortage of engineers in the State. The Bureau of Labor Statistics (BLS), as a part of its long-term (2014-2024) forecast, projects a national growth rate of 5.3% for mechanical engineers with similar estimates for Utah. According to the BLS, the annual mean wage for mechanical engineers in Utah is $82,010, which is significantly higher than the Utah median wage of $33,990. Moreover, according to data provided by UVU Institutional Research & Information (IRI) Center, as of June 7, 2017, there were 766 openings for mechanical engineers and a supply of only 532 graduates, resulting in a shortage of 234 unfilled positions in Utah (Source: Economic Development and Employer Planning System (EDEPS)).

Student Demand

During 2014-2016, the number of students with majors in pre-engineering at UVU increased by 17% (From 369 to 432; approximately an addition of 32 students per year). The pre-engineering program at UVU has been serving as feeder program to the engineering programs at the University of Utah, Utah State University, BYU, and other institutions.

Since Utah Valley University does not offer any BS degrees in civil, electrical, and mechanical engineering, a study was conducted to determine how many UVU pre-engineering students transfer to other universities to seek these degrees. The IRI Center at UVU submitted the names of 998 students who majored in pre-engineering or engineering technology programs between Fall 2009 and Fall 2014 but had not graduated from UVU to the National Student Clearinghouse (NSC). The NSC is a nonprofit, trusted organization that partners with the higher education community to provide verification and reporting services to most of the postsecondary institutions in the US. The National Student Clearinghouse found that 333 students or 33% of UVU pre-majors had transferred to other institutions to complete their engineering degrees; it is unclear what happened to the remaining 67%.

Several surveys of UVU students have demonstrated a high demand for engineering programs at UVU. An informal survey of more than 100 pre-engineering students at UVU conducted Spring 2012 indicated significant student demand for upper division engineering courses. Of those who responded, 87% of pre-engineering students would be interested in taking upper division courses to graduate from UVU with a Bachelor of Science in Engineering. An additional survey of student

opinion was also conducted in Fall 2016 by UVU's IRI Center. Included in this survey was the question: "Is there a major or degree that you are interested in that UVU doesn't offer?" Of the 877 respondents, 254 respondents indicated "Yes," and specified the programs they would like UVU to offer. Of responses with the highest frequencies, engineering was the 2nd most desired bachelor program currently not offered at UVU. From this representative student survey, UVU's IRI estimated that of the 19,469 non-high school, bachelor degree seeking students at UVU in Fall 2016, four percent or 779 undergraduates would possibly be interested in majoring in a Bachelor of Science in Engineering. Finally, in April 2017, a survey asked the pre-engineering students who were about to finish their AS degree, a simple question: "If UVU were to offer other engineering programs, besides computer engineering, would you be interested in completing your engineering degree at UVU?" Seventy-nine students participated in the survey and all (100%) answered "Yes" to the question. The results of the survey show that students who are already here in the pre-engineering program prefer not to transfer to another institution to complete their degrees in mechanical engineering. Having a BSME program at UVU reduces the disruptions that normally occur when non-traditional students transfer to another institution. The continuity would also allow for a greater success in graduation rate.

Similar Programs

The mechanical engineering programs offered by the University of Utah and Utah State University were carefully examined. The core of these programs are similar to the proposed BSME program. Whereas, the enrollment at the University of Utah and USU are made up of mostly traditional students, UVU's enrollment consists of mostly non-traditional students. As mentioned in the previous section, surveys conducted by UVU show that students who are already at UVU in the pre-engineering program prefer not to transfer to another institution to complete their degrees. This preference is due to the need to avoid disruptions that occur in the lives of the non-traditional students who are married with children and live and work in the area; for example, transferring to the University of Utah would require them to commute to Salt Lake City. The cost of fuel or public transportation, traffic, time commitment, and weather are reasons for not wanting to commute every day. Moreover, the majority of these students cannot get accepted to BYU because of the BYU's relatively high admission standards for transfer students.

The cost of adding the BSME program at UVU is relatively small; only two additional faculty members are needed (one of which will be funded by the Engineering Initiative); the existing laboratory facilities in the College of Technology and Computing are sufficient to accommodate new engineering programs in civil, electrical, and mechanical engineering. With this relatively low cost, UVU will be positioned to better serve the needs of the local student population, especially, non-traditional students.

Collaboration with and Impact on Other USHE Institutions

The Dean of UVU's College of Technology and Computing has met with the Dean of the College of Engineering at the University of Utah and has discussed UVU's engineering program proposals and the rationale for their offerings. UVU will continue to collaborate with the University of Utah to send students who are interested in bioengineering, chemical engineering, materials science and engineering, or other fields to complete their degrees. Additionally, the University of Utah places a great deal of focus on research. As a result, among UVU's BSME program objectives are the need to prepare students for further studies at the graduate level, particularly, at the University of Utah should they decide to do so. At the time this proposal was being prepared, Utah State University was searching for a dean for the College of Engineering, consequently, UVU's Dean of Technology and Computing did not reach out to USU.

External Review and Accreditation

UVU has formed an advisory board to review the proposed mechanical engineering program and to provide feedback. The proposed BSME program is designed to meet the ABET accreditation requirements. The program will seek ABET accreditation in 2020, after it has produced its first graduates. ABET has eight General Criteria that must be met. The eight General Criteria cover: 1) Students; 2) Program Educational Objectives; 3) Student Outcomes; 4) Continuous Improvement; 5) Curriculum; 6) Faculty; 7) Facilities; and 8) Institutional Support. For example, Criterion 2 (Program Educational Objectives) specifically requires that all engineering programs including mechanical:

- Provide the institutional mission statement,
- List the program educational objectives and state where these can be found by the general public,
- Describe how the program educational objectives are consistent with the mission of the institution,
- List the program constituencies. Describe how the program educational objectives meet the needs of these constituencies,
- Describe the process that periodically reviews the program educational objectives including how the program's various constituencies are involved in this process. Describe how this process is systematically utilized to ensure that the program's educational objectives remain consistent with the institutional mission, the program constituents' needs and these criteria.

As another example, ABET's Criterion 3 (Student Outcomes) requires that the program:

- List the student outcomes for the program and indicate where the student outcomes are documented. The proposed BSME program will use the following ABET's Student Outcomes (a) through (k). These outcomes are used for all engineering disciplines including mechanical engineering. After completing the BSME program, students will have:

    a. an ability to apply knowledge of mathematics, science, and engineering
    b. an ability to design and conduct experiments, as well as to analyze and interpret data
    c. an ability to design a system, component, or process to meet the desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturing, and sustainability
    d. an ability to function on multi-disciplinary teams
    e. an ability to identify, formulate, and solve engineering problems
    f. an understanding of professional and ethical responsibility
    g. an ability to communicate effectively
    h. the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
    i. a recognition of the need for, and the ability to engage in life-long learning
    j. a knowledge of contemporary issues
    k. an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
- Describe how the student outcomes prepare graduates to attain the program educational objectives. (The BSME program education objectives are shown at the end of this proposal under the heading of Program Assessment/Program Objectives)

Furthermore, ABET requires that each engineering program must have an assessment process with documented results. Evidence must be given that the results are applied to the further development and improvement of the program. The assessment process must demonstrate that the outcomes important to the mission of the institution and the objectives of the program, including those listed above, are being measured. Evidence that may be used includes, but is not limited to the following: student portfolios, including design projects; nationally-normed subject content examinations; alumni surveys that document professional accomplishments and career development activities; employer surveys; and placement data of graduates.

As mentioned previously, the proposed BSME program presented in this document has been designed to meet the ABET requirements and the goals and objective statements have been derived with that intent. The present Dean of the College of Technology and Computing is a registered licensed engineer with extensive ABET accreditation experience. He will work closely with the faculty to ensure that all ABET accreditation criteria are met. Furthermore, the existing Computer Engineering program at UVU is already ABET accredited; the proposed BSME program will follow the computer engineering program's model of assessment.

Section IV: Program Details

Graduation Standards and Number of Credits

1. Completion of a minimum of 126 semester credits, with a minimum of 40 mechanical engineering upper-division credits.
2. Overall grade point average of 2.5 or above, with a minimum grade of C in all discipline core and elective requirements.
3. Residency hours - minimum of 30 credit hours through course attendance at UVU. Ten of these hours must be within the last 45 hours earned. At least 12 of the credit hours earned in residence must be in approved ME courses.
4. All transfer credits must be approved in writing by UVU and the mechanical engineering program coordinator.
5. No more than 80 semester hours and no more than 20 hours in ME courses of transfer credit.
6. No more than 6 semester hours may be earned through independent study.
7. Successful completion of at least one Global/Intercultural course.

Admission Requirements

To be admitted to the BSME program, a student must complete the foundation courses in Mathematics (MATH 1210, 1220, 2210, 2250); Physics (PHYS 2210, 2215, 2220, 2225); Chemistry (CHEM 1210, 1215); English (ENGL 1010, 2010); Engineering (ENGR 1000, 2010, 2030, 2140, 2160, 2450); and Three Dimensional Modeling (EGDT 1070) with a minimum grade of C in these courses and grade point average of 2.5 or above. A student not meeting all of the admission requirements, may request in writing, a provisional admission status for a semester from the department. The provisional admission status must be approved by the mechanical engineering program coordinator.

Curriculum and Degree Map

Program Curriculum:

Course Number	New Course	Course Title	Credit Hours
General Education Courses			
ENGL 1010		Introduction to Writing	3
ENGL 2010		Intermediate Writing	3
MATH 1210		Calculus I	5
American Institutions: Student will complete one of the following:			3
HIST 2700		US History to 1877	
HIST 2710		US History since 1877	
HIST 1700		American Civilization	
HIST 1740		US Economic History	
POLS 1000		American Heritage	
POLS 1100		American National Government	
Student will complete the following:			
PHIL 2050		Ethics and Values	3
HLTH 1100		Personal Health and Wellness	2
Or PES 1097		Fitness for Life (2.0)	
Distribution Courses:			
COMM 1020		Public Speaking	3
COMM 2110		Interpersonal Communications	3
Fine Arts (choose from the list)+			3
Biology (choose from the list)+			3
PHYS 2210		Physics for Scientist and Engineer I	4
CHEM 1210		Principles of Chemistry I	4
General Education Subtotal:			39
+ see published computer engineering list of GE			
Required Courses			
CHEM 1215		Principles of Chemistry I Laboratory	1
ECE 2250		Circuit Theory	3
ENGR 1030		Engineering Programming	3
ENGR 1000		Introduction to Engineering	3
ENGR 2010		Engineering Statics	3
ENGR 2030		Engineering Dynamics	3
ENGR 2140		Mechanics of Materials	3
ENGR 2160		Introduction to Materials Science and Engineering	3
ENGR 2300		Engineering Thermodynamics	3
ENGR 2450		Computational Methods for Engineering Analysis	3
MATH 1220		Calculus II	5
MATH 2250		Differential Equations and Linear Algebra	4
MATH 2210		Calculus III	3

ME 3010	X	Linear Systems	3
ME 3140	X	Machine Design	3
ME 3210	X	Manufacturing Processes for Engineers	3
ME 3310	X	Fluid Mechanics	3
ME 3320	X	Heat Transfer	3
ME 3335	X	Thermal/Fluid Experimentation	2
ME 4010	X	Automatic Controls	3
ME 4015	X	Control/Vibration Experimentation	2
ME 4410	X	Computer Aided Engineering	3
ME 4510	X	Mechanical Engineering Seminar	1
ME 4810	X	Capstone I	3
ME 4820	X	Capstone II	3
PHYS 2215		Physics for Scientists and Engineers Lab	1
PHYS 2220		Physics for Scientists and Engineers II	4
PHYS 2225		Physics for Scientists and Engineers II Lab	1
Required Course Credit Hour Sub Total:			78
Elective Courses (**9 credit-hours are required**; **one course may be taken from Technical Elective list; at least six credit-hours must be at 4000 level)**			
ME Elective Courses			
ME 3130	X	Kinematics	3
ME 3160	X	Intermediate Materials	3
ME 3170	X	Introduction to Plastics and Composites	3
ME 3300	X	Applied Thermodynamics	3
ME 4180	X	Compliant Mechanisms	3
ME 4380	X	Design of Thermal/Fluid Systems	3
ME 4390	X	Heating Ventilating and Air Conditioning	3
ME 4420	X	Finite Element Methods	3
ME 4550	X	Global Engineering	3
ME 490R	X	Advanced Current Topics in Mechanical Engineering	1*
Technical Elective Courses			
ECE 3710		Applied Probability and Statistics for Engineers and Scientists	3
TECH 3400		Project Management	3
TECH 3850		Quality Assurance in Technology	3
Students may also take upper level computer, electrical, and -civil engineering classes as technical electives in consultation with their faculty advisors and approval of the department offering the course.			
Elective Credit Hour Subtotal:			9
Core Curriculum			126

Program Curriculum Narrative

**The Advanced Current Topics in Mechanical Engineering (490R) provides exposure to emerging topics and technologies of current interest in mechanical engineering. Varies each semester (1 to 3 credits) depending upon the state of technology. May be repeated for a maximum of six credits toward graduation without prior written department approval.*

Degree Map:

Fall of First Year (Course Prefix and Number)	Course Title	Credit Hours
MATH 1210	Calculus I (May require pre-requisites)	5
CHEM 1210	Principles of Chemistry I	4
CHEM 1215	Principles of Chemistry I Laboratory	1
ENGL 1010	Introduction to Writing	3
ENGR 1000	Introduction to Engineering	3
Spring of First Year (Course Prefix and Number)	Course Title	Credit Hours
MATH 1220	Calculus II	5
PHYS 2210	Physics for Scientists and Engineers	4
PHYS 2215	Physics for Scientists and Engineers Lab	1
ENGL 2010	Intermediate Writing	3
ENGR 1030	Engineering Programming	3
Fall of Second Year (Course Prefix and Number)	Course Title	Credit Hours
MATH 2250	Differential Equations and Linear Algebra	4
PHYS 2220	Physics for Scientists and Engineers II	4
PHYS 2225	Physics for Scientists and Engineers II Lab	1
ENGR 2010	Engineering Statics	3
ENGR 2160	Introduction to Materials Science and Engineering	3
HLTH 1100 or PES 1097	Personal Health and Wellness or Fitness for Life	2
Spring of Second Year (Course Prefix and Number)	Course Title	Credit Hours
MATH 2210	Calculus III	3
ENGR 2030	Engineering Dynamics	3
ENGR 2140	Mechanics of Materials	3
ECE 2250	Circuit Theory*	3
ENGR 2450	Computational Methods for Engineering Analysis*	3
Fall of Third Year (Course Prefix and	Course Title	Credit Hours

Number)		
ENGR 2300	Engineering Thermodynamics	3
ME 3010	Linear Systems	3
ME 3140	Machine Design	3
ME 3310	Fluid Mechanics	3
Biology	Choose from GE approved Biology	3
Spring of Third Year (Course Prefix and Number)	Course Title	Credit Hours
ME 3210	Manufacturing Processes for Engineers	3
ME 3320	Heat Transfer	3
ME 3335	Thermal/Fluid Experimentation	2
ME xxxx	ME Elective	3
COMM1020	Public Speaking	3
Fall of Fourth Year (Course Prefix and Number)	Course Title	Credit Hours
ME 4010	Automatic Controls	3
ME 4410	Computer Aided Engineering	3
ME 4510	Mechanical Engineering Seminar	1
ME 4810	Capstone I	3
	Technical Elective/ME Elective	3
Fine Arts	Choose from the GE approved Fine Arts Electives	3
Spring of Fourth Year (Course Prefix and Number)	Course Title	Credit Hours
ME 4015	Control and Vibration Experimentation	2
ME 4820	Capstone II	3
COMM 2110	Interpersonal Communications	3
ME xxxx	4000 level Elective	3
American Institution	Choose from GE approved from History or Political Science app	3
PHIL 2050	Ethics and Values	3

* The pre-requisite requirement for these two courses are to be changed in 2017-2018.

Section V: Institution, Faculty, and Staff Support

Institutional Readiness

The mechanical engineering program will be housed in the Engineering Technology Department. The proposed program will not impact the delivery of other undergraduate or lower-division education.

Faculty

Currently, there are two faculty members (with Ph.D. degrees in mechanical engineering) in the

pre-engineering program. These two full-time faculty members along with adjunct faculty members have been teaching all the required engineering courses in the pre-engineering program. As shown previously in the degree map, students in the BSME programs will need to take many of the same engineering courses as pre-engineering students during Year 1 and Year 2. An additional tenure-track faculty member will be hired this coming academic year using the Engineering Initiative Funds. The BSME program will then need one more tenure-track faculty member to cover all the courses. Starting Spring 2019, two adjunct faculty members will be hired to offer two ME elective courses. The College of Technology and Computing has sufficient funds to cover these two adjunct positions.

Part I. Department Faculty/Staff

	# Tenured	# Tenure -Track	# Non - Tenure
Faculty: Full Time with Doctorate	2		2
Faculty: Part Time with Doctorate			1
Faculty: Full Time with Masters			4
Faculty: Part Time with Masters			
Faculty: Full Time with Baccalaureate	1		1
Faculty: Part Time with Baccalaureate			1
Teaching / Graduate Assistants			2
Staff: Full Time			1
Staff: Part Time			

Part II. Proposed Program Faculty Profiles

First Name	Last Name	Tenure (T) / Tenure Track (TT) / Other	Degree	Institution where Credential was Earned	Est. % of time faculty member will dedicate to proposed program.
Full Time Faculty					
Abolfazl (Masood)	Amin	T	Ph.D.	BYU	100%
Sean	Tolman	T	Ph.D.	BYU	100%
Part Time Faculty					

Part III: New Faculty / Staff Projections for Proposed Program

	# Tenured	# Tenure - Track	# Non - Tenure Track	Academic or Industry Credentials Needed	Est. % of time to be dedicated to proposed program.
Faculty: Full Time with Doctorate		2		Ph.D.	100%
Faculty: Part Time with Doctorate					
Faculty: Full Time with Masters					
Faculty: Part Time with Masters					
Faculty: Full Time with Baccalaureate					
Faculty: Part Time with Baccalaureate					
Teaching / Graduate Assistants					
Staff: Full Time					
Staff: Part Time					

Staff

A part-time staff employee will be needed to assist the existing administrative assistant in the Department of Engineering Technology. The topic of advising for the new mechanical engineering program has been discussed with Ms. Julie Harps who is the manager of academic advising in the College of Technology and Computing. Within the first two years of a BSME offering, the College has the capacity to advise many more students. However, as the new mechanical engineering program grows an additional advisor may be needed. This position will be shared with other engineering programs.

Student Advisement

As mentioned previously, the College has the capacity to advise more students. At least two of the academic advisors will be trained to help students with the new BSME program. New students and students who are changing major to the mechanical engineering program will be required to meet with these advisors to discuss program and graduation requirements and to develop a graduation plan. Students will continue to interact with their advisors on a regular basis to stay abreast of program updates, their academic standings (good, probation, warning, etc.), and to modify their

graduation plan if necessary.

A mechanical engineering faculty member will also be assigned to each student as a faculty advisor. The role of the faculty advisor is to provide general guidance regarding the BSME curriculum and potential careers in mechanical engineering. Each faculty advisor will also monitor student's progress and detect academic problems before they become serious. This approach will allow for the development of a closer, more interactive relationship between the student and the faculty advisor. The student will keep his/her faculty advisor as long as he/she feels that advising has been productive. A student may request a change in his/her assigned advisor at any time by contacting the BSME program coordinator. It will be mandatory for the students to meet with their faculty advisors at least once per semester to review progress and discuss plans for the next semester.

Library and Information Resources

The Ira & Mary Lou Fulton Library at Utah Valley University cultivates a dynamically changing collection of books, ebooks, videos, and streamed media that relate to mechanical engineering and associated technologies. As the educational and research requirements of mechanical engineering evolve in professional practice and theory, the Fulton Library collection development focus will keep pace.

Initial “one-stop-shopping” for articles/books/videos relating to mechanical engineering subjects can be done by means of the Fulton Library’s website OneSearch feature, which allows a single search to simultaneously span multiple databases and includes a search of the library catalog’s books, eBooks, and videos. (Each individual database can also be searched within the scope of the respective database website.)

Access to online engineering resource materials at the Fulton Library:

1. IEEE Xplore Digital Library:

IEEE Xplore Digital Library offers full text articles from 151 computer science and engineering periodicals, from 1988 to the present, and over 900 conference proceedings from 1995 to the present. Technical standards, ebooks, and educational courses are also included. It includes peer-review content on topics such as engineering theory, information systems and data processing, computer security, bioinformatics, history of computing, mobile computing, and much more. Complete full text content available.

2. ScienceDirect Journals:

ScienceDirect offers full text access to more than 1,600 peer-reviewed journals in biology, psychology, technology, economics, nursing, health sciences, law, and more. Full text coverage ranges from 1995 to the present. This database can also be used to search the entire collection of over 9,000 titles from their first issues to the present. Some full-text content is available.

3. Applied Science and Technology:

This database indexes nearly 800 journals and magazines in science, engineering, mechanics and technology and includes articles on computer science and security, robotics, chemistry, fire science, geology and earth sciences, waste management, space science, oceanography and more. Peer-reviewed articles are available. Coverage spans 1983 to the present. Some full text content available.

4. Academic Search Premier:
This multidisciplinary database contains nearly 3,900 peer-reviewed journals in addition to more than 8,500 journals, magazines, and newspapers. Use this database to search for articles in all subjects including art, literature, politics, science and technology, health, music, popular culture, history, and many more. Coverage ranges from 1975 to the present. Some full text content available.

5. Web of Science:
Web of Science database provides researchers, administrators, faculty, and students with quick, powerful access to the bibliographic and citation information for journal articles in the sciences that they need to find research data, analyze trends, and more.

The Fulton Library is currently in negotiations to purchase access to the Compendex database. Compendex is an engineering bibliographic database published by Elsevier Inc. It indexes scientific literature pertaining to engineering materials. Beginning in 1884, it was compiled by hand under the original title of Engineering Index. The name "Compendex" stands for COMPuterized ENgineering inDEX. We anticipate that this purchase will take place Fall of 2017 or sometime soon thereafter.

Full text access to the thousands of journal articles is licensed to Fulton Library patrons. Off-campus web access to library patrons is enabled by means of a CAS (central authentication service) login authentication layer that is enforced by the Fulton Library EZProxy server.

Fulton Library Catalog Holdings for Engineering Technology:
The Library catalog contains print books, eBooks (Safari, NetLibrary, EBSCO eBooks and eBrary), videos (DVD, Blue Ray, VHS) as well as online, streamed videos.
Most materials for Mechanical Engineering (ME), etc. are covered in the Library of Congress call number areas:
TA1-2040 Engineering (General).
TJ1-TJ1570 Mechanical engineering and machinery

Additional call numbers pertaining to specific subject areas may also apply (e.g. mechanical engineering and machinery, power resources, energy conservation, mechanics applied to machinery--dynamics, mechanical movements, mechanical devices and figures--automata, ingenious mechanisms, robots, control engineering systems. Automatic machinery (General), machine design and drawing, machine construction (General), heat engines, turbines. Turbomachines (General), steam engineering, locomotives, miscellaneous motors and engines--including gas, gasoline, diesel engines, renewable energy sources, hydraulic machinery, vacuum technology, pneumatic machinery, machinery exclusive of prime movers, machine shops and machine shop practice, hoisting and conveying machinery, lifting and pressing machinery, agricultural machinery).

Current library catalog holdings are approximately as follows:

Mechanical Engineering related books (print): 588
Mechanical Engineering related videos (DVD, BluRay): 13
Mechanical Engineering related eBooks: 1468
Mechanical Engineering related streamed videos: 78
Mechanical Engineering related journals: 175

Acquisition of Materials Through Other Libraries and Partners:
A patron may often seek information (articles, books, etc.) that are not directly owned or licensed by the Fulton Library. In such cases, a desired item may be accessed from other libraries throughout the United States by means of our Interlibrary Loan Service (ILL). A requested article full text is emailed to a requester within one business day. Print books are generally located, received and made available within seven business days. In addition, Fulton Library patrons have access to check out items from partner libraries of higher education in the Utah/Idaho/Nevada area (BYU, U of Utah, Utah State, etc.) by means of a Utah Academic Library Consortium (UALC) agreement.

Support for Related Research and Inquiries:
Tim Rowley is currently the Fulton Library liaison librarian for faculty and student support for mechanical engineering and related fields of study. He will be contacted to request additional books, subscriptions, or to seek support regarding the use of engineering information resources for research or program support.

Projected Enrollment and Finance

Part I.

Three Year Projection: Program Participation and Department Budget						
	2017-18	New Program				
		2018-19	2019-20	2020-21		
Student Data						
# of Majors in Department	82					
# of Majors in Proposed Program(s)		10	20	30		
# of Graduates from Department	20					
# Graduates in New Program(s)		0	10	20		
Department Financial Data						
	Department Budget					
	Year Preceding Implementati	Year 1 Addition to Base Budget	Year 2 Addition to Base Budget	Year 3 Addition to Base Budget		
Project additional expenses associated with offering new						
EXPENSES – nature of additional costs required for proposed program(s)						
List salary benefits for additional faculty/staff each year the positions will be filled. For example, if hiring faculty in year 2, include expense in years 2 and 3. List one-						
Personnel (Faculty & Staff Salary &	$812,851	$135,134	$259,208	$259,208		
Operating Expenses (equipment, travel, resources)	$19,000	$68,000	$12,000	$12,000		
Other:		$0	$0	$0		
TOTAL PROGRAM EXPENSES		$	$0	$0		
TOTAL EXPENSES	$831,851	$203,134	$271,208	$271,208		
FUNDING – source of funding to cover additional costs generated by proposed						

Describe internal reallocation using Narrative 1 on the following page. Describe new sources of funding using Narrative 2				
Internal Reallocation		$50,000		
Appropriation				
Special Legislative Appropriation		$120,000	$120,000	$120,000
Grants and Contracts				
Special Fees				
Tuition		$56,236	$139,763	$157,130
Differential Tuition (requires Regents approval)				
Total Revenue		$226,236	$259,763	$277,130
PROPOSED PROGRAM FUNDING		$203,134	$271,208	$271,208
TOTAL DEPARTMENT FUNDING				
Difference				
Funding - Expense	$0	$23,102	-$11,445	$5,922

Part II: Expense explanation

Expense Narrative

The 2017 allocation of Engineering Initiative funds supported one Mechanical Engineering faculty position. Tuition generated by the projected student enrollment will provide funding for the additional faculty member and operating funds. One time funding of $50,000 for equipment will be funded with department and Academic Affairs existing funds.

Existing faculty: The salaries of the two full-time faculty members in the pre-engineering program may need to be adjusted to reflect their transition to the BSME program (~$20,000)

Staff: A part-time administrative assistant (~$30,000 including benefits)

Part III: Describe funding sources

Revenue Narrative 1

The Dean of the College of Technology and Computing has evaluated existing resources and has identified human and physical resources that can be used in the proposed mechanical engineering program:

- Currently, there is capacity in the College to advise more students.
- Material Testing, Structural Testing, and Engine Testing labs already exist, and UVU Facilities has agreed to serve as a Thermal/Fluid Lab.

Revenue Narrative 2

There is strong support in the region for new engineering programs at UVU. Historically, companies along the Wasatch Front have provided major gifts to strengthen various programs in the College of Technology and Computing. The new program will work with the development office to seek major gifts from donors.

In 2017, UVU was given $480,000 to strengthen its pre-engineering program through the Engineering Initiative Funds. The university will pursue the Engineering Initiative Funds should they become available in the coming years.

Section VI: Program Evaluation

Program Assessment

The mechanical engineering program objectives at UVU will be monitored by the program's advisory board, employers, alumni, faculty, and students.

****Program Objectives** - The mission of the mechanical engineering program at Utah Valley University (UVU) is to provide a strong engineering foundation with a hands-on component to prepare professionally competent mechanical engineers of integrity who serve the engineering needs of the region and the globally interdependent community. Within three to five years of graduation, alumni of the program are expected to have:

- demonstrated their ability to perform mechanical engineering analysis to solve problems and to communicate technical information effectively in an engineering or a professional team environment
- advanced professionally by given more responsibilities; or have successfully completed a graduate level degree
- continued their professional development through workshops; or earning professional licensure
- served in their professional organizations and/or local communities

*** ABET requires each engineering program to publish the Students' Learning Outcomes and the Program Objectives. The Students' learning outcomes were discussed previously under the heading of External Review and Accreditation. The Program Objectives as required by ABET must state what the alumni of the program are expected to have demonstrated or accomplished within three to five years of graduation.*

Student Standards of Performance

The computer engineering program at UVU is accredited by ABET. The BSME program will be evaluated, based on ABET criteria, using the same formative and summative assessment tools and procedures that are already in place for the computer engineering program. In addition, as mentioned previously, the present Dean of the College of Technology and Computing is a registered licensed engineer with extensive ABET accreditation experience. He will work closely with the faculty to ensure that all ABET accreditation criteria are met and proper assessment tools are used.

Utah System of Higher Education
New Academic Program Proposal
Cover/Signature Page - Full Template

Institution Submitting Request: Utah Valley University
Proposed Program Title: BS in Electrical Engineering
Sponsoring School, College, or Division: College of Technology and Computing
Sponsoring Academic Department(s) or Unit(s): Computer Science
Classification of Instructional Program Code: 14.1001
Min/Max Credit Hours Required to Earn Degree: 126 Credits
Proposed Beginning Term: Fall 2018
Institutional Board of Trustees' Approval Date:

Program Type (check all that apply):

☐	Associate of Applied Science Degree (AAS)
☐	Associate of Arts Degree (AA)
☐	Associate of Science Degree (AS)
☐	Specialized Associate Degree (specify award type)
☐	Other (specify award type)
☐	Bachelor of Arts Degree (BA)
☑	Bachelor of Science Degree (BS)
☐	Professional Bachelor Degree (specify award type)
☐	Other (specify award type)
☐	Master of Arts Degree (MA)
☐	Master of Science Degree (MS)
☐	Professional Master Degree (specify award type)
☐	Other (specify award type)
☐	Doctoral Degree (specify award type)
☐	K-12 School Personnel Program
☐	Out of Service Area Delivery Program

Chief Academic Officer (or Designee) Signature:
I, the Chief Academic Officer or Designee, certify that all required institutional approvals have been obtained prior to submitting this request to the Office of the Commissioner.
Signature: **Date:**

Utah System of Higher Education
Program Description - Full
Template

Section I: The Request

The Computer Science Department in the College of Technology and Computing at Utah Valley University requests approval to offer the Bachelor of Science in Electrical Engineering (BSEE) effective Fall 2018.

Section II: Program Proposal

Program Description

A Bachelor of Science in Electrical Engineering provides a broad foundation in electrical engineering through combined classroom and laboratory work and prepares students for entering the profession of electrical engineering as well as further study at the graduate level. The core courses will provide students with a strong background in mathematics, physical science, and fundamentals of engineering.

Consistency with Institutional Mission

The mission statement of the Utah Valley University reads: "Utah Valley University is a teaching institution which provides opportunity, promotes student success, and meets regional educational needs. UVU builds on a foundation of substantive scholarly and creative work to foster engaged learning. The University prepares professionally competent people of integrity who, as lifelong learners and leaders, serve as stewards of a globally interdependent community." The BSEE program fits well into UVU's mission by meeting the educational needs of the region. It also augments the existing STEM offerings at UVU. The proposed program will increase the number of engineering graduates needed in the region to address the projected economic growth and development in the Wasatch Front. Moreover, the BSEE program will prepare professionally competent people of integrity by following the curriculum guidelines of ABET and the Institute of Electrical and Electronic Engineers (IEEE) code of ethics. The proposed program will further strengthen existing industrial relationships and create new partnerships as well.

Section III: Needs Assessment

Program Rationale

Utah County is one of the fastest growing regions in the State and home to a growing number of technology companies. To support this growth, it is necessary to have a steady supply of highly educated people in technology and engineering fields. Due to the growth of high-tech industry in the Wasatch Front, studies have shown that the demand for computer scientists and engineers has increased nearly three-fold in the past ten years. The technology companies surveyed by the Utah Technology Council have emphasized their struggle to find qualified candidates to fill positions and stated that they often have to go out-of-state to recruit engineers. These results suggest that the growing need for engineers and computer scientists in Utah is not being fulfilled by the two major public institutions (i.e., University of Utah and Utah State University) in the state. The lack of having enough graduates with electrical engineering backgrounds could lead to the departure of some companies and preclusion of others to consider Utah for expansion or establishment of their enterprises.

In the State of Utah, there is a high demand for electrical engineering graduates, because they are essential in Utah's growing economy; they play vital roles in the growth of high tech sector. UVU currently has a computer engineering program that meets part of this need. However, there are still considerable needs for civil, electrical, and mechanical engineers. The proposed BSEE program would complement the existing computer engineering program and provide additional desperately needed engineers in the Wasatch Front. The UVU engineering programs will also enhance the position of the State of Utah by providing an attractive environment for high technology industries.

Labor Market Demand

UVU is proposing to develop an electrical engineering program to address a critical shortage of engineers in the state. Long-term Bureau of Labor Statistics (BLS) estimates the 2014-2024 growth rate for SOC codes that include electrical and electronics engineering (CIP 14.1001) within Utah to be as fast as average with estimated increase of 21-33% and combined growth of about 140 new job openings annually. According to the BLS, the median annual wage for electrical and electronics engineers in Utah is $84,230-87,360, which is significantly higher than the Utah median wage ($33,990). Moreover, according to data provided by UVU Institutional Research & Information (IRI) Center, as of June 7, 2017, there were 558 openings for electrical engineers and a supply of only 338 graduates, resulting in a shortage of 220 unfilled positions in Utah (Source: Economic Development and Employer Planning System (EDEPS)).

Student Demand

During 2014-2016, the number of students with majors in pre-engineering at UVU increased by 17% (From 369 to 432; approximately an addition of 32 students per year). The pre-engineering program at UVU has been serving as feeder to the engineering programs at the University of Utah, Utah State University, BYU, and other institutions.

Since Utah Valley University does not offer any BS degrees in civil, electrical, and mechanical engineering, a study was conducted to determine how many UVU pre-engineering students are transferring to other Universities to seek these degrees. The IRI Center at UVU submitted the names of 998 students who majored in pre-engineering or engineering technology programs between Fall 2009 and Fall 2014 but had not graduated from UVU to the National Student Clearinghouse (NSC). NSC is a nonprofit trusted organization that partners with the higher education community to provide verification and reporting services to most of the postsecondary institutions in the US. The National Student Clearinghouse found that 333 students or 33% of UVU pre-majors had transferred to other institutions to complete their engineering degrees; it is unclear what happens to the remaining 67%. Furthermore, an informal survey of more than 100 pre-engineering students at UVU conducted during 2012 Spring term indicated significant student demand for upper division engineering courses. Of those who responded, 87% of pre-engineering students would be interested in taking upper division courses to graduate from UVU with a Bachelor of Science in Engineering. An additional survey of student opinion was also conducted in Fall 2016 by the UVU's IRI Center. Included in this survey was the question: "Is there a major or degree that you are interested in that UVU doesn't offer?" Of the 877 respondents, 254 respondents indicated "Yes," and specified the programs they would like UVU to offer. Of responses with the highest frequencies, engineering was the 2nd most desired bachelor program currently not offered at UVU. From this representative student survey, UVU's IRI estimated that of the 19,469 non-high school, bachelor degree seeking students at UVU in Fall 2016, four percent or 779 undergraduates would possibly be interested in majoring in a Bachelor of Science in Engineering.

Finally, in April 2017, a survey asked the pre-engineering students who were about to finish their AS degree, a simple question: "If UVU were to offer other engineering programs, besides computer

engineering, would you be interested in completing your engineering degree at UVU?" Seventy-nine students participated in the survey and all (100%) answered "Yes" to the question. The results of the survey show that students who are already in the pre-engineering program at UVU prefer not to transfer to another institution to complete their degrees. Having a BSEE program at UVU reduces the disruptions that normally occur when non-traditional students transfer to another institution. The continuity would also allow for a greater success in graduation rate.

Similar Programs

The electrical engineering programs offered by the University of Utah and Utah State University were carefully examined. The core of these programs are similar to the proposed BSEE program. Whereas, the enrollment at the University of Utah and USU are made up of mostly traditional students, UVU's enrollment consists of mostly non-traditional students. As mentioned in the previous section, surveys conducted by UVU show that students who are already at UVU in the pre-engineering program prefer not to transfer to another institution to complete their degrees. This preference is due to elimination of disruptions that occur in the lives of the non-traditional students who are married with children and live and work in the area; for example, transferring to the University of Utah would require them to commute to Salt Lake City every day. The cost of fuel or public transportation, traffic, time commitment, and weather are reasons for not wanting to commute every day. Moreover, the majority of these students cannot get accepted to BYU because of the BYU's relatively high admission standards for transfer students.

The cost of adding the BSEE program at UVU is relatively small; only one additional faculty member is initially needed; the existing laboratory facilities in the College of Technology and Computing are sufficient to accommodate a new electrical engineering program. With this relatively low cost, UVU will be positioned to better serve the needs of the local student population, particularly, the non-traditional students.

Collaboration with and Impact on Other USHE Institutions

The Dean of College of Technology and Computing has met with the Dean of College of Engineering at the University of Utah and has discussed UVU's engineering program proposals and the rationale for their offerings. UVU will continue to collaborate with the University of Utah to send students who are interested in Bioengineering, Chemical Engineering, Materials Science and Engineering, or other fields to complete their degrees. Additionally, the University of Utah places a great deal of focus on research. As a result, among UVU's BSEE program objectives are to prepare students for further studies at the graduate level, particularly, at the University of Utah should they decide to do so. At the time this proposal was being prepared, Utah State University was searching for a dean for the College of Engineering, consequently, UVU's Dean of Technology and Computing did not reach out to USU.

External Review and Accreditation

UVU has formed an advisory board to review the proposed engineering programs and to provide feedback. The proposed BSEE program is designed to meet the ABET accreditation requirements. The program will seek ABET accreditation in 2020, after it has produced its first graduates. ABET has eight General Criteria that must be met. The eight General Criteria cover: 1) Students; 2) Program Educational Objectives; 3) Student Outcomes; 4) Continuous Improvement; 5) Curriculum; 6) Faculty; 7) Facilities; and 8) Institutional Support. For example, Criterion 2 (Program Educational Objectives) specifically requires that all engineering programs including electrical:

- Provide the institutional mission statement,

- List the program educational objectives and state where these can be found by the general public,
- Describe how the program educational objectives are consistent with the mission of the institution,
- List the program constituencies. Describe how the program educational objectives meet the needs of these constituencies,
- Describe the process that periodically reviews the program educational objectives including how the program's various constituencies are involved in this process,
- Describe how this process is systematically utilized to ensure that the program's educational objectives remain consistent with the institutional mission, the program constituents' needs and these criteria.

As another example, ABET's Criterion 3 (Student Outcomes) requires that the program:

- List the student outcomes for the program and indicate where the student outcomes are documented. The proposed BSEE program will use the following ABET's Student Outcomes (a) through (k). These outcomes are used for all engineering disciplines including electrical engineering:

    a. an ability to apply knowledge of mathematics, science, and engineering
    b. an ability to design and conduct experiments, as well as to analyze and interpret data
    c. an ability to design a system, component, or process to meet the desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturing, and sustainability
    d. an ability to function on multi-disciplinary teams
    e. an ability to identify, formulate, and solve engineering problems
    f. an understanding of professional and ethical responsibility
    g. an ability to communicate effectively
    h. the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
    i. a recognition of the need for, and the ability to engage in life-long learning
    j. a knowledge of contemporary issues
    k. an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
- Describe how the student outcomes prepare graduates to attain the program educational objectives. (The BSEE program education objectives are shown at the end of this proposal under the heading of Program Assessment/Program Objectives)

Furthermore, ABET requires that each engineering program must have an assessment process with documented results. Evidence must be given that the results are applied to the further development and improvement of the program. The assessment process must demonstrate that the outcomes important to the mission of the institution and the objectives of the program, including those listed above, are being measured. Evidence that may be used includes, but is not limited to the following: student portfolios, including design projects; nationally-normed subject content examinations; alumni surveys that document professional accomplishments and career development activities; employer surveys; and placement data of graduates.

As mentioned previously, the proposed BSEE has been designed to meet the ABET requirements and the goals and objective statements have been derived with that intent. The present Dean of the College of Technology and Computing is a registered licensed engineer with extensive ABET accreditation experience. He will work closely with the faculty to ensure

that all ABET accreditation criteria are met. Furthermore, the existing computer engineering program at UVU is already ABET accredited; the proposed BSEE program will follow the computer engineering program's model of assessment.

Section IV: Program Details

Graduation Standards and Number of Credits

1. Completion of a minimum of 126 semester credits, with a minimum of 40 upper-division credits.
2. Overall grade point average of 2.5 or above, with a minimum grade of C in all discipline core and elective requirements.
3. Residency hours - minimum of 30 credit hours through course attendance at UVU. 10 of these hours must be within the last 45 hours earned. At least 12 of the credit hours earned in residence must be in approved CS + ECE courses.
4. All transfer credit must be approved in writing by UVU and the electrical engineering program coordinator.
5. No more than 80 semester hours and no more than 20 hours in ECE courses of transfer credit.
6. No more than 6 semester hours may be earned through independent study.
7. Successful completion of at least one Global/Intercultural course.

Admission Requirements

To be admitted to the BSEE program a student must complete the following courses with a minimum grade of C in these courses and grade point average of 2.5 or above. A student not meeting all of the admission requirements, may request in writing, a provisional admission status for a semester from the department. The provisional admission status must be approved by the electrical engineering program coordinator.

MATH 1210 Calculus I
MATH 1220 Calculus II
PHYS 2210 Physics for Scientists and Engineers I
PHYS 2215 Physics for Scientists and Engineers I Lab
PHYS 2220 Physics for Scientists and Engineers II
PHYS 2225 Physics for Scientists and Engineers II Lab
CS 1400 Fundamentals of Programming
CS 2810 Assembly Language and Computer Architecture
ENGR 1000 Introduction to Engineering
ECE 2700 Digital Design I
ECE 2705 Digital Design I Lab
ECE 2250 Circuit Theory
ECE 2255 Circuit Theory Lab

Curriculum and Degree Map

Program Curriculum:

Course Number	New Course	Course Title	Credit Hours
General Education Courses			
ENGL 1010		Introduction to Writing	3.0

ENGL 2010		Intermediate Writing	3.0
MATH 1210		Calculus I	5.0
American Institutions: Student will complete one of the following:			3.0
HIST 2700		US History to 1877	
HIST 2710		US History since 1877	
HIST 1700		American Civilization	
HIST 1740		US Economic History	
POLS 1000		American Heritage	
POLS 1100		American National Government	
Student will complete the following:			
PHIL 2050		Ethics and Values	3.0
HLTH 1100		Personal Health and Wellness or	2.0
PES 1097		Fitness for Life	
COMM 1020		Introduction to Public Speaking	3.0
COMM 2110		Interpersonal Communications	3.0
Fine Arts (choose from the list) +			3.0
Biology Choice (choose from the list) +			3.0
PHYS 2210		Physics for Scientists and Engineers I	4.0
CHEM 1210		Principles of Chemistry I	4.0
		General Education Subtotal:	39.0
Required Courses			
MATH 1220		Calculus II	5.0
MATH 2210		Calculus III	3.0
PHYS 2215		Physics for Scientists and Engineers I Lab	1.0
PHYS 2220		Physics for Scientists and Engineers II	4.0
PHYS 2225		Physics for Scientists and Engineers II Lab	1.0
CHEM 1215		Principles of Chemistry I Laboratory	1.0
CS 1400		Fundamentals of Programming	3.0
CS 2810		Computer Organization and Architecture	3.0
ENGR 1000		Introduction to Engineering	3.0
ECE 2250		Circuit Theory	3.0
ECE 2255		Circuit Theory Lab	1.0
ECE 2700		Digital Design I	3.0
ECE 2705		Digital Design I Lab	1.0
ECE 2760	X	Introduction to Semiconductor Theory and Nanotechnology	3.0
ECE 3250	X	Power Systems	3.0
ECE 3350	X	Control Systems	3.0
ECE 3450	X	Electromagnetics and Transmission Lines	3.0
ECE 3710		Applied Probability & Statistics for Engineers and Scientists	3.0
ECE 3730		Embedded Systems I	3.0
ECE 3740		Digital Design II	3.0

ECE 3750		Engineering Analysis	3.0
ECE 3760		Electronic Systems	3.0
ECE 3765		Electronic Systems Lab	1.0
ECE 3770		Signals and Systems	3.0
ECE 3780	X	Communication Systems and Circuits	3.0
ECE 4900	X	Electrical Engineering Capstone I	3.0
ECE 4730		Embedded Systems II	3.0
ECE 4750		Digital Signal Processing	3.0
ECE 4760		VLSI Design	3.0
ECE 4950	X	Electrical Engineering Capstone II	3.0
		Required Course Credit Hour Sub Total:	81
Elective Courses			
		Complete a minimum of six credits from the following:	
ECE 4770		Artificial Neural Networks (3.0)	
ECE 4780		Wireless and Mobile Communications (3.0)	
CS 4480		Digital Image Processing and Computer Vision (3.0)	
		Elective Credit Hour Subtotal:	6.0
		Core Curriculum	126.0

Program Curriculum Narrative

NA.

Degree Map:

Fall of First Year	Course Title	Pre-requisite	Credit Hours
MATH 1210	Calculus I	MATH 1050 & 1060 (Min. grade of C)(within two years) or MATH 1065 or higher, or placement test	5.0
CHEM 1210	Principles of Chemistry I	MATH 1050, prior chemistry experience rec.	4.0
CHEM 1215	Principles of Chemistry I Laboratory	MATH 1050, prior chemistry experience rec.	1.0
ENGL 1010	Introduction to Writing	ENGL 1000 with C- or higher (or appropriate test scores within 3 years)	3.0
ENGR 1000	Introduction to Engineering	MATH 1060 or higher (Can be a Co-req)	3.0
Spring of First Year	Course Title		Credit Hours

MATH 1220	Calculus II	MATH 1210 (Min. grade of C)	5.0
PHYS 2210	Physics for Scientists and Engineers I	MATH 1210	4.0
PHYS 2215	Physics for Scientists and Engineers I Lab	MATH 1210	1.0
ENGL 2010	Intermediate Writing	ENGL 1010 with C- or higher (or appropriate test scores within 3 years)	3.0
CS 1400	Fundamentals of Programming	MATH 1010 or higher or appropriate placement test scores CS 1030 recommended	3.0
Fall of Second Year	Course Title	Pre-requisite	Credit Hours
PHYS 2220	Physics for Scientists and Engineers II	PHYS 2210 & MATH 1220	4.0
PHYS 2225	Physics for Scientists and Engineers II Lab	PHYS 2210 & MATH 1220	1.0
ECE 2700	Digital Design I	MATH 1050 or 1055 Corequisite: ECE 2705	3.0
ECE 2705	Digital Design I Lab	MATH 1050 or 1055 Corequisite: ECE 2700	1.0
BIOLOGY	Choose from GE approved Biology Elective List		3.0
CS 2810	Computer Organization and Architecture	CS 1400	3.0
HLTH 1100 or PES 1097	Personal Health and Wellness Fitness for Life		2.0
Spring of Second Year	Course Title	Pre-requisite	Credit Hours
MATH 2210	Calculus III	MATH 1220 (C or higher)	3.0
*ECE 3750	Engineering Analysis	ECE 1020, MATH 1220, UAS	3.0
ECE 2760	Intro. to Semiconductor Theory & Nanotechnology	MATH 1060 or higher	3.0
ECE 3710	Applied Probability & Statistics for Engineers and Scientists	MATH 1210, UAS	3.0
*ECE 2250	Circuit Theory	ECE 1020, MATH 1210, PHYS 2210. Corequisite: ECE 2255	3.0
ECE 2255	Circuit Theory Lab	MATH 1210, PHYS 2210. Corequisite: ECE	1.0

		2250	
Fall of Third Year	Course Title	Pre-requisite	Credit Hours
ECE 3770	Signals and Systems	ECE 3750, UAS	3.0
ECE 3740	Digital Design II	ECE 2700, UAS	3.0
ECE 3760	Electronic Systems	ECE 2250, PHYS 2220, UAS, Corequisite: ECE 3765	3.0
ECE 3765	Electronic Systems Lab	ECE 2250, PHYS 2220, UAS, Corequisite: ECE 3760	1.0
ECE 3730	Embedded Systems I	ECE 2700, UAS	3.0
Fine Arts	Choose from the GE approved Fine Arts Electives		3.0
Spring of Third Year	Course Title	Pre-requisite	Credit Hours
COMM 1020	Public Speaking		3.0
ECE 4730	Embedded Systems II	ECE 3730, UAS	3.0
ECE 3250	Power Systems	ECE 2250, UAS	3.0
ECE 3780	Communication Systems and Circuits	ECE 3770, UAS	3.0
ECE 3350	Control Systems	ECE 2250, UAS	3.0
Fall of Fourth Year	Course Title	Pre-requisite	Credit Hours
ECE 4900	Electrical Engineering Capstone I	ECE 3350	3.0
*ECE 4760	VLSI Design	ECE 3760, UAS	3.0
COMM 2110	Interpersonal Communication	Counts as social science	3.0
	EE Elective		3.0
Am Inst	History or Political Science		3.0
Spring of Fourth Year	Course Title	Pre-requisite	Credit Hours
ECE 4950	Electrical Engineering Capstone II	ECE 4900	3.0
	EE Elective		3.0
ECE 3450	Electromagnetics & Transmission Lines	ECE 2250, PHYS 2220	3.0
PHIL 2050	Ethics and Values	ENGL 1010	3.0
ECE 4750	Digital Signal Processing	ECE 3770, ECE 3730, UAS	3.0

*The pre-requisite requirements for these courses are to be changed in 2017-2018.

Section V: Institution, Faculty, and Staff Support

Institutional Readiness

The electrical engineering program will be housed in the Computer Science Department. The

proposed program will not impact the delivery of other undergraduate or lower-division education.

Faculty

Currently, there are five faculty members (with Ph.D. degrees in electrical engineering) in the Computer Science Department. There are also two faculty members (with Ph.D. degrees in mechanical engineering) in the pre-engineering program. These two full-time faculty members along with adjunct faculty members have been teaching all the required engineering courses in the pre-engineering program. As shown previously in the degree map, students in the BSEE program will need to take many of the same engineering courses as pre-engineering students during Year 1 and Year 2. One additional electrical engineering tenure-track faculty will be hired this coming academic year using the Engineering Initiative Funds.

Part I. Department Faculty/Staff

	# Tenured	# Tenure -Track	# Non - Tenure
Faculty: Full Time with Doctorate	8		5
Faculty: Part Time with Doctorate			1
Faculty: Full Time with Masters	2		3
Faculty: Part Time with Masters			3
Faculty: Full Time with Baccalaureate			
Faculty: Part Time with Baccalaureate			6
Teaching / Graduate Assistants			
Staff: Full Time			
Staff: Part Time			

Part II. Proposed Program Faculty Profiles

First Name	Last Name	Tenure (T) / Tenure Track (TT) / Other	Degree	Institution where Credential was Earned	Est. % of time faculty member will dedicate to proposed program.
Full Time Faculty					
Afsaneh	Minaie	T	Ph.D.	University of Oklahoma	80%
Reza	Kamali-Sarvestani	T	Ph.D.	University of Alabama in Huntsville	80%
Cheol-Hwan	Oh	T	Ph.D.	Purdue University	80%
Huda	Alghaib	TT	Ph.D.	University of Alabama in Huntsville	80%

Sayed Ahmad	Salehi	TT	Ph.D.	University of Minnesota	80%
Part Time Faculty					

Part III: New Faculty / Staff Projections for Proposed Program

	# Tenured	# Tenure - Track	# Non - Tenure Track	Academic or Industry Credentials Needed	Est. % of time to be dedicated to proposed program.
Faculty: Full Time with Doctorate		1			100%
Faculty: Part Time with Doctorate					
Faculty: Full Time with Masters					
Faculty: Part Time with Masters					
Faculty: Full Time with Baccalaureate					
Faculty: Part Time with Baccalaureate					
Teaching / Graduate Assistants					
Staff: Full Time			1		100%
Staff: Part Time					

Staff

The topic of advising for the new electrical engineering program has been discussed with Ms. Julie Harps who is the manager of academic advising in the College of Technology and Computing. Within the first two years of BSEE offering, the College has the capacity to advise more students. However, as the new electrical engineering program grows an additional advisor will be need. This position will be shared among civil, electrical, and mechanical engineering programs.

Student Advisement

UVU advisors are professional advisors. Three departmental advisors are currently in place who advise computer science, software engineering, and computer engineering students. They will assist students in planning their programs and tracking their progress. These advisors will be familiar with all of the college requirements as well as the requirements for the BSEE degree.

New students and students who are changing majors to computer science, computer engineering, electrical engineering, and software engineering are required to meet with a CS advisor. They are provided with an explanation of the program, an evaluation of where they stand, and an academic plan custom built to their needs and program requirements. They are also provided with University-wide information that may be useful to them.

Students regularly interact with their advisor as they progress through the program for program updates, re-evaluation of their academic plan, academic status (probation, warning, etc.), and help in finding jobs or careers in the EE industry, culminating in graduation advising.

The engineering faculty will be actively involved in student advising, and will work closely with advisors to assist students and monitor their progress.

Library and Information Resources

The Ira & Mary Lou Fulton Library at the Utah Valley University Library cultivates a dynamically changing collection of books, ebooks, videos, and streamed media that relate to electrical engineering and associated technologies. As the educational and research requirements of electrical engineering evolve in professional practice and theory, the Fulton Library collection development focus will keep pace.

Initial "one-stop-shopping" for articles/books/videos relating to electrical engineering subjects can be done by means of the Fulton Library's website OneSearch feature, which allows a single search to simultaneously span multiple databases and includes a search of the library catalog's books, eBooks and videos. (Each individual database can also be searched within the scope of the respective database website.)

Access to online engineering resource materials at Fulton Library:

1. IEEE Xplore Digital Library:

IEEE Xplore Digital Library offers full text articles from 151 computer science and engineering periodicals, from 1988 to the present, and over 900 conference proceedings from 1995 to the present. Technical standards, ebooks, and educational courses are also included. It includes peer-review content on topics such as information systems and data processing, computer security, bioinformatics, history of computing, mobile computing, and much more. Complete full text content available.

2. ScienceDirect Journals:

ScienceDirect offers full text access to more than 1,600 peer-reviewed journals in biology, psychology, technology, economics, nursing, health sciences, law, and more. Full text coverage ranges from 1995 to the present. This database can also be used to search the entire collection of over 9,000 titles from their first issues to the present. Some full-text content is available.

3. Applied Science and Technology:

This database indexes nearly 800 journals and magazines in science, engineering, mechanics and technology and includes articles on computer science and security, robotics, chemistry, fire science, geology and earth sciences, waste management, space science, oceanography and more. Peer-

reviewed articles are available. Coverage spans 1983 to the present. Some full text content available.

4. Computer Source:
Computer Source can be used to locate articles in a wide variety of technology fields such as robotics, computer programming and security, artificial intelligence, information systems, and more. It includes articles from almost 450 journals, magazines, and newsletters published since 1985. Some content is peer-reviewed. Some full text content available.

5. Academic Search Premier:
This multidisciplinary database contains nearly 3,900 peer-reviewed journals in addition to more than 8,500 journals, magazines, and newspapers. Use this database to search for articles in all subjects including art, literature, politics, science and technology, health, music, popular culture, history, and many more. Coverage ranges from 1975 to the present. Some full text content available.

6. Web of Science:
Web of Science database provides researchers, administrators, faculty, and students with quick, powerful access to the bibliographic and citation information for journal articles in the sciences that they need to find research data, analyze trends, and more.

The Fulton Library is currently in negotiations to purchase access to the Compendex database. Compendex is an engineering bibliographic database published by Elsevier Inc. It indexes scientific literature pertaining to engineering materials. Beginning in 1884, it was compiled by hand under the original title of Engineering Index. The name "Compendex" stands for COMPuterized ENgineering inDEX. We anticipate this will be in place late spring of 2017 or sometime in the summer.

Full text access to the thousands of journal articles is licensed to Fulton Library patrons. Nevertheless, off-campus web access to library patrons is enabled by means of a CAS (central authentication service) login authentication layer that is enforced by the Fulton Library EZProxy server.

Fulton Library Catalog Holdings for Electrical Engineering Technologies:

The library catalog contains print books, eBooks (Safari, NetLibrary, EBSCO eBooks and eBrary), videos (DVD, Blue Ray, VHS) as well as online, streamed videos.

Most materials for electrical engineering (EE), etc. are covered in the Library of Congress call number areas:

- TA1-2040 Engineering (General).
- TK1-9971 Electrical engineering; Electronics.

Additional call numbers pertaining to specific subject areas may also apply (e.g. electronics, nuclear engineering, electric meters, electric circuits, electric networks, production of electric energy or power, powerplants, central stations, dynamoelectric machinery and auxiliaries including generators, motors, transformers, production of electricity by direct energy conversion, distribution of transmission of electric power, applications of electric power, electric lighting, electric heating, telecommunication-including telegraphy, telephone, radio, radar, television, computer engineering, computer hardware, photoelectronic devices, atomic power, electricity for amateurs).

Current library catalog holdings are approximately as follows:

Electrical Engineering related books (print): 1280
Electrical Engineering related eBooks: 845
Electrical Engineering related journals: 22
Electrical Engineering related videos (DVD, BluRay): 34
Electrical Engineering related streamed videos: 15

Acquisition of Materials Through Other Libraries and Partners:

A patron may often seek information (articles, books, etc.) that are not directly owned or licensed by the Fulton Library. In such cases, a desired item may be accessed from other libraries throughout the United States by means of our Interlibrary Loan Service (ILL). A requested article full text is emailed to a requester within one business day. Print books are generally located, received and made available within seven business days. In addition, Fulton Library patrons have access to check out items from partner libraries of higher education in the Utah/Idaho/Nevada area (BYU, U of Utah, Utah State, etc.) by means of a Utah Academic Library Consortium (UALC) agreement.

Support for Related Research and Inquiries:

Tim Rowley is currently the Fulton Library liaison librarian for faculty and student support for Electrical Engineering and related fields of study. Mr. Rowley can be contacted to request additional books, subscriptions or to seek support regarding the use of engineering information resources for research or program support.

Projected Enrollment and Finance

Part I.

Project the number of students who will be attracted to the proposed program as well as increased expenses, if any. Include new faculty & staff as described above.

Three Year Projection: Program Participation and Department Budget						
	2017-18	New Program				
		2018-19	2019-20	2020-21	Year 4	Year 5
Student Data						
# of Majors in Department	976					
# of Majors in Proposed Program(s)		10	20	30		
# of Graduates from Department	91					
# Graduates in New Program(s)		0	10	20		
Department Financial Data						
	Department Budget					
		Year 1	Year 2	Year 3		
Project additional expenses associated with offering new program(s). Account for New Faculty as stated in above in, "Faculty Projections."	Year Preceding Implementation (Base Budget)	Addition to Base Budget for New Program(s)	Addition to Base Budget for New Program(s)	Addition to Base Budget for New Program(s)		
EXPENSES – nature of additional costs required for proposed program(s)						
List salary benefits for additional faculty/staff each year the positions will be filled. For example, if hiring faculty in year 2, include expense in years 2 and 3. List one-time operating expenses only in the year expended.						
Personnel (Faculty & Staff Salary & Benefits)	$2,581, 132	$228,813	$228,813	$228,813		

Operating Expenses (equipment, travel, resources)	$46,500	$218,000	$12,000	$12,000
Other:		0	0	0
TOTAL PROGRAM EXPENSES				
TOTAL EXPENSES	$2,627,632	$446,813	$240,813	$240, 813
FUNDING – source of funding to cover additional costs generated by proposed program(s)				
Describe internal reallocation using Narrative 1 on the following page. Describe new sources of funding using Narrative 2.				
Internal Reallocation		$200,000		
Appropriation				
Special Legislative Appropriation		$120,000	$120,000	$120,000
Grants and Contracts				
Other		$89,598	$48,864	$29,016
Tuition		$37,215	$71,949	$91,797
Differential Tuition (requires Regents approval)				
Total Revenue		$446,813	$240,813	$240,813
PROPOSED PROGRAM FUNDING		$446,813	$240,813	$240,813
TOTAL DEPARTMENT FUNDING				
Difference				
Funding - Expense				

Part II: Expense explanation
Expense Narrative

The 2017 allocation of Engineering Initiative funds supported one Electrical Engineering faculty position. Tuition generated by the projected student enrollment will provide funding for the hourly staff and operating funds. One time funds of $200,000 for a power lab will be funded with department and Academic Affairs existing funds. Through UVU's Planning, Budgeting Assessment process, Academic Affairs will need to prioritize the funding of the lab manager position from other university tuition and tax fund revenue.

New faculty: The proposed BSEE program will need one additional tenure-track faculty member at the assistant professor level, plus one faculty member at the third year of the program (~$130,000 each including fringe benefits).
New administration: The proposed BSEE program will need one additional admin staff member (~$50,000, including fringe benefits).

Part III: Describe funding sources
Revenue Narrative 1
The Dean of the College of Technology and Computing has evaluated existing resources and has identified human and physical resources that can be used in the proposed electrical engineering program:

- Currently, there is capacity in the College to advise more students.
- The existing computer science and computer engineering labs could be used for the electrical engineering program.
- Additional equipment for a Power Lab will be needed. Donations of equipment will be sought.

Revenue Narrative 2
Donors: There is a strong support in the region for new engineering programs at UVU. Historically, companies in the Wasatch Front have provided major gifts to strengthen various programs in the College of Technology and Computing. The new program will work with the development office to seek major gifts from donors.

Engineering Initiative: In 2017, UVU was given $480,000 to strengthen its pre-engineering program through the Engineering Initiative Funds. The university will pursue the Engineering Initiative Funds should they become available in the coming years.

Section VI: Program Evaluation

The electrical engineering program objectives at UVU will be monitored by the program's advisory board, employers, alumni, faculty, and students.

***Program Objectives* - The mission of the electrical engineering program at Utah Valley University (UVU) is to provide a strong engineering foundation with a hands-on component to prepare professionally competent electrical engineers of integrity who serve the engineering needs of the region and the globally interdependent community. Within three to five years of graduation, alumni of the program are expected to have:

- demonstrated their ability to perform electrical engineering analysis to solve problems and to communicate technical information effectively in an engineering or a professional team environment
- advanced professionally by given more responsibilities; or have successfully completed a graduate level degree
- continued their professional development through workshops; or earning professional licensure
- served in their professional organizations and/or local communities

** ABET requires that each engineering program to publish the Students' Learning Outcomes and the Program Objectives. The Students' learning outcomes were discussed previously under the heading of External Review and Accreditation. The Program Objectives as required by ABET must state what the alumni of the program are expected to have demonstrated or accomplished within three to five years of graduation.

Student Standards of Performance

The computer engineering program at UVU is accredited by ABET. The BSEE program will be evaluated, based on ABET criteria, using the same formative and summative assessment tools and procedures that are already in place for the computer engineering program. In addition, as mentioned previously, the present Dean of the College of Technology and Computing is a registered licensed engineer with extensive ABET accreditation experience. He will work closely with the faculty to ensure that all ABET accreditation criteria are met and proper assessment tools are used.

Utah System of Higher Education
New Academic Program Proposal
Cover/Signature Page - Full Template

Institution Submitting Request: Utah Valley University

Proposed Program Title: BS in Civil Engineering
Sponsoring School, College, or Division: Technology and Computing
Sponsoring Academic Department(s) or Unit(s): Construction Technologies
Classification of Instructional Program Code: 14.0801
Min/Max Credit Hours Required to Earn Degree: 126
Proposed Beginning Term: Fall 2018
Institutional Board of Trustees' Approval Date:

Program Type (check all that apply):

☐	Associate of Applied Science Degree (AAS)
☐	Associate of Arts Degree (AA)
☐	Associate of Science Degree (AS)
☐	Specialized Associate Degree (specify award type)
☐	Other (specify award type)
☐	Bachelor of Arts Degree (BA)
☑	Bachelor of Science Degree (BS)
☐	Professional Bachelor Degree (specify award type)
☐	Other (specify award type)
☐	Master of Arts Degree (MA)
☐	Master of Science Degree (MS)
☐	Professional Master Degree (specify award type)
☐	Other (specify award type)
☐	Doctoral Degree (specify award type)
☐	K-12 School Personnel Program
☐	Out of Service Area Delivery Program

Chief Academic Officer (or Designee) Signature:
I, the Chief Academic Officer or Designee, certify that all required institutional approvals have been obtained prior to submitting this request to the Office of the Commissioner.
Signature: **Date:**

Utah System of Higher Education
Program Description - Full Template

Section I: The Request

The Construction Technologies Department in the College of Technology and Computing at Utah Valley University requests approval to offer a Bachelor of Science in Civil Engineering effective Fall 2018.

Section II: Program Proposal

Program Description

Civil engineering is the oldest engineering discipline. The Bachelor of Science in Civil Engineering prepares graduates to apply mathematical and scientific principles to the design and supervision of infrastructure components including: buildings, roads, bridges, dams, tunnels, mass transit systems, and airports. Civil engineers are also involved in environmental studies and the design and supervision of municipal water supplies and sewage systems.

The proposed BS in Civil Engineering (BSCE) will provide combined classroom and laboratory components and will prepare students to work for local, state, and federal governments, as consultants, construction supervisors, city engineers, and public utility and transportation agencies. The program will also prepare students for further studies at the graduate level should they decide to do so.

Consistency with Institutional Mission

The mission of the Utah Valley University reads: "Utah Valley University is a teaching institution which provides opportunity, promotes student success, and meets regional educational needs. UVU builds on a foundation of substantive scholarly and creative work to foster engaged learning. The university prepares professionally competent people of integrity who, as lifelong learners and leaders, serve as stewards of a globally interdependent community." The BS in Civil Engineering (BSCE) degree fits well into UVU's mission by meeting the educational need of the region and by augmenting the existing STEM offerings. It will increase the number of engineering graduates needed in the region to address the projected economic growth and development in Utah County. Moreover, the BSCE program will prepare professionally competent people of integrity by following the curriculum guidelines of ABET and the American Society of Civil Engineers (ASCE) code of ethics. The proposed program will also further strengthen existing relationships and create new partnerships with UDOT and the construction industry.

Section III: Needs Assessment

Program Rationale

Utah County is one of the fastest growing regions in the State and home to a growing number of people and companies. To support this growth, it becomes necessary to have a steady supply of civil engineers who can design, build, and maintain the necessary infrastructure to sustain the growth. Unfortunately, this growing need for more civil engineers is not being fulfilled by the two major public institutions in the state (i.e., University of Utah and Utah State University), and many companies surveyed emphasize their struggle to find qualified candidates to fill positions and state that they often have to go out-of-state to recruit engineers. The lack of having enough civil

engineering graduates to support the growing infrastructure needs could lead to the departure of some companies and prevent others from considering Utah for expansion or establishment of their enterprises.

UVU currently has a computer engineering program that meets part of the high tech needs. However, there are still considerable needs for civil, electrical, and mechanical engineers. The proposed BSCE program would complement the existing computer engineering program and the proposed electrical and mechanical engineering programs to provide additional desperately needed engineers in the Wasatch Front. The UVU civil engineering program will also enhance the position of the State of Utah in providing an attractive infrastructure to attract more people and companies to the State.

Labor Market Demand

UVU is proposing to develop a civil engineering program to address a critical shortage of engineers in the State. Bureau of Labor Statistics (BLS), as part of its long-term (2014-2024) forecast, projects a growth rate of 8.4% for civil engineers with similar estimates for Utah. According to BLS, the 2016 median pay for civil engineers in Utah is $81,260, which is significantly higher than the Utah median wage of $33,990. Moreover, according to data provided by UVU Institutional Research & Information (IRI) Center, as of June 7, 2017, there were 553 openings for civil engineers and a supply of only 235 graduates, resulting in a shortage of 318 unfilled positions in Utah (Source: Economic Development and Employer Planning System (EDEPS)).

Student Demand

During 2014-2016, the number of students with majors in pre-engineering at UVU increased by 17% (From 369 to 432; approximately an addition of 32 students per year). The pre-engineering program at UVU has been serving as a feeder to the engineering programs at the University of Utah, Utah State University, BYU, and other institutions.

Since Utah Valley University does not offer any BS degrees in civil, electrical, and mechanical engineering, a study was conducted to determine how many UVU pre-engineering students are transferring to other universities to seek these degrees. The IRI Center at UVU submitted the names of 998 students who majored in pre-engineering or engineering technology programs between Fall 2009 and Fall 2014 but had not graduated from UVU to the National Student Clearinghouse (NSC). NSC is a nonprofit trusted organization that partners with the higher education community to provide verification and reporting services to most of the postsecondary institutions in the US. The NSC found that 333 students or 33% of UVU pre-majors had transferred to other institutions to complete their engineering degrees; it is unclear what happened to the remaining 67%. Furthermore, an informal survey of more than 100 pre-engineering students at UVU conducted during Spring 2012 indicated significant student demand for upper division engineering courses. Of those who responded, 87% of pre-engineering students would be interested in taking upper division courses to graduate from UVU with a Bachelor of Science in Engineering. An additional survey of student opinion was also conducted in Fall 2016 by UVU's IRI Center. Included in this survey was the question: "*Is there a major or degree that you are interested in that UVU doesn't offer?*" Of the 877 respondents, 254 respondents indicated "*Yes*," and specified the programs they would like UVU to offer. Of responses with the highest frequencies, engineering was the 2nd most desired bachelor program currently not offered at UVU. From this representative student survey, UVU's IRI estimated that of the 19,469 non-high school, bachelor degree seeking students at UVU in Fall 2016, 4% or 779 undergraduates would possibly be interested in majoring in a Bachelor of Science in Engineering.

Finally, in April 2017, a survey asked the pre-engineering students who were about to finish their AS degree a simple question: "*If UVU were to offer other engineering programs, besides computer engineering, would you be interested in completing your engineering degree at UVU?*" All 79 students who participated in the survey (100%) answered "*Yes*" to the question. The results of the survey show that students who are already here in the pre-engineering program prefer not to transfer to another institution to complete their degrees. Having a BSCE program at UVU reduces the disruptions that normally occur when non-traditional students transfer to another institution. The continuity would also allow for a greater success in graduation rate.

Similar Programs

The civil engineering programs offered by the University of Utah and Utah State University were examined carefully. The core of these programs are similar to the proposed program. Whereas, the enrollment at the University of Utah and USU are made up of mostly traditional students, UVU's enrollment consists of mostly non-traditional students. As mentioned in the previous section, surveys conducted by UVU show that students who are already at UVU in the pre-engineering program prefer not to transfer to another institution to complete their degrees. This preference is due to elimination of disruptions that occur in the lives of the non-traditional students who are married with children and live and work in the area; for example, transferring to the University of Utah would require them to commute to Salt Lake City every day. The cost of fuel or public transportation, traffic, time commitment, and weather are reasons for not wanting to commute. Moreover, the majority of these students cannot get accepted to BYU because of BYU's relatively high admission standards for transfer students.

The cost of adding the BSCE program at UVU is relatively small; only three additional faculty members are needed (two of which will be funded by the Engineering Initiative); the existing laboratory facilities in the College of Technology and Computing are sufficient to accommodate new engineering programs in civil, electrical, and mechanical engineering. With this relatively low cost, UVU will be positioned to better serve the needs of the local student population, particularly, the non-traditional students, and the infrastructure needs of the region that have accompanied the growth.

Collaboration with and Impact on Other USHE Institutions

The Dean of the College of Technology and Computing has met with the Dean of the College of Engineering at the University of Utah and has discussed UVU's engineering program proposals and the rationale for their offerings. UVU will continue to collaborate with the University of Utah to send students who are interested in Bioengineering, Chemical Engineering, Materials Science and Engineering, or other fields to complete their degrees. Additionally, the University of Utah places a great deal of focus on research. As a result, among UVU's BSCE program objectives are to prepare students for further studies at the graduate level, particularly, at the University of Utah should they decide to do so. At the time this proposal was being prepared, Utah State University was searching for a dean for the College of Engineering, consequently, UVU's Dean of Technology and Computing did not reach out to USU.

External Review and Accreditation

UVU has formed an advisory board to review the proposed engineering programs and provide feedback. The proposed BSCE program is designed to meet the ABET accreditation requirements. The program will seek ABET accreditation in 2020, after it has produced its first graduates. ABET has eight General Criteria that must be met. The eight General Criteria cover: 1) Students; 2) Program Educational Objectives; 3) Student Outcomes; 4) Continuous Improvement; 5) Curriculum; 6) Faculty; 7) Facilities; and 8) Institutional Support. For example, Criterion 2

(Program Educational Objectives) specifically requires that the program:

- Provide the institutional mission statement,
- List the program educational objectives and state where these can be found by the general public,
- Describe how the program educational objectives are consistent with the mission of the institution,
- List the program constituencies. Describe how the program educational objectives meet the needs of these constituencies,
- Describe the process that periodically reviews the program educational objectives including how the program's various constituencies are involved in this process. Describe how this process is systematically utilized to ensure that the program's educational objectives remain consistent with the institutional mission, the program constituents' needs and these criteria.

As another example, Criterion 3 (Student Outcomes) requires that the program:

- List the student outcomes for the program and indicate where the student outcomes are documented. The proposed BSCE program will use the following ABET's Student Outcomes (a) through (k). These outcomes are used for all engineering disciplines including civil engineering:

    a. an ability to apply knowledge of mathematics, science, and engineering;
    b. an ability to design and conduct experiments, as well as to analyze and interpret data;
    c. an ability to design a system, component, or process to meet the desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturing, and sustainability;
    d. an ability to function on multi-disciplinary teams;
    e. an ability to identify, formulate, and solve engineering problems;
    f. an understanding of professional and ethical responsibility;
    g. an ability to communicate effectively;
    h. the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context;
    i. a recognition of the need for, and the ability to engage in life-long learning;
    j. a knowledge of contemporary issues;
    k. an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
- Describe how the student outcomes prepare graduates to attain the program educational objectives. (The BSCE program education objectives are shown at the end of this proposal under the heading of Program Assessment/Program Objectives)

Furthermore, ABET requires that each engineering program must have an assessment process with documented results. Evidence must be given that the results are applied to the further development and improvement of the program. The assessment process must demonstrate that the outcomes important to the mission of the institution and the objectives of the program, including those listed above, are being measured. Evidence that may be used includes, but is not limited to the following: student portfolios, including design projects; nationally-normed subject content examinations; alumni surveys that document professional accomplishments and career development activities; employer surveys; and placement data of graduates.

As mentioned previously, the proposed BSCE program presented in this document has been designed to meet the ABET requirements and the goals and objective statements have been derived

with that intent. The present Dean of the College of Technology and Computing is a registered licensed engineer with extensive ABET accreditation experience. He will work closely with the faculty to ensure that all ABET accreditation criteria are met. Furthermore, the existing computer engineering program at UVU is already ABET accredited; the proposed BSCE program will follow the computer engineering program's model of assessment.

Section IV: Program Details

Graduation Standards and Number of Credits

1. Completion of a minimum of 126 semester credits, with a minimum of 40 upper-division credits.
2. Overall grade point average of 2.5 or above, with a minimum grade of C in all discipline core and elective requirements.
3. Residency hours - minimum of 30 credit hours through course attendance at UVU. Ten of these hours must be within the last 45 hours earned. At least 12 of the credit hours earned in residence must be in approved CIVE courses.
4. All transfer credits must be approved in writing by UVU and the civil engineering program coordinator.
5. No more than 80 semester hours and no more than 20 hours in CIVE courses of transfer credit.
6. No more than 6 semester hours may be earned through independent study.
7. Successful completion of at least one Global/Intercultural course.

Admission Requirements

To be admitted to the BSCE program, a student must complete the foundation courses in Mathematics (MATH 1210, 1220, 2210, 2250); Physics (PHYS 2210, 2215, 2220, 2225); Chemistry (CHEM 1210, 1215); English (ENGL 1010, 2020); Engineering (ENGR 1000, 2010, 2030, 2140, 2160); Computer Aided Drafting (EGDT 1040), and Surveying Applications and Field Techniques I (EGDT 1400) with a minimum grade of C in these courses and grade point average of 2.5 or above. A student not meeting all of the admission requirements, may request in writing, a provisional admission status for a semester from the department. The provisional admission status must be approved by the civil engineering program coordinator.

Curriculum and Degree Map
Program Curriculum:

Course Number	New Course	Course Title	Credit Hours
General Education Courses			
ENGL 1010		Introduction to Writing	3
ENGL 2010		Intermediate Writing	3
MATH 1210		Calculus I	5
American Institutions: Student will complete one of the following:			3
HIST 2700		US History to 1877	
HIST 2710		US History since 1877	
HIST 1700		American Civilization	

HIST 1740		US Economic History	
POLS 1000		American Heritage	
POLS 1100		American National Government	
Student will complete the following:			
PHIL 2050		Ethics and Values	3
HLTH 1100		Personal Health and Wellness	2
Or PES 1097		Fitness for Life (2.0)	
Distribution Courses:			
COMM 1020		Public Speaking	3
Fine Arts (choose from the list)+			3
Biology (choose from the list)+			3
COMM 2110		Interpersonal Communications	3
PHYS 2210		Physics for Scientist and Engineers I	4
CHEM 1210		Principles of Chemistry I	4
General Education Subtotal:			39
+ see published computer engineering list of GE			
Required Courses			
CHEM 1215		Principles of Chemistry I Laboratory	1
EGDT 1040		Computer Aided Drafting--AutoCAD	3
EGDT 1400		Surveying Applications and Field Techniques I	3
ENGR 1000		Introduction to Engineering	3
ENGR 2010		Engineering Statics	3
ENGR 2030		Engineering Dynamics	3
ENGR 2140		Mechanics of Materials	3
ENGR 2160		Introduction to Materials Science and Engineering	3
ENGR 2450		Computational Methods for Engineering Analysis	3
ENVT 1110		Introduction to Environmental Management	3
MATH 1220		Calculus II	5
MATH 2250		Differential Equations and Linear Algebra	4
MATH 2210		Calculus III	3
CIVE 3010	X	Introduction to Transportation Engineering	3
CIVE 3130	X	Structural Analysis	3
CIVE 3210	X	Geotechnical Engineering	3
ME 3310	X	Fluid Mechanics	3
CIVE 3320	X	Hydraulics and Hydrology	3
CIVE 3335	X	Civil Engineering Experimentation I	2
CIVE 4135	X	Civil Engineering Experimentation II	2
CIVE 4510	X	Civil Engineering Seminar I	1
CIVE 4810	X	Capstone I	3
CIVE 4820	X	Capstone II	3
PHYS 2215		Physics for Scientists and Engineers I Lab	1
PHYS 2220		Physics for Scientists and Engineers II	4
PHYS 2225		Physics for Scientists and Engineers II Lab	1

Required Course Credit Hour Sub Total:			72
Elective Courses (**15 credit hours are required**; **two courses may be taken from Technical Elective list; at least six credit hours must be at 4000 level)**			
CIVE Elective Courses			
CIVE 3140	X	Structural Steel Design	3
CIVE 3150	X	Reinforced Concrete Design	3
CIVE 3610	X	Environmental Engineering	3
CIVE 4010	X	Traffic Engineering	3
CIVE 4020	X	Highway Planning and Design	3
CIVE 4210	X	Foundation Design	3
CIVE 4310	X	Storm Water Management	3
CIVE 4320	X	Open Channel Flow	3
ME 4420	X	Finite Element Methods	3
CIVE 4610	X	Water and Wastewater	3
CIVE 490R	X	Advanced Current Topics in Civil Engineering	1*
Technical Elective Courses			
CMGT 2025		Heavy Civil Plans and Specification	3
CMGT 3000		Principles of Construction Scheduling	3
CMGT 3030		Principles of Construction Estimating	3
CMGT 3040		Construction Job Site Management	3
CMGT 3050		Construction Equipment, Planning and Logistics	3
CMGT 3160		Building Information Modeling	3
CMGT 4010		Construction Contracts	3
CMGT 4020		Construction Project Management	3
CMGT 405G		Global Sustainability and the Built Environment	3
LEGL 3000		Business Law	3
ENVT 3280		Environmental Law	3
ENVT 3290		Environmental Permits and Reports	3
ENVT 3330		Water Resources Management	3
ENVT 3850		Environmental Policy	3
GEO 3000		Environmental Geochemistry	
Students may also take upper level computer, electrical, and mechanical engineering classes as technical electives in consultation with their faculty advisors and approval of the department offering the courses.			
Elective Credit Hour Subtotal:			15
Core Curriculum			126

Program Curriculum Narrative

**The Advanced Current Topics in Civil Engineering (490R) provides exposure to emerging topics and technologies of current interest in civil engineering. Varies each semester (1 to 3 credits)*

depending upon the state of technology. Maybe repeated for a maximum of 6 credits toward graduation without prior written department approval.

Degree Map:

Fall of First Year (Course Prefix and Number)	Course Title	Credit Hours
MATH 1210	Calculus I	5
CHEM 1210	Principles of Chemistry	4
CHEM 1215	Principles of Chemistry Lab	1
ENGL 1010	Introduction to Writing	3
ENGR 1000	Introduction to Engineering	3
Spring of First Year (Course Prefix and Number)	**Course Title**	**Credit Hours**
MATH 1220	Calculus II	5
PHYS 2210	Physics for Scientists and Engineers I	4
PHYS 2215	Physics for Scientists and Engineers I Lab	1
ENGL 2010	Intermediate Writing	3
EGDT 1040	Computer Aided Drafting--AutoCAD	3
Fall of Second Year (Course Prefix and Number)	**Course Title**	**Credit Hours**
MATH 2250	Differential Equations and Linear Algebra	4
PHYS 2220	Physics for Scientists and Engineers II	4
PHYS 2225	Physics for Scientists and Engineers II Lab	1
ENGR 2010	Engineering Statics	3
ENVT 1110	Introduction to Environmental Management	3
Spring of Second Year (Course Prefix and Number)	**Course Title**	**Credit Hours**
MATH 2210	Calculus III	3
EGDT 1400	Surveying Applications and Field Techniques I	3
ENGR 2030	Engineering Dynamics	3
ENGR 2140	Mechanics of Materials	3
ENGR 2160	Introduction to Materials Science and Engineering	3
Health	Choose from the GE approved personal Health List	2
Fall of Third Year (Course Prefix and Number)	**Course Title**	**Credit Hours**
ENGR 2450	Computational Methods for Engineering Analysis**	3
CIVE 3010	Transportation Engineering	3
CIVE 3130	Structural Analysis	3
ME 3310	Fluid Mechanics	3

Biology	Choose from the GE approved Biology list	3
Spring of Third Year (Course Prefix and Number)	Course Title	Credit Hours
CIVE 3210	Geotechnical Engineering	3
CIVE 3320	Hydraulics and Hydrology	3
CIVE 3335	Civil Engineering Experimentation I	2
COMM 2110	Interpersonal Communications	3
	Technical Elective	3
COMM 1020	Public Speaking	2
Fall of Fourth Year (Course Prefix and Number)	Course Title	Credit Hours
CIVE 4135	Civil Engineering Experimentation II	2
CIVE 4510	Civil Engineering Seminar	1
CIVE 4810	Capstone I	3
CIVE xxxx	Elective	3
	Technical Elective	3
Fine Arts	Choose from the GE approved Fine Arts Elective	3
Spring of Fourth Year (Course Prefix and Number)	Course Title	Credit Hours
CIVE 4820	Capstone II	3
CIVE xxxx	4000 level Elective	3
CIVE xxxx	4000 level Elective	3
American Institution	Choose from the GE approved American Institution list	3
PHIL 2050	Ethics and Values	3

** The pre-requisite requirement for this course is to be changed in 2017-2018.

Section V: Institution, Faculty, and Staff Support

Institutional Readiness

The civil engineering program will be housed in the Construction Technologies Department. The proposed program will not impact the delivery of other undergraduate or lower-division education.

Faculty

Currently, there is one faculty member (with a Ph.D. degree in civil engineering) in the Construction Technologies Department. There are also two faculty members (with Ph.D. degrees in mechanical engineering) in the pre-engineering program. These two full-time faculty members along with adjunct faculty members have been teaching all the required engineering courses in the pre-engineering program. As shown previously in the degree map, students in the BSCE program will need to take many of the same courses as pre-engineering students during Year 1 and Year 2. Two additional tenure-track faculty members will be hired this coming academic year using the Engineering Initiative Funds. The BSCE program will then need only one more tenure-track faculty member to cover all the courses.

Part I. Department Faculty/Staff

	# Tenured	# Tenure -Track	# Non - Tenure
Faculty: Full Time with Doctorate	3		
Faculty: Part Time with Doctorate			
Faculty: Full Time with Masters	2		
Faculty: Part Time with Masters			1
Faculty: Full Time with Baccalaureate	2		
Faculty: Part Time with Baccalaureate			4
Teaching / Graduate Assistants			
Staff: Full Time			
Staff: Part Time			

Part II. Proposed Program Faculty Profiles

List current faculty within the institution -- with academic qualifications -- to be used in support of the proposed program(s).

First Name	Last Name	Tenure (T) / Tenure Track (TT) / Other	Degree	Institution where Credential was Earned	Est. % of time faculty member will dedicate to proposed program.
Full Time Faculty					
James	Cox	T	Ph.D.	University of Utah	50%
Part Time Faculty					

Part III: New Faculty / Staff Projections for Proposed Program

	# Tenured	# Tenure - Track	# Non - Tenure Track	Academic or Industry Credentials Needed	Est. % of time to be dedicated to proposed program.
Faculty: Full Time with Doctorate		3			100%
Faculty: Part Time with Doctorate					
Faculty: Full Time with Masters					
Faculty: Part Time with Masters					
Faculty: Full Time with Baccalaureate					
Faculty: Part Time with Baccalaureate					
Teaching / Graduate Assistants					
Staff: Full Time					
Staff: Part Time					

Staff

The topic of advising for the new civil engineering program has been discussed with Ms. Julie Harps who is the manager of academic advising in the College of Technology and Computing. The College has the capacity to advise the projected number of students for this program within existing resources.

Student Advisement

As mentioned previously, the College has the capacity to advise more students. At least two of the academic advisors will be trained to help students with the new BSCE program. New students and students who are changing their major to civil engineering will be required to meet with these advisors to discuss program and graduation requirements and to develop a graduation plan. Students will continue to interact with their advisors on regular basis to stay abreast of program updates, their academic standings (good, probation, warning, etc.), and to modify their graduation plan, if necessary.

A civil engineering faculty member will also be assigned to a student as a faculty advisor. The role of the faculty advisor is to provide general guidance regarding the BSCE curriculum and potential careers in civil engineering. Each faculty advisor will also monitor student's progress and detect academic problems before they become serious. This approach will allow for the development of a closer, more interactive relationship between the student and the faculty advisor. The student will keep his/her faculty advisor as long as he/she feels that advising has been productive. A student may request a change in his/her assigned advisor at any time by contacting the BSCE program coordinator. It will be mandatory for the students to meet with their faculty advisors at least once per semester to review progress and discuss plans for the next semester.

Library and Information Resources

The Ira & Mary Lou Fulton Library at the Utah Valley University Library cultivates a dynamically changing collection of books, ebooks, videos, and streamed media that relate to civil engineering and associated technologies. As the educational and research requirements of civil engineering evolve in professional practice and theory, the Fulton Library collection development focus will keep pace.

Initial "one-stop-shopping" for articles/books/videos relating to civil engineering subjects can be done by means of the Fulton Library's website OneSearch feature, which allows a single search to simultaneously span multiple databases and includes a search of the library catalog's books, eBooks and videos. (Each individual database can also be searched within the scope of the respective database website.)

Access to online engineering resource materials at Fulton Library:

1. IEEE Xplore Digital Library:
   IEEE Xplore Digital Library offers full text articles from 151 computer science and engineering periodicals, from 1988 to the present, and over 900 conference proceedings from 1995 to the present. Technical standards, ebooks, and educational courses are also included. It includes peer-review content on topics such as information systems and data processing, computer security, bioinformatics, history of computing, mobile computing, and much more. Complete full text content available.

2. ScienceDirect Journals:
   ScienceDirect offers full text access to more than 1,600 peer-reviewed journals in biology, psychology, technology, economics, nursing, health sciences, law, and more. Full text coverage ranges from 1995 to the present. This database can also be used to search the entire collection of over 9,000 titles from their first issues to the present. Some full-text content is available.

3. Applied Science and Technology:
   This database indexes nearly 800 journals and magazines in science, engineering, mechanics and technology and includes articles on computer science and security, robotics, chemistry, fire science, geology and earth sciences, waste management, space science, oceanography and more. Peer-reviewed articles are available. Coverage spans 1983 to the present. Some full text content available.

4. Computer Source:
   Computer Source can be used to locate articles in a wide variety of technology fields such as robotics, computer programming and security, artificial intelligence, information systems, and more. It includes articles from almost 450 journals, magazines, and newsletters published since 1985. Some content is peer-reviewed. Some full text content available.

5. Academic Search Premier:
   This multidisciplinary database contains nearly 3,900 peer-reviewed journals in addition to more than 8,500 journals, magazines, and newspapers. Use this database to search for articles in all subjects including art, literature, politics, science and technology, health, music, popular culture, history, and many more. Coverage ranges from 1975 to the present. Some full text content available.

6. Web of Science:
   Web of Science database provides researchers, administrators, faculty, and students with quick, powerful access to the bibliographic and citation information for journal articles in the sciences that they need to find research data, analyze trends, and more.

The Fulton Library is currently in negotiations to purchase access to the Compendex database. Compendex is an engineering bibliographic database published by Elsevier Inc. It indexes scientific literature pertaining to engineering materials. Beginning in 1884, it was compiled by hand under the original title of Engineering Index. The name "Compendex" stands for COMPuterized ENgineering inDEX. We anticipate this will be in place Fall of 2017 or sometime soon thereafter.

Full text access to the thousands of journal articles is licensed to Fulton Library patrons. Nevertheless, off-campus web access to library patrons is enabled by means of a CAS (central authentication service) login authentication layer that is enforced by the Fulton Library EZProxy server.

Fulton Library Catalog Holdings for Engineering Technology:
The Library catalog contains print books, eBooks (Safari, NetLibrary, EBSCO eBooks and eBrary), videos (DVD, Blue Ray, VHS) as well as online, streamed videos.
Most materials for Electrical Engineering (EE), etc. are covered in the Library of Congress call number areas:
TA1-2040 Engineering (General).
TA174-710 Civil Engineering;

Additional call numbers may apply wherein other minor subject areas also give this subject attention (e.g. coastal engineering, construction engineering, control engineering, earthquake engineering, environmental engineering, forensic engineering, geotechnical engineering, materials science and engineering, metallurgy, outside plant engineering, soil mechanics, statics, strength of materials, structural engineering, surveying, transportation engineering, municipal or urban engineering, water resources engineering).

Current library catalog holdings are approximately as follows:

Civil Engineering related books (print): 654
Civil Engineering related eBooks: 717
Civil Engineering related videos: 17
Civil Engineering related streamed videos: 65
Civil Engineering related print periodicals: 45

Acquisition of Materials Through Other Libraries and Partners:
A patron may often seek information (articles, books, etc.) that are not directly owned or licensed by the Fulton Library. In such cases, a desired item may be accessed from other libraries throughout the United States by means of our Interlibrary Loan Service (ILL). A requested article full text is emailed to a requester within one business day. Print books are generally located, received and made available within seven business days. In addition, Fulton Library patrons have access to check out items from partner libraries of higher education in the Utah/Idaho/Nevada area (BYU, U of Utah, Utah State, etc.) by means of a Utah Academic Library Consortium (UALC) agreement.

Support for Related Research and Inquiries:
Tim Rowley is currently the Fulton Library liaison librarian for faculty and student support for electrical engineering and related fields of study. He may be contacted to request additional books, subscriptions or to seek support regarding the use of Engineering information resources for research or program support.

Projected Enrollment and Finance

Part I.

Project the number of students who will be attracted to the proposed program as well as increased expenses, if any. Include new faculty & staff as described above.

Three Year Projection: Program Participation and Department Budget						
	2017-2018	New Program				
		2018-19	2019-20	2020-21	Year 4	Year 5
Student Data						
# of Majors in Department	229					
# of Majors in Proposed Program(s)		10	20	30		
# of Graduates from Department	29					
# Graduates in New Program(s)		0	10	20		
Department Financial Data						
	Department Budget					
	Year Preceding Implementation (Base Budget)	Year 1	Year 2	Year 3		
Project additional expenses associated with offering new program(s). Account for New Faculty as stated in above in, "Faculty Projections."		Addition to Base Budget for New Program(s)	Addition to Base Budget for New Program(s)	Addition to Base Budget for New Program(s)		
EXPENSES – nature of additional costs required for proposed program(s)						
List salary benefits for additional faculty/staff each year the positions will be filled. For example, if hiring faculty in year 2, include expense in years 2 and 3. List one-time operating expenses only in the year expended.						
Personnel (Faculty & Staff Salary & Benefits)	$309,577	$138,963	$387,111	$387,111		
Operating Expenses (equipment, travel, resources)	$21,772	$18,000	$13,000	$13,000		
Other:		0	0	0		
TOTAL PROGRAM EXPENSES		$0	$0	$0		
TOTAL EXPENSES	$331,349	$156,963	$400,111	$400,111		
FUNDING – source of funding to cover additional costs generated by proposed program(s)						
Describe internal reallocation using Narrative 1 on the following page. Describe new sources of funding using Narrative 2.						
Internal Reallocation						
Appropriation						
Special Legislative Appropriation		$240,000	$240,000	$240,000		
Grants and Contracts						
Special Fees						
Tuition		$76,084	$161,265	$177,805		
Differential Tuition (requires Regents approval)						
Total Revenue		$316,084	$401,265	$417,805		
PROPOSED PROGRAM FUNDING		$156,963	$400,111	$400,111		
TOTAL DEPARTMENT FUNDING	$0	$0	$0	$0		
Difference						
Funding - Expense		$159,121	$1,154	$17,694		

Part II: Expense explanation

Expense Narrative

The 2017 allocation of Engineering Initiative funds supported two Civil Engineering faculty positions. The Construction Management department currently has a full-time faculty member with a PhD in Civil Engineering who will provide support for the program in his area of expertise. In order to cover the breadth of topics, an additional Civil Engineering faculty will be needed. Tuition generated by the projected student enrollment will provide funding for the additional Civil Engineering faculty, hourly faculty, hourly staff, and operating funds.

The proposed BSCE program will need three additional tenure-track faculty members at the assistant professor level (~$130,000 x 3 = $390,000 including fringe benefits).

Part III: Describe funding sources

Revenue Narrative 1

The Dean of the College of Technology and Computing has evaluated existing resources and has identified human and physical resources that can be used in the proposed civil engineering program:

- Currently, there is capacity in the College to advise more students.
- The existing Material Testing of the Construction Technologies Department can be used in the BSCE program. The Structural Testing equipment of pre-engineering and the proposed mechanical engineering can be shared with the BSCE program. The Construction Management Department has received a generous gift from the Clyde companies; part of the available funds can be used to purchase hydraulics and hydrology equipment.

Revenue Narrative 2

There is a strong support in the region for new engineering programs at UVU. Historically, companies in the Wasatch Front have provided major gifts to strengthen various programs in the College of Technology and Computing. The new program will work with the development office to seek major gifts from donors.

In 2017, UVU was given $480,000 to strengthen its pre-engineering program through the Engineering Initiative Funds. The university will pursue the Engineering Initiative Funds should they become available in the coming years.

Section VI: Program Evaluation

The civil engineering program objectives at UVU will be monitored by the program's advisory board, employers, alumni, faculty, and students.

***Program Objectives* - The mission of the civil engineering program at Utah Valley University (UVU) is to provide a strong engineering foundation with a hands-on component to prepare professionally competent civil engineers of integrity who serve the engineering needs of the region and the globally interdependent community. Within three to five years of graduation, alumni of the program are expected to have:

- demonstrated their ability to perform civil engineering analysis to solve problems and to communicate technical information effectively in an engineering or a professional team environment
- advanced professionally by given more responsibilities; or have successfully completed a graduate level degree
- continued their professional development through workshops; or earning professional licensure
- served in their professional organizations and/or local communities

  ** ABET requires that each engineering program publish the Students' Learning Outcomes and the Program Objectives. The Students' learning outcomes were discussed previously under the heading of External Review and Accreditation. The Program Objectives as required by ABET must state what the alumni of the program are expected to have demonstrated or accomplished within three to five years of graduation.

Student Standards of Performance

The computer engineering program at UVU is accredited by ABET. The BSCE program will be evaluated, based on ABET criteria, using the same formative and summative assessment tools and procedures that are already in place for the computer engineering program. In addition, as mentioned previously, the present Dean of the College of Technology and Computing is a registered licensed engineer with extensive ABET accreditation experience. He will work closely with the faculty to ensure that all ABET accreditation criteria are met and proper assessment tools are used.

UVU BOARD OF TRUSTEES
Agenda Item Coversheet

DATE:	**October 26, 2017**
TITLE:	**Consent Calendar**
EXECUTIVE/RESPONSIBLE STAFF MEMBER:	**Justin Jones, Chief of Staff**
SUBJECT:	**Consent Calendar**
BACKGROUND:	The Trustees are being asked to review the following items for a consent vote: a.) Minutes of August 24, 2017 b.) Investment Reports for July 2017 and August 2017 c.) Institutional Discretionary Funds 2017-18 Budget Revised and 16-17 Actuals d.) 2016-17 Auxiliary Report e.) 2016-17 Service Enterprise Report f.) Assistant General Counsel Position Request
ALTERNATIVES:	**Approve** as presented, "I move to approve the Consent Calendar." • **Amend** and approve, "I move to approve, as amended…" • **No action**, "I move that we go to the next agenda item…"
FINANCIAL IMPACT:	
EXHIBITS:	a.) Minutes of August 24, 2017 b.) Investment Reports for July 2017 and August 2017 c.) Institutional Discretionary Funds 2017-18 Budget Revised and 16-17 Actuals d.) 2016-17 Auxiliary Report e.) 2016-17 Service Enterprise Report

UVU BOARD OF TRUSTEES

August 24, 2017
4 p.m. – SC 213c, Utah Valley University

Board of Trustee Members Present
Karen L. Acerson
James Clarke
John Gappmayer
Rick Nielsen
Rob Smith
Jack Sunderlage
Jill Taylor
Paul Thompson
R. Duff Thompson

Guests
Kimberly Bojorquez
Braley Dodson
Stace Hall
Jeff Johnson
Jefferson Moss
Abraham Teng
Stephen Whyte
Don Wilson

UVU Regular Attendees
Karen Clemes, General Counsel
Scott Cooksey, Vice President Development and Alumni
Matthew S. Holland, President
Linda Makin, Vice President Planning, Budget and HR
Cameron Martin, Vice President University Relations
Shalece Nuttall, PACE President
Jeffery Olson, Senior Vice President Academic Affairs
Val Peterson, Vice President Finance and Administration
Kyle Reyes, Special Assistant to the President for Inclusion
Michelle Taylor, Vice President Student Affairs
Craig Thulin, Faculty Senate President
Katie Zabriskie, Assistant Associate

First Vice Chair Trustee D. Thompson brought the meeting to order and welcomed President Holland back to UVU's campus. Trustee D. Thompson noted VP Michelle Taylor's new position and impending departure from UVU. Gratitude was expressed for her work in Student Affairs.

I. ACTION

1. New Trustee Oaths

At the request of First Vice Chair D. Thompson, Second Vice Chair Jack Sunderlage administered the Oath of Office before the full Board of Trustees to new Trustee Rick Nielsen.

2. Requisitions

The Trustees were presented with two requisitions by VP Val Peterson. The first was a request for approval to pay $815,000 to US Foods Inc. for services provided during the 2017-18 fiscal year. Dining services will issue resale payment throughout the year to cover food service expenses for catering and several onsite vendors. The second was a request for approval to pay $834,514 to Wells Fargo Equipment Finance over the course of the 2017-18 fiscal year. Payments will be made quarterly in the amount of roughly $200,000 for lease of a substation on campus. Trustee Jill Taylor motioned to approve the requisition for payment to US Foods Inc. in the amount of $815,000 and the requisition for payment to Wells Fargo Equipment Finance in the amount of $834,514. Trustee Sunderlage seconded. The motion carried without opposition.

3. Academic Programs

The Trustees were presented with a request to approve the addition of the AAS in Automotive Power Sports to UVU's programmatic offerings. The two-year degree is heavily supported by major industry corporations (Polaris, Stihl, Kohler). Polaris has given UVU access to its bronze and silver curriculum to use in conjunction with this program; will look to have UVU become a gold certified training program in the future. It was noted that the need for this program is strong in the area and the program cost is minimal to UVU because the tooling and equipment is already owned by the university. Discussion occurred around the name of the program and the types of engines to be worked on. It was noted that the curriculum heavily favors automotive engines but courses in marine engines, etc., will be offered. Trustee P. Thompson motioned to approve the AAS in Automotive Power Sports. Trustees James Clarke and Rick Nielsen seconded. The motion carried without opposition.

II. COMMITTEE REPORT

First Vice Chair D. Thompson asked Trustee P. Thompson to provide an update on the activities of the Academic Affairs Committee. Trustee P. Thompson reviewed their recent meeting in which the AAS in Automotive Power Sports was reviewed and recommended for approval. During this meeting, the new Board of Regents approval process for academic programs was explained; this policy gives Trustees the final approval on new academic programs that are within the existing scope of the university's mission. The Trustees discussed this process and the review process for existing degree offerings.

I. ACTION (CONTINUED)

4. Real Estate Transactions

VP Peterson provided the Trustees with an update on the construction of the Noorda Performing Arts Center, which is on-time and on-budget, and the proposal for a new building for the Woodbury School of Business, which will be presented to the Board of Regents in September and the Building Board in October.

The Trustees were presented with three real estate transactions for approval. The first was a proposal to construct a new parking lot at the Provo Airport. The estimated cost is $850,000 and Provo City will provide 6 items as a component of the lease, including allowing UVU to charge for parking, a reserved hanger location for UVU, and the ability for UVU to purchase the Emergency Services Building at appraised value at lease expiration. The Trustees discussed the negotiation process for this lease and the value of Provo's provisions.

The second proposal was for the granting of an easement to Lincoln Square for the construction of a secondary access point to its apartment complex on 400 North in Vineyard. The easement will allow the property company to build out the three-lane road partially owned by UVU. The Trustees discussed payments and Vineyard's engagement in the process.

The final proposal was for approval of a five-year $435,000 warehouse lease that would enable UVU to store the Theater Department's costume collection during the construction of the Noorda Performing Arts Center. The warehouse is located at 556 South Commerce Drive, Orem. The Trustees engaged in minimal discussion of the lease.

Trustee Sunderlage motioned to approve the construction of the new parking lot at the Provo Airport at the estimated cost of $850,000; the granting of an easement to the Lincoln Square apartment complex; and, the purchase of a five-year lease for a warehouse in Orem in the amount of $435,000. Trustee John Gappmayer seconded. The motion carried without opposition.

5. UVU Foundation Investments

VP Scott Cooksey asked the Trustees to approve an increase in the percentage the UVU Foundation (UVUF) is allowed to invest in alternative investments. The increase requested was from 25% to 30%. UVUF's policy was established by the UVUF Board of Directors and complies with the appropriate USHE Policy; upon approval by the Trustees, the same investment cap increase request will go before the Board of Regents for review and approval. The UVUF is also requesting to clarify the asset class definitions to more closely align with traditional definitions and state institutional norms. The Trustees discussed the UVUF's asset distribution, the increase in cash on-hand held by the UVUF, and the necessity of this cap increase to accommodate a fluctuating market and prevention of a forced selling of assets if UVU's allocation rises about 25%.

Trustee Rob Smith motioned to approve the UVU Foundation to be allowed to invest up to 30% in alternative investments and adopt an updated definition of each asset class; Trustee Karen Acerson seconded. The motion carried without opposition.

III. CONSENT CALENDAR

The Trustees were asked to review the Consent Calendar which consisted of the minutes of June 22, 2017, and investment reports for the months of May and June 2017. Trustee Gappmayer motioned to approve the Consent Calendar and Trustee Taylor seconded. The motion carried without opposition.

II. EXECUTIVE SESSION

Trustee Smith motioned to enter Executive Session to discuss issued related to the character of individuals. Trustee Acerson seconded. The motion carried without opposition.

V. INFORMATION

1. **NWCCU Accreditation**

The Trustees were presented with a review of the NWCCU accreditation process by VP Linda Makin and Institutional Effectiveness Director Jeff Johnson with explanations relating to the significance of accreditation, the expectations of the site visit, and the role for the Board of Trustees. Specific discussion centered on the Self-Study assessment of UVU's mission fulfillment, growth, student learning outcomes, faculty workload, and compliance with standards. The Board was informed of possible concerns for the evaluation committee as well as expected commendations for areas of achievement including inclusion and planning/assessment. The Trustees engaged in discussion about their expectations with regard to answering questions. The Trustees were reminded of the planned schedule for the site visit, including the opening breakfast on October 25 at 8am to which they are invited.

2. **Inclusion Annual Report**

Kyle Reyes, Special Assistant for Inclusion, provided the Trustees with an overview of the 2016-17 Inclusion Annual Report. He reviewed the initial strategic inclusion plan, noting accountability for the action steps outlined. Several action steps have been completed, with many more in process. Further explanation centered on the objectives of the inclusion plan which include increased access for minority/at-risk populations, intercultural literacy, a safe campus environment, increased educational options, and increased awareness and training for inclusion among faculty and staff. The university will soon be offering a Foundations of Inclusion workshop series that is open to all employees. The Trustees asked Kyle to provide further information about how they can become engaged in inclusive efforts on campus.

3. **President's Report**

President Holland indicated that he would be providing a full report on his experience at Oxford as well as an update on the university at the Board of Trustee Retreat on September 19.

4. **UVU Foundation Report**

Trustee Clarke provided the Trustees with an update on the UVU Foundation. He reviewed the available assets, indicating a $6m gain. He explained that part of the growth of assets has been an increased return on investments thanks to the oversight of the Investment Committee. The Trustees discussed the increases and returns and the performance of Key Bank. Brief mention was made of the fundraising efforts for the Woodbury School of Business.

Trustee Sunderlage motioned to adjourn. The motion carried without opposition.

CASH AND INVESTMENT REPORT
July 2017

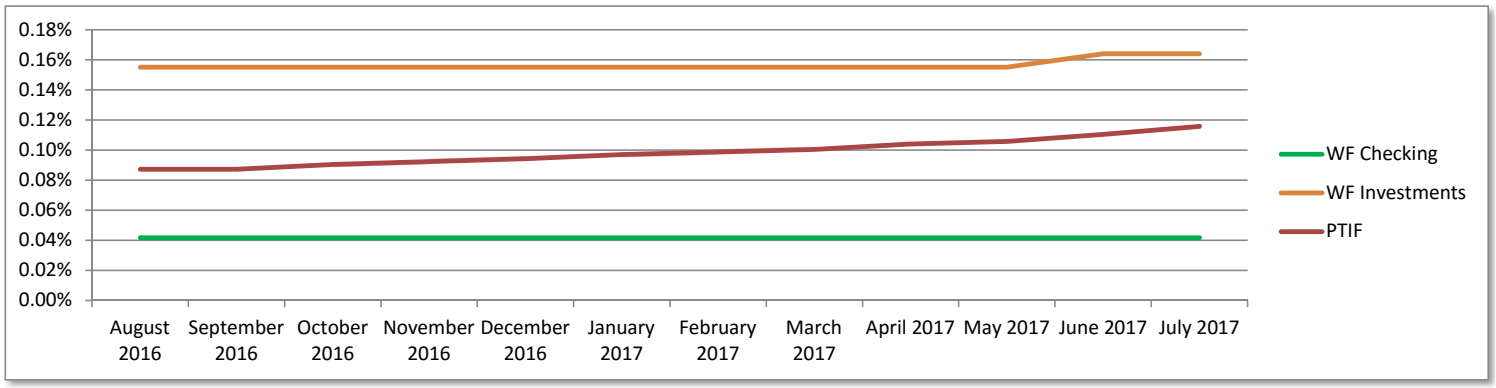
Monthly Composite Performance Review
UTAH VALLEY UNIVERSITY
July 2017

Account Activity

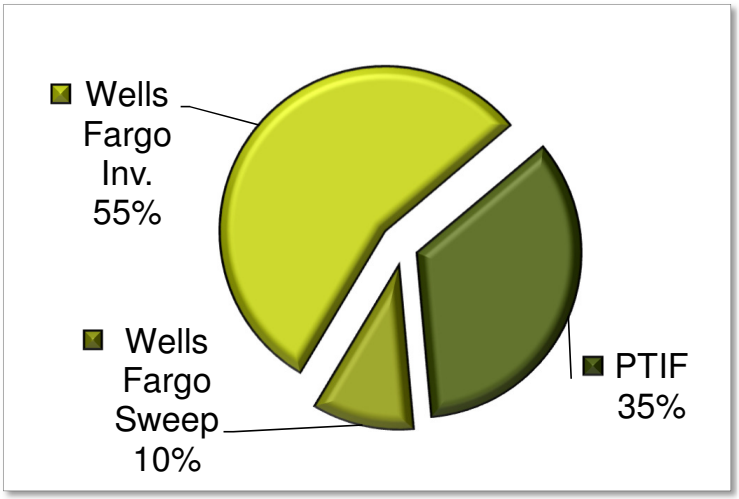
	Checking/Sweep	Investments	PTIF	Total University Cash and Investments	Past Twelve Months of Activity
Beginning Balance	$ 9,774,697	$ 71,417,426	$ 56,899,128	$ 138,091,251	$ 134,345,521
Interest/Earnings Credit	5,078	97,343	67,006	169,427	2,264,929
Acquisitions/Credits	3,837,085	4,000,000	14,046,497	21,883,582	304,211,262
Dispositions/Debits	-	-	(24,000,000)	(24,000,000)	(290,409,223)
Unrecognized Gain/Loss	-	2,905	-	2,905	136,641
Fees	(5,078)	-	-	(5,078)	(82,255)
Transfers *	-	(97,343)	287,678	190,335	(14,134,453)
Ending Balance	$ 13,611,782	$ 75,420,331	$ 47,300,309	$ 136,332,422	$ 136,332,422

* Transfers consist of activity between the UVU and the Foundation and interest transferred to UVU.

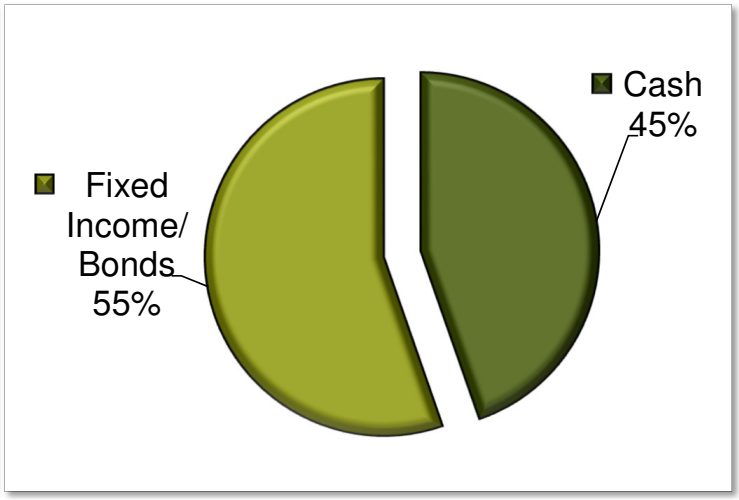
Performance Returns	Wells Fargo Checking/Sweep	Wells Fargo Investments	PTIF
August 2016	0.04%	0.16%	0.09%
September 2016	0.04%	0.16%	0.09%
October 2016	0.04%	0.16%	0.09%
November 2016	0.04%	0.16%	0.09%
December 2016	0.04%	0.16%	0.09%
January 2017	0.04%	0.16%	0.10%
February 2017	0.04%	0.16%	0.10%
March 2017	0.04%	0.16%	0.10%
April 2017	0.04%	0.16%	0.10%
May 2017	0.04%	0.16%	0.11%
June 2017	0.04%	0.16%	0.11%
July 2017	0.04%	0.16%	0.12%
Monthly Average	0.04%	0.16%	0.10%
12 Month Return	0.50%	1.88%	1.18%



UVU Cash and Investments as a Percent of Total



UVU Cash and Investments Investments by Type



Monthly Composite Performance Review
UVU Foundation
July 2017

Account Activity

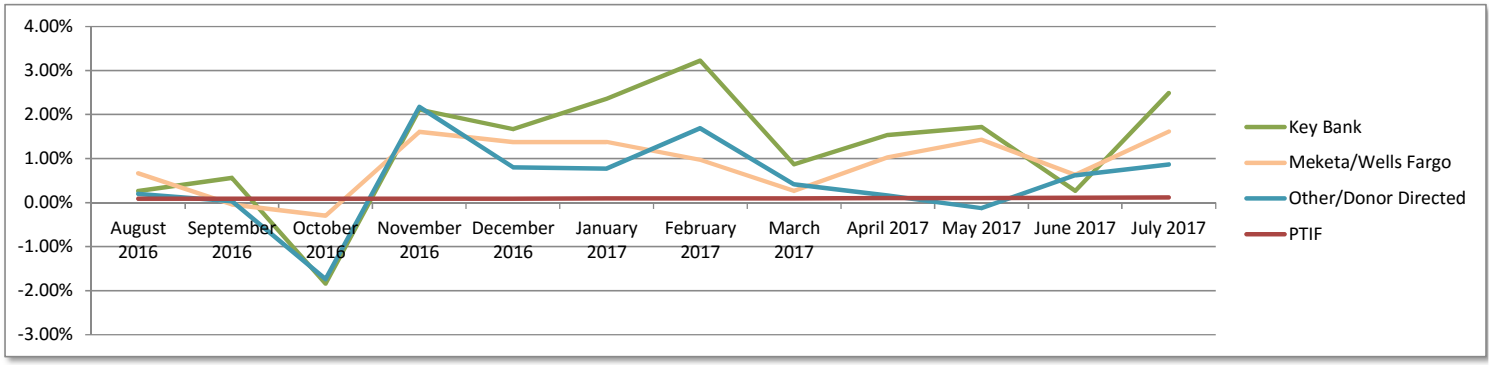
	Unrestricted	Temporarily Restricted	Permanently Restricted - Endowments	Total Foundation Investments	Past Twelve Months of Activity
Beginning Market Value	$ 7,901,949	$ 43,740,877	$ 24,618,053	$76,260,878.7	$ 59,040,638
Interest	9,378	38,147	8,637	56,162	632,904
Acquisitions	182,003	2,232,133	2,977,182	5,391,318	45,722,624
Dispositions	(258,716)	(1,213,340)	(3,924,959)	(5,397,015)	(45,709,983)
Gain/Loss Rec & Unrec	36,694	239,644	405,269	681,607	4,095,018
Fees	(26)	-	(2,654)	(2,680)	(122,560)
Transfers *	280,031	(1,537,267)	969,558	(287,678)	13,043,952
Ending Market Value	$ 8,151,313	$ 43,500,194	$ 25,051,086	$ 76,702,593	$ 76,702,593

Notes Due From University	
Beginning Balance	$ 8,585,565
Additional Notes	-
Principal Received	-
Ending Balance	$ 8,585,565
Interest Received	$ -
Rate	5.5%

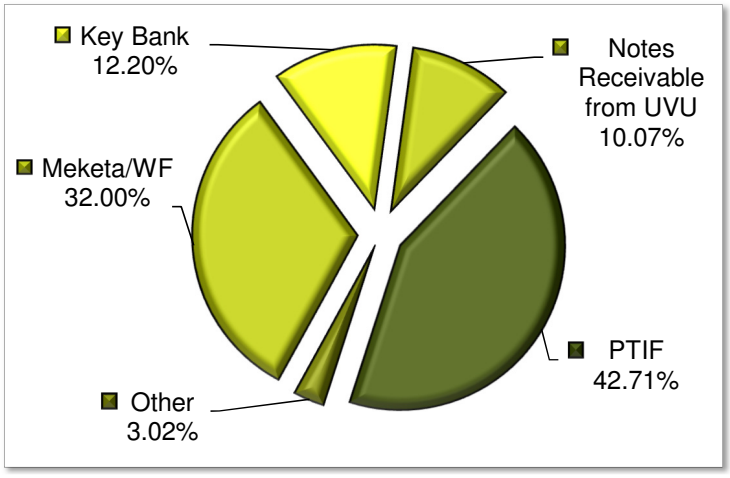
* Transfers consist of activity between money market accounts and other investment accounts as well activity between the University and the Foundation.

Performance Returns

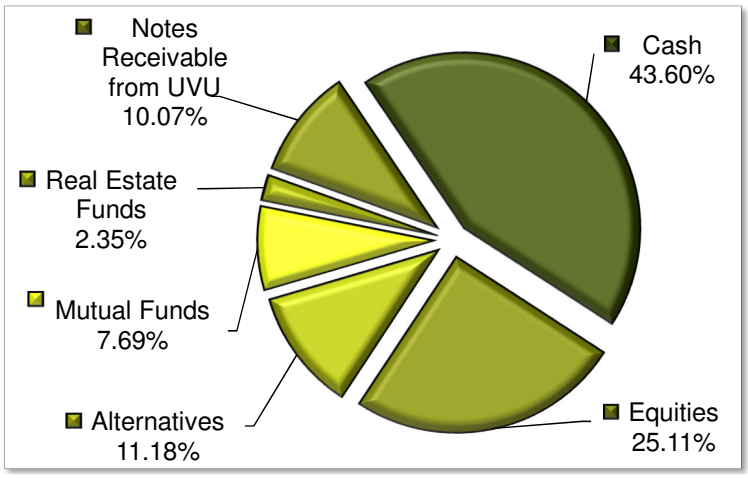
	Key Bank	Meketa/ Wells Fargo	Other - Donor Directed	PTIF
August 2016	0.26%	0.67%	0.20%	0.09%
September 2016	0.56%	-0.04%	0.04%	0.09%
October 2016	-1.84%	-0.29%	-1.74%	0.09%
November 2016	2.11%	1.61%	2.17%	0.09%
December 2016	1.67%	1.38%	0.81%	0.09%
January 2017	2.36%	1.38%	0.78%	0.10%
February 2017	3.23%	0.97%	1.69%	0.10%
March 2017	0.87%	0.27%	0.42%	0.10%
April 2017	1.54%	1.03%	0.17%	0.10%
May 2017	1.72%	1.43%	-0.13%	0.11%
June 2017	0.27%	0.63%	0.62%	0.11%
July 2017	2.49%	1.62%	0.87%	0.12%
Monthly Average	1.27%	0.89%	0.49%	0.10%
12 Month Return	14.06%	10.65%	5.88%	1.18%



UVU Foundation Investments as a Percent of Total



UVU Foundation Investments by Type



Utah Valley University

Investments and Investment Earnings

From 7/1/17 to 7/31/17

Description	Yield	Maturity Date	Principal	Accrued Interest	Net Amount	Par	Total Interest Received To Date	Less Accrued Interest	Interest Earnings
Bank of America Corp	6.40%	8/28/2017	2,116,340.00	41,244.44	2,157,584.44	2,000,000.00			-
Salt Lake City UT Sales & Ex	1.30%	10/1/2017	2,012,540.00	-	2,012,540.00	2,000,000.00			-
Bank of America Corp	2.00%	1/11/2018	1,506,495.00	12,000.00	1,518,495.00	1,500,000.00	15,000.00		**15,000.00**
Key Bank	1.65%	2/1/2018	3,007,140.00	1,787.50	3,008,927.50	3,000,000.00			-
Bank of America Corp	2.36%	3/22/2018	3,029,730.00	9,905.87	3,039,635.87	3,000,000.00			-
Goldman Sachs Group Inc SRNT	2.37%	4/30/2018	3,035,760.00	6,985.07	3,042,745.07	3,000,000.00	18,578.95		**18,578.95**
Goldman Sachs Group Inc SRNT	2.37%	4/30/2018	3,017,068.60	8,029.94	3,025,098.54	3,000,000.00	18,578.95		**18,578.95**
STATOIL ASA	1.47%	5/15/2018	2,456,775.00	567.63	2,457,342.63	2,500,000.00			-
Westpac Banking Corp	1.91%	7/30/2018	501,765.00	1,283.13	503,048.13	500,000.00	2,495.94		**2,495.94**
Suntrust Banks Inc	2.07%	7/30/2018	3,016,831.83	1,897.10	3,018,728.93	3,000,000.00	15,521.70		**15,521.70**
HSBC USA UNC	1.95%	8/7/2018	1,501,605.00	3,388.11	1,504,993.11	1,500,000.00			-
Capital One	2.35%	8/17/2018	1,006,181.00	6,462.50	1,012,643.50	1,000,000.00			-
Verizon Communications	2.99%	9/14/2018	2,060,509.70	8,228.11	2,068,737.81	2,000,000.00			-
HSBC USA UNC	2.18%	9/24/2018	1,600,652.08	3,284.85	1,603,936.93	1,600,000.00			-
HSBC USA UNC	2.18%	9/24/2018	2,011,500.00	3,087.50	2,014,587.50	2,000,000.00			-
Santander UK PLC	2.72%	3/14/2019	405,230.53	1,384.76	406,615.29	400,000.00			-
Bank of America Corp	2.02%	4/1/2019	2,482,991.76	415.31	2,483,407.07	2,500,000.00	12,750.17		**12,750.17**
Citigroup Inc	1.93%	4/8/2019	753,281.47	983.88	754,265.35	750,000.00	3,650.22		**3,650.22**
Citigroup Inc	2.15%	6/7/2019	1,512,795.00	146.95	1,512,941.95	1,500,000.00			-
Citigroup Inc	2.15%	6/7/2019	3,529,785.00	-	3,529,785.00	3,500,000.00			-
Citigroup Inc	2.15%	6/7/2019	4,031,138.24	4,506.57	4,035,644.81	4,000,000.00			-
Morgan Stanley	1.89%	7/23/2019	2,243,857.50	6,804.37	2,250,661.87	2,250,000.00	10,767.40		**10,767.40**
BK of Communications/HK	2.06%	8/16/2019	3,017,220.00	14,023.75	3,031,243.75	3,000,000.00			-
Capital One	2.00%	9/13/2019	4,027,885.08	9,004.01	4,036,889.09	4,000,000.00			-
Capital One	2.00%	9/13/2019	2,015,240.00	6,281.87	2,021,521.87	2,000,000.00			-
JPMorgan Chase & Co.	1.88%	9/23/2019	3,008,190.00	605.55	3,008,795.55	3,000,000.00			-
Goldman Sachs Group Inc SRNT	2.04%	12/13/2019	2,004,571.62	3,708.17	2,008,279.79	2,000,000.00			-
China Development Bank	1.77%	3/6/2020	1,000,662.47	2,560.28	1,003,222.75	1,000,000.00			-
Citizens Bank	1.77%	5/26/2020	2,004,720.00	982.01	2,005,702.01	2,000,000.00			-
Citizens Bank	1.77%	5/26/2020	3,010,590.00	8,690.75	3,019,280.75	3,000,000.00			-
Morgan Stanley	2.23%	6/16/2020	3,544,030.00	-	3,544,030.00	3,500,000.00			-
Barclays Bank	1.85%	6/16/2020	5,000,000.00	-	5,000,000.00	5,000,000.00			-
			75,473,081.88	168,249.98	75,641,331.86	75,000,000.00	97,343.32	-	97,343.32
		Matured/Sold	-		-	-			
		Total	**75,473,081.88**		**75,641,331.86**	**75,000,000.00**			

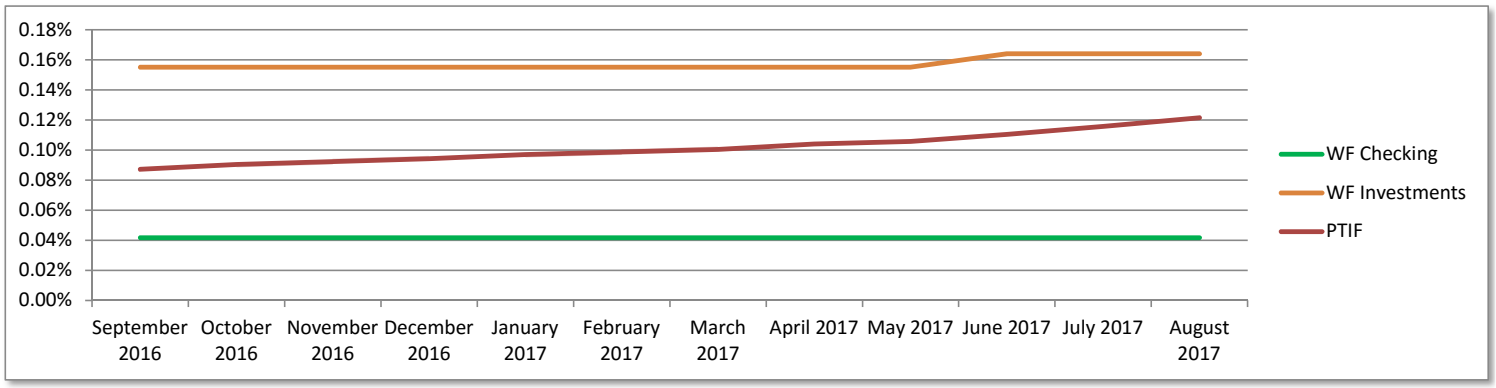
CASH AND INVESTMENT REPORT
August 2017

Monthly Composite Performance Review
UTAH VALLEY UNIVERSITY
August 2017

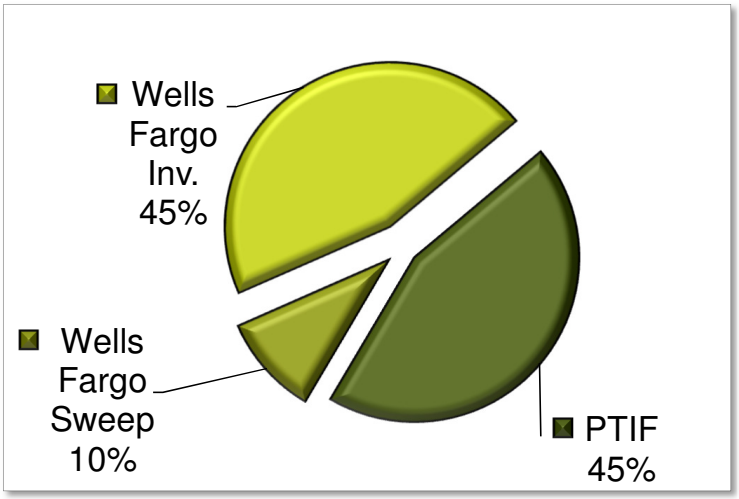
Account Activity	Checking/Sweep	Investments	PTIF	Total University Cash and Investments	Past Twelve Months of Activity
Beginning Balance	$ 13,611,782	$ 75,420,331	$ 47,300,309	$ 136,332,422	$ 178,497,571
Interest/Earnings Credit	8,878	170,551	71,585	251,014	2,289,388
Acquisitions/Credits	3,323,083	13,000,000	44,887,318	61,210,401	247,207,301
Dispositions/Debits	-	(11,000,000)	(16,000,000)	(27,000,000)	(242,438,754)
Unrecognized Gain/Loss	-	9,642	-	9,642	92,461
Fees	(8,878)	-	-	(8,878)	(78,691)
Transfers *	-	(170,551)	(348,346)	(518,897)	(15,293,572)
Ending Balance	$ 16,934,865	$ 77,429,973	$ 75,910,866	$ 170,275,704	$ 170,275,704

* Transfers consist of activity between the UVU and the Foundation and interest transferred to UVU.

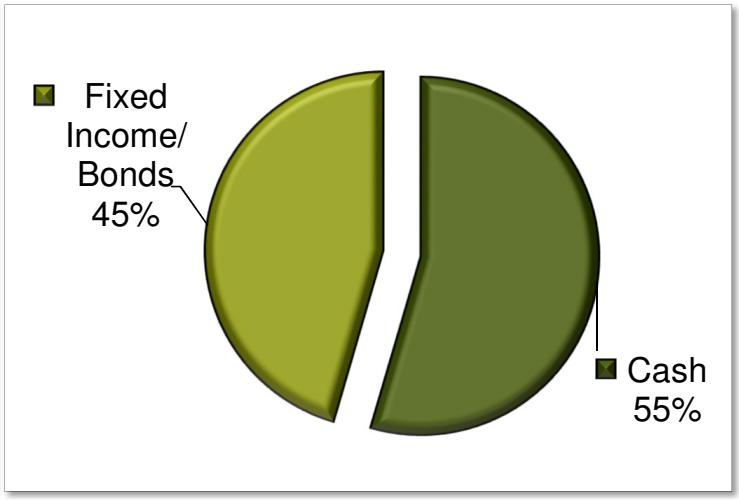
Performance Returns	Wells Fargo Checking/Sweep	Wells Fargo Investments	PTIF
September 2016	0.04%	0.16%	0.09%
October 2016	0.04%	0.16%	0.09%
November 2016	0.04%	0.16%	0.09%
December 2016	0.04%	0.16%	0.09%
January 2017	0.04%	0.16%	0.10%
February 2017	0.04%	0.16%	0.10%
March 2017	0.04%	0.16%	0.10%
April 2017	0.04%	0.16%	0.10%
May 2017	0.04%	0.16%	0.11%
June 2017	0.04%	0.16%	0.11%
July 2017	0.04%	0.16%	0.12%
August 2017	0.04%	0.16%	0.12%
Monthly Average	0.04%	0.16%	0.10%
12 Month Return	0.50%	1.89%	1.22%



UVU Cash and Investments as a Percent of Total



UVU Cash and Investments Investments by Type



Monthly Composite Performance Review
UVU Foundation
August 2017

Account Activity

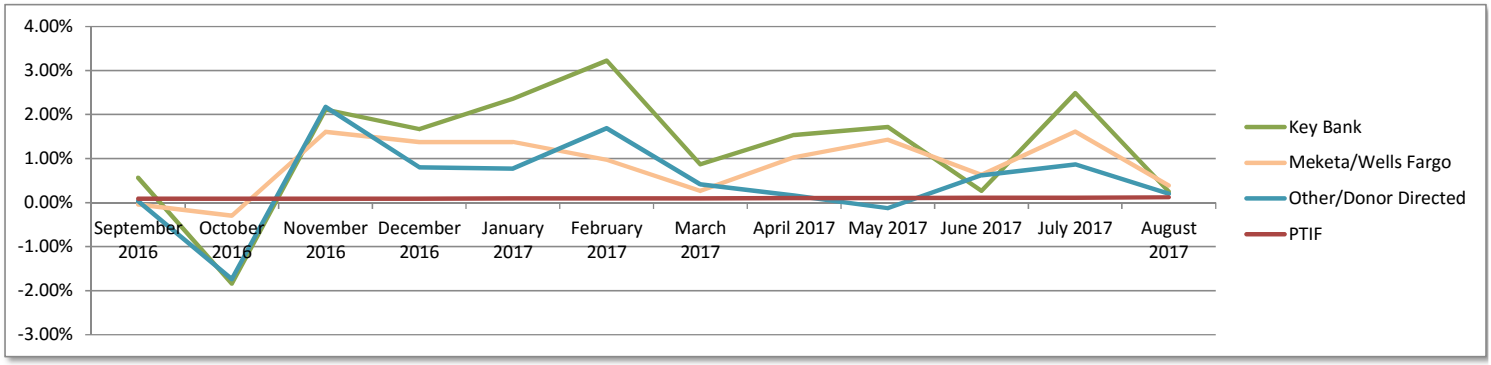
	Unrestricted	Temporarily Restricted	Permanently Restricted - Endowments	Total Foundation Investments	Past Twelve Months of Activity
Beginning Market Value	$ 8,151,313	$ 43,500,194	$ 25,051,086	$76,702,592.7	$ 58,458,768
Interest	8,941	55,620	11,633	76,194	682,240
Acquisitions	204,641	3,428,495	3,846,359	7,479,495	46,459,041
Dispositions	(244,386)	(2,003,409)	(5,308,371)	(7,556,166)	(46,524,725)
Gain/Loss Rec & Unrec	4,275	54,714	58,504	117,493	4,022,265
Fees	(5,425)	(2,358)	(11,979)	(19,762)	(123,818)
Transfers *	32,074	(1,039,421)	1,355,693	348,346	14,174,422
Ending Market Value	$ 8,151,433	$ 43,993,835	$ 25,002,925	$ 77,148,193	$ 77,148,193

Notes Due From University	
Beginning Balance	$ 8,585,565
Additional Notes	-
Principal Received	-
Ending Balance	$ 8,585,565
Interest Received	$ -
Rate	5.5%
Fiscal Year Activity	

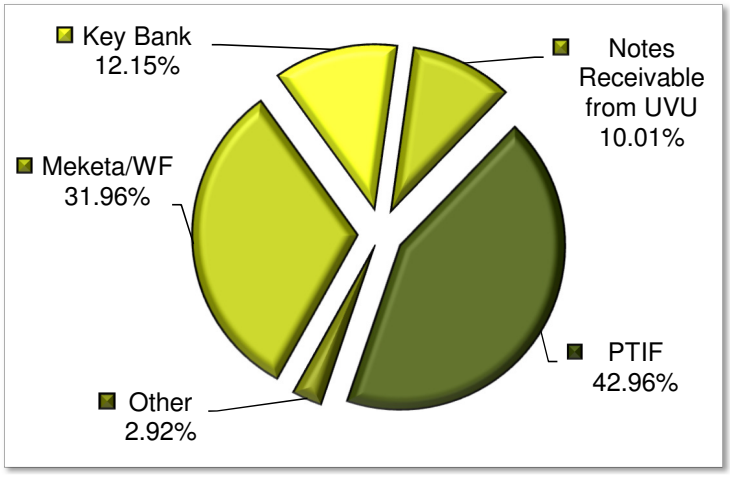
* Transfers consist of activity between money market accounts and other investment accounts as well activity between the University and the Foundation.

Performance Returns

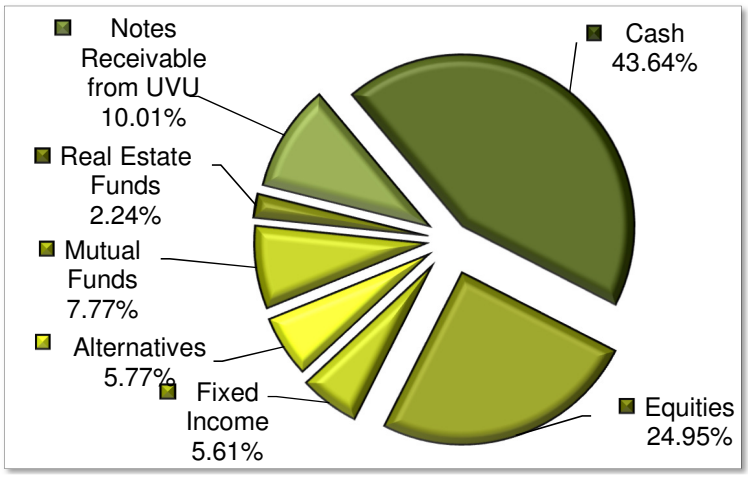
	Key Bank	Meketa/ Wells Fargo	Other - Donor Directed	PTIF
September 2016	0.56%	-0.04%	0.04%	0.09%
October 2016	-1.84%	-0.29%	-1.74%	0.09%
November 2016	2.11%	1.61%	2.17%	0.09%
December 2016	1.67%	1.38%	0.81%	0.09%
January 2017	2.36%	1.38%	0.78%	0.10%
February 2017	3.23%	0.97%	1.69%	0.10%
March 2017	0.87%	0.27%	0.42%	0.10%
April 2017	1.54%	1.03%	0.17%	0.10%
May 2017	1.72%	1.43%	-0.13%	0.11%
June 2017	0.27%	0.63%	0.62%	0.11%
July 2017	2.49%	1.62%	0.87%	0.12%
August 2017	0.25%	0.39%	0.20%	0.12%
Monthly Average	1.27%	0.86%	0.49%	0.10%
12 Month Return	14.05%	10.37%	5.89%	1.22%



UVU Foundation Investments as a Percent of Total



UVU Foundation Investments by Type



Utah Valley University

Investments and Investment Earnings

From 7/1/16 to 8/31/17

Description	Yield	Maturity Date	Principal	Accrued Interest	Net Amount	Par	Total Interest Received To Date	Less Accrued Interest	Interest Earnings
Bank of America Corp	6.40%	8/28/2017	2,116,340.00	41,244.44	2,157,584.44	2,000,000.00	64,000.00		**64,000.00**
Salt Lake City UT Sales & Ex	1.30%	10/1/2017	2,012,540.00	-	2,012,540.00	2,000,000.00			-
Bank of America Corp	2.00%	1/11/2018	1,506,495.00	12,000.00	1,518,495.00	1,500,000.00	15,000.00		**15,000.00**
Key Bank	1.65%	2/1/2018	3,007,140.00	1,787.50	3,008,927.50	3,000,000.00	24,750.00	(1,787.50)	**22,962.50**
Bank of America Corp	2.36%	3/22/2018	3,029,730.00	9,905.87	3,039,635.87	3,000,000.00			-
Goldman Sachs Group Inc SRNT	2.37%	4/30/2018	3,035,760.00	6,985.07	3,042,745.07	3,000,000.00	18,578.95		**18,578.95**
Goldman Sachs Group Inc SRNT	2.37%	4/30/2018	3,017,068.60	8,029.94	3,025,098.54	3,000,000.00	18,578.95		**18,578.95**
STATOIL ASA	1.47%	5/15/2018	2,456,775.00	567.63	2,457,342.63	2,500,000.00	9,403.04		**9,403.04**
Westpac Banking Corp	1.91%	7/30/2018	501,765.00	1,283.13	503,048.13	500,000.00	2,495.94		**2,495.94**
Suntrust Banks Inc	2.07%	7/30/2018	3,016,831.83	1,897.10	3,018,728.93	3,000,000.00	15,521.70		**15,521.70**
HSBC USA UNC	1.95%	8/7/2018	1,501,605.00	3,388.11	1,504,993.11	1,500,000.00	7,391.02		**7,391.02**
Capital One	2.35%	8/17/2018	1,006,181.00	6,462.50	1,012,643.50	1,000,000.00	11,750.00		**11,750.00**
Verizon Communications	2.99%	9/14/2018	2,060,509.70	8,228.11	2,068,737.81	2,000,000.00			-
HSBC USA UNC	2.18%	9/24/2018	1,600,652.08	3,284.85	1,603,936.93	1,600,000.00			-
HSBC USA UNC	2.18%	9/24/2018	2,011,500.00	3,087.50	2,014,587.50	2,000,000.00			-
Santander UK PLC	2.72%	3/14/2019	405,230.53	1,384.76	406,615.29	400,000.00			-
Bank of America Corp	2.02%	4/1/2019	2,482,991.76	415.31	2,483,407.07	2,500,000.00	12,750.17		**12,750.17**
Citigroup Inc	1.93%	4/8/2019	753,281.47	983.88	754,265.35	750,000.00	3,650.22		**3,650.22**
Citigroup Inc	2.15%	6/7/2019	1,512,795.00	146.95	1,512,941.95	1,500,000.00			-
Citigroup Inc	2.15%	6/7/2019	3,529,785.00	-	3,529,785.00	3,500,000.00			-
Citigroup Inc	2.15%	6/7/2019	4,031,138.24	4,506.57	4,035,644.81	4,000,000.00			-
Morgan Stanley	1.89%	7/23/2019	2,243,857.50	6,804.37	2,250,661.87	2,250,000.00	10,767.40		**10,767.40**
BK of Communications/HK	2.06%	8/16/2019	3,017,220.00	14,023.75	3,031,243.75	3,000,000.00	29,934.74	(14,023.75)	**15,910.99**
Capital One	2.00%	9/13/2019	4,027,885.08	9,004.01	4,036,889.09	4,000,000.00			-
Capital One	2.00%	9/13/2019	2,015,240.00	6,281.87	2,021,521.87	2,000,000.00			-
JPMorgan Chase & Co.	1.88%	9/23/2019	3,008,190.00	605.55	3,008,795.55	3,000,000.00			-
Goldman Sachs Group Inc SRNT	2.04%	12/13/2019	2,004,571.62	3,708.17	2,008,279.79	2,000,000.00			-
China Development Bank	1.77%	3/6/2020	1,000,662.47	2,560.28	1,003,222.75	1,000,000.00			-
Citizens Bank	1.77%	5/26/2020	2,004,720.00	982.01	2,005,702.01	2,000,000.00	9,329.05	(982.01)	**8,347.04**
Citizens Bank	1.77%	5/26/2020	3,010,590.00	8,690.75	3,019,280.75	3,000,000.00	13,993.58	(8,690.75)	**5,302.83**
Morgan Stanley	2.23%	6/16/2020	3,544,030.00	-	3,544,030.00	3,500,000.00			-
Barclays Bank	1.85%	6/16/2020	5,000,000.00	-	5,000,000.00	5,000,000.00			-
National Bank of Canada	1.79%	6/12/2020	4,024,000.00	14,503.56	4,038,503.56	4,000,000.00			-
National Bank of Canada	1.79%	6/12/2020	1,006,000.00	3,625.89	1,009,625.89	1,000,000.00			-
Wells Fargo	2.17%	7/22/2020	5,083,300.00	8,526.39	5,091,826.39	5,000,000.00			-
FHLB	1.75%	8/23/2022	3,000,000.00	-	3,000,000.00	3,000,000.00			-
			88,586,381.88	194,905.82	88,781,287.70	88,000,000.00	267,894.75	(25,484.01)	242,410.74
		Matured/Sold	(11,226,155.78)		(11,297,376.71)	(11,000,000.00)			
		Total	**77,360,226.10**		**77,483,910.99**	**77,000,000.00**			

Institutional Discretionary Funds

2017-18 Budget Revised and 16-17 Actual

Institutional Investment Income

	2016-17		2017-18		
Revenue	Revised	Actual	Original	Change	Revised
Investment Revenue From Prior Year	$1,239,744		$1,900,000	$187,677	$2,087,677
Carry forward from Prior Year	$222,143		$532,021	-$46,560	$485,461
Available Revenue	$1,461,887	$0	$2,432,021	$141,117	$2,573,138

	2016-17		2017-18		
Expenditure Category/Project	Revised	Actual	Original Budget	Revision	Revised Budget
Scholarships, Fellowships and Student Aid					
International Student Scholarships	$142,006	$133,000	$145,556		$145,556
Scholarship (President/Land)	$15,000	$8,192	$15,000		$15,000
CAL Lead Housing	$218,400	$214,305	$215,400	$4,095	$219,495
Honors Housing	$264,960	$264,818	$288,960		$288,960
International Studies Student Aid	$20,000	$20,000	$20,000		$20,000
Internships	$12,000	$12,000	$12,000		$12,000
Government Internships	$30,000	$30,000	$30,000		$30,000
Fund Raising and Institutional Development					
Federal Funding Development	$45,000	$43,200	$45,000		$45,000
Other Education and General Operating Support					
Student Marketing (Recruitment)	$145,000	$123,874	$80,000	$21,121	$101,121
Student Marketing (Targeted)	$0		$0		$0
Out Of State Recruiting	$30,000	$28,035	$30,000		$30,000
International Fair	$16,500	$16,503	$16,500		$16,500
University Campaign	$200,000	$82,500	$0	$117,500	$117,500
Contingency	$523,021		$1,533,605	-$1,599	$1,532,006
TOTAL	$1,661,887	$976,427	$2,432,021	$141,117	$2,573,138

Unrestricted Gifts

	2016-17		2017-18
Revenue	Revised Budget	Actual Expenditures	Original Budget
Carry forward from Prior Year	$101,361	$101,361	$113,204
Projected new revenue	$16,177	$16,177	$11,000
Available Revenue	$117,538	$117,538	$124,204

	2016-17		2017-18
Expenditure Category	Revised Budget	Actual Expenditures	Original Budget
Fund Raising and Institutional Development			
Presidential Impact	$88,928	$4,301	$84,627
Community Outreach	$28,610	$33	$39,577
Total Expenditures	$117,538	$4,334	$124,204

2016-17 AUXILIARY REPORT

10/26/2017

	2016-17 Revenue	2016-17 Transfers In/Out	2016-17 Expenditures	2016-17 Net Income		2016-17 Beginning Balance	2016-17 Year-End Balance
Student Center	$1,997,146	($24,062)	$1,973,084	$0		$558,620	$558,620
Student Life and Wellness	$2,975,061	($725,794)	$2,249,267	$0		$100,874	$100,874
Food Service	$3,638,075	$586,021	$4,224,096	$0		$30,234	$30,234
Bookstore	$9,003,195	($16,027)	$8,987,168	$0		$2,365,868	$2,365,868
TOTAL	**$17,613,477**	**($179,862)**	**$17,433,615**	**$0**		**$3,055,596**	**$3,055,596**

2016-17 SERVICE ENTERPRISE REPORT

10/26/2017

	2016-17 Revenue	2016-17 Expenditures	2016-17 Transfers	2016-17 Net Income		2016-17 Beginning Balance	2016-17 Year-End Balance
Printing Services	$1,172,210	$1,283,386	$0	($111,176)		$531,491	$420,315
Fleet Operations	$243,356	$273,966	$0	($30,610)		$257,692	$227,082
Stores and Receiving	$72,027	$75,906	$0	($3,879)		$29,904	$26,025
Mail Services	$373,156	$330,477	$0	$42,679		$51,903	$94,582
Academic Computing	$1,423,370	$1,307,941	$0	$115,429		$730,096	$845,525
Parking Services	$2,051,119	$945,123	($615,054)	$490,942		$2,537,727	$3,028,669
Police	$54,671	$58,112	$0	($3,441)		$1,274	($2,167)
Issue Room	$0	$8,428	$0	($8,428)		$0	($8,428)
Telephone Services	$322,068	$397,207	$0	($75,139)		$120,422	$45,283
TOTAL	**$5,711,977**	**$4,680,546**	**($615,054)**	**$416,377**		**$4,260,509**	**$4,676,886**