**Dept. of Information Systems & Technology
Scott M. Smith College of Engineering and Technology
Utah Valley University**

**Course Syllabus** **–** **INFO 2410** Database Fundamentals
Spring Semester 2024
Jan 8 – May 1

**Faculty:** John E. Anderson, Ph.D.
CS 601j, Phone 801-863-8308
**janderson@uvu.edu**

**Office Hours: T&Th 1:30-4:00**
in office or using MS Teams,
or by appointment

**Technical Support:**

**IT Services:** UVU Service Desk - <https://www.uvu.edu/servicedesk/> 801-863-8888 hours M-F 7-6. Chat and Self-service are also available.

**UVU Care Hub:There are many helpful services (health, safety, food, housing, etc.) available for you at UVU** [**https://www.uvu.edu/studentcare/**](https://www.uvu.edu/studentcare/)

**Required Textbooks:**

Murach’s SQL Server 2022 for Developers, by Syverson & Murach, 2023, ISBN 978-1-943873-06-7 (or Murach’s SQL Server 2019 for Developers, by Syverson & Murach, 2019, ISBN 978-1-943872-57- 2)

Hands-On Database, 2 Ed (or 1 Ed), by Conger, 2014, ISBN-13: 9780133024418 (I have seen many 1st editions available for $1.99.)

**Course Web Site:uvu.instructure.org, (CANVAS)**

**Contacting the Instructor:**The **best way** to communicate with me is through **email** or in class. Please use the appropriate subject line in your email. For this class, the subject you must use is **INFO 2410** along with any additional pertinent information (such as “INFO 2410 question about syllabus”).

**General Course Information:**This course requires a great deal of work.Students who do not complete assignments, or do not **actively participate** in class, in their teams, and in course activities **cannot** receive an A in the course.

While assignments are distributed throughout the semester. Do not leave assignments until the last minute! Access to the Internet (Canvas) becomes difficult as more and more students attempt to access the same resources, response time drops, outages occur, bad things happen.

**Course Description:INFO 2410 Database Fundamentals**, Prerequisite(s): (INFO 1120 recommended) or (IM 2010 recommended)

Introduces concepts and use of database management systems. Presents the relational model, Structured Query Language, database design including normalization theory, and application development tools using an enterprise-level relational database management system. Lab access fee of $35 for computers applies.

**Course Objectives:**At the completion of the course, the student should have obtained the following knowledge and skills:

1. Be able to explain the functions and uses of a database in an enterprise information system.
2. Understand the database design and implementation process and how it fits into the System Development Life Cycle (SDLC).
3. Be able to develop a data model for an organization using standard data modeling techniques.
4. Be able to convert a data model into a functioning database using an industry standard relational Database Management System (DBMS).
5. Be able to apply the rules for creating well-formed tables in a database.
6. Be able to query a relational database using the Structured Query Language (SQL).

IST and UVU Policies, Procedures, and Resources \_\_\_\_\_\_\_\_\_\_\_\_

**Academic Honesty:**Academic dishonesty will not be tolerated. The penalty for a first offense is a failing grade for the assignment, test, or quiz. The student will not be allowed to resubmit that assignment, test, or quiz for a grade. A second offense will result in a failing grade for the course. All violations of academic integrity will be reported to (a) the Information Systems & Technology Department Chair and (b) the Student Conduct Director. Multiple occurrences of academic integrity violations on record for a student will involve further sanctions, such as probation, suspension, expulsion, and revocation of admissions or degree. Please read Section D Academic Responsibilities and Section M Sanctions described at <http://www.uvu.edu/catalog/current/policies-requirements/student-rights-and-responsibilities.html>.

“Cheating is the act of using, attempting to use, or providing others with unauthorized information, materials, or study aids in academic work. Cheating includes, but is not limited to, passing examination answers to, or taking examinations for someone else, or preparing or copying others’ academic work.”

Cheating includes copying assignments and assessments from another student, taking screenshots of quizzes and tests, sharing copies of unauthorized screenshots, etc., or using a substantial portion of another student’s work as your own work. In other words, if it appears to the professor that the work of two or more students is substantially the same, sanctions will be imposed on all parties. Even after the course is completed, sanctions may be imposed. That is, if evidence surfaces indicating academic integrity violations occurred, you may receive a failing grade on a deliverable, failing course grade, or revocation of a degree.

**Accommodations/Accessibility:**Students who need accommodations because of a disability may contact the UVU Accessibility Services Department (ASD), located on the Orem Campus in LC 312. To schedule an appointment or to speak with a counselor, call the ASD office at 801-863-8747. Deaf/Hard of Hearing individuals, email nicole.hemmingsen@uvu.edu or text 385-208-2677.

**ABET Accreditation:**The Information Systems and Information Technology programs at UVU are accredited by the Computing Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET). According to ABET, “accreditation is proof that a collegiate program has met certain standards necessary to produce graduates who are ready to enter their professions” (<http://www.abet.org/why-accreditation-matters/>).

The IS&T Department follows strict data collection, curriculum, and assessment standards to maintain ABET accreditation. To ensure both Information Systems and Information Technology programs strive to meet the standardized outcomes, the following outcomes will be addressed and may be assessed in this course:

1. Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.
2. Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program’s discipline.

**Course/Lab Access Fee**Students taking BMED, CYBER, IM, INFO and IT classes paid course fees to help defray the costs of providing you with the best computer education. These fees help pay a portion of the allocated printouts, file servers, networking infrastructure, lab computers, overhead projectors, support hardware, presentation software, lab computer software, file server software, associated software, etc.

**Course Evaluations**UVU is dedicated to providing quality academic experiences for students. Help us identify areas where professors can improve their teaching by participating in the Student Ratings of Instructor (SRI). Your confidentiality is assured. Your feedback is critical to help us improve the teaching and learning at UVU. The online SRIs will be available toward the end of the semester.

**Course Withdrawal**Check the UVU Academic Calendar to find the last day to drop a first block class, receive a refund, and for the class not to show up on your transcript. If you want to drop a full-semester class after the drop date, you must complete a Withdrawal Exception Form. However, documented extenuating circumstances must exist in order for the department chair to consider such request. Extenuating circumstances include incapacitating illness that prevents a student from attending classes, a death in the immediate family, change in work schedule as required by the employer, or other emergencies.

**Non Discrimination Policy**UVU Policy 165 defines protected classes as “race, color, religion, national origin, sex, sexual orientation, gender identity, age (40 and over), disability, veteran status, pregnancy, childbirth, or pregnancy-related conditions, genetic information, or other bases protected by applicable federal, state, or local law.” Most full-time IS&T faculty and staff have received Safe Zone training that states “regardless of gender identify, gender expression, or sexual orientation, you will be treated and respected as a human being.” Bigotry and harassment will not be tolerated by the IS&T Department.

**A Note on Sexual Misconduct**UVU is committed to fostering a safe, productive learning environment. Title IX and our school policy prohibits discrimination on the basis of sex. Sexual misconduct — including harassment, domestic and dating violence, sexual assault, and stalking — is also prohibited at our school.

Our school encourages anyone experiencing sexual misconduct to talk to someone about what happened, so they can get the support they need and our school can respond appropriately.

If you wish to speak confidentially about an incident of sexual misconduct, want more information about filing a report, or have questions about school policies and procedures, please contact our Title IX Coordinator, which can be found on our school's website.

Our school is legally obligated to investigate reports of sexual misconduct, and therefore it cannot guarantee the confidentiality of a report, but it will consider a request for confidentiality and respect it to the extent possible.

As a teacher, I am also required by our school to report incidents of sexual misconduct and thus cannot guarantee confidentiality. I must provide our Title IX coordinator with relevant details such as the names of those involved in the incident.

**Student veteran Support** UVU is committed to providing a working and learning atmosphere for student veterans and their families. If you are a student veteran, or a student family member of a veteran you are eligible for support services from the Veterans Success Center and may be eligible for Post-9/11 GI Bill benefits. For help receiving your benefits, please contact the [Veterans Success Center](https://www.uvu.edu/veterans/) in the [Woodbury Business Building](http://www.uvu.edu/asd/maps/), room 100, via email atveterans@uvu.edu or by calling 801.863.8212.

**(I)ncomplete Grades**I very rarely give an (I) grade. If you have a very rare circumstance that warrants finishing course work after the semester’s end, I will likely give an (E) grade and change the grade later when you finish the work. Such arrangements must be made in advance, and will only be granted in extreme situations.

**Generative AI Usage:** The incorporation of generative artificial intelligence (AI) tools and technologies is encouraged to enhance the learning experience and facilitate the learning process. Generative AI refers to computer systems capable of producing creative outputs, such as text, images, or other content, based on patterns and data provided to them.

 Acceptable Use:

* Students are encouraged to engage with generative AI tools responsibly and ethically, adhering to the principles of academic integrity.
* The use of generative AI for assistance in understanding course concepts, brainstorming ideas, or enhancing creativity within the scope of assignments is permissible.

Academic Integrity:

* Plagiarism, including the use of generative AI to generate content without proper attribution, is a violation of academic integrity. Any instance of plagiarism will be addressed according to the university's academic policies.

Attribution:

* If generative AI tools are used to assist in the creation of any content submitted for assessment, students must clearly acknowledge and attribute the use of such tools in their work.

Learning Opportunity:

* Engaging with generative AI can provide valuable insights into emerging technologies. The responsible use of these tools aligns with the development of critical thinking and ethical decision-making skills.

Discussion and Questions:

* Feel free to ask questions about the appropriate use of generative AI in this course. Open discussions on the ethical considerations and implications of AI are encouraged.

 By enrolling in this course, you acknowledge and agree to adhere to the guidelines outlined in this statement regarding the use of generative AI.

Course Activities and Procedures \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Deliverables:** **Final grade:** The final grade for this class will be based on the following elements. Each exam and assignment is given a score, usually based on a score of 100 being a perfect grade. The score for each segment is totaled and the following **weight factors** are applied when summing up the final score for the class:

1. Exams (3 exams) 45%

2. Assignments 30%

3. Project 15%

4. Quizzes 10%

 Total 100%

**Exams:**In this class you will take three exams on Canvas that will focus on 1/3 of the material. Later information does build on information learned earlier, so each exam does have some overlap in content. Each exam has about 25 multiple choice questions and a hands-on activity covering the content of that section of the course. For example, the hands-on part of the first exam is to create an ERD, for the second and third exams it is to write approximately 5 SQL queries. The hands-on part of the exam is open-book. All exams must be taken at the time indicated in the schedule. The only exceptions to this policy that will be considered will involve extreme medical or family emergency (like being in the hospital).

**Assignments:**Assignments cover the material assigned for the week and are due weekly. They will mostly be database design or SQL assignments. A due date for each assignment is listed on Canvas. Late assignments will receive a 10% penalty per day to a max 50% penalty. All assignments will be submitted in Canvas. Please follow instructions carefully for submitting your work. Grading of work submitted by other means is not guaranteed.

**Quizzes:**Quizzes are due on the due date listing in Canvas. They usually contain about 10 questions that are focused on the material covered during that week and can be attempted twice with the highest grade kept. Late quizzes will receive a 10% penalty per day to a max 50% penalty.

**Take Responsibility:**Take responsibility for your learning, participate, complete deliverables on time. Make the most of this opportunity to learn database and SQL concepts and skills.

**Weekly Activities:** Weekly you will need to view the instructional videos and complete an assignment and quiz. Some weeks you will also participate in an online discussion in Canvas. For the discussion one post and two responses are required.

**Grade Distribution:**Grades will be distributed as follows:

100% - 94% A 93% - 90% A- 89% - 87% B+

86% - 84% B 83% - 80% B- 79% - 77% C+

76% - 74% C 73% - 70% C- 69% - 67% D+

66% - 64% D 63% - 60% D- 59% or less E

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| **Spring Semester 2024 CalendarINFO 2410 Database Fundamentals (Tentative! Stay informed of changes.)** |
| **WEEK START** **DATE** | **TOPICS** | **READING** | **QUIZZES** | **ASSIGN** |
| Jan 8 | **Introduction to the Course,**  Syllabus, C1 Who Needs a Database, C2 Gathering Information | Conger Ch 1,Conger Ch 2 | Take Conger Quiz 1 & 2 |  Assign 1, **Assign 2** |
| Jan 15 | C3 Requirements & Business Rules, C4 Database Design | Conger Ch 3, Conger Ch 4 | Take Conger Quiz 3 & 4 |  Assign 3, **Assign 4** |
| Jan 22 | C4 Database Design continuedC5 Normalization & Design | Conger Ch 5 | Take Conger Quiz 5 | **Assign 5**  |
| Jan 29 | Review of Exam 1Exam 1, Thursday Feb 2 |  |  | Exam 1 |
| Feb 5 | Management StudioSQL-DDL, Data Types | Conger Ch 6, Murach 2,8,11  | Take Conger Quiz 6,  |  **Assign 6.5, 6.1, 6**  |
| Feb 12 | SQL-Single Table | Conger Ch 7, Murach 3 | Take MCQuiz 3 |  **Assign 7** |
| Feb 19 | SQL-2 or more Tables | Conger Ch 7, Murach 4 | Take MCQuiz 4 | **Assign 8**   |
| Feb 26 | Basic SQL Practice & Review**Exam 2 Thursday March 2** |  |  | Exam 2 |
| Mar 4 | SQL-Summary queries | Conger Ch 7, Murach 5 | Take MCQuiz 5 | **Assign 9** |
| Mar 11 | Spring Break  |  |  |  |
| Mar 18 | SQL-Subqueries | Murach 6 |  | **Assign 10,** |
| Mar 25 | SQL-Insert, Update, Delete | Murach 7 | Take MCQuiz 678 | **Assign 10 (cont.)** |
| Apr 1 | Views, Stored Procedures, TriggersC8 Database Backup/Security | Murach 13,15Conger Ch 8 | Take MCQuiz 10121314 & Conger Quiz 7 Take Conger Quiz 8 | **Assign 11** |
| Apr 8 | **Project – Group Work** |  |  | **Project** |
| Apr 15 | **Project – Group Work** |  |  | **Project** |
| Apr 22 | **Project Presentations on April 23-25** |  |  | **Present** |
| Apr 30 | **Final Exam Tuesday April 30 3:00-4:50pm** |  |  | **Final Exam** |

**Study Tips for INFO 2410 or any course**

1. **Read** your lecture notes over within 24 hours of lecture (or at least once before the next lecture). **Highlight** or make marginal notes for important words or concepts. This will help fix ideas and will help you to actively learn the material. This review takes about 20-30 minutes and really yields a large return. **Re-do examples yourself, step by step. Examples often look easy when explained in class, but often turn out to be much harder when you do them yourself.** Write down **questions** about things you do not understand. Bring these questions to lecture, lab, and to office hours and ask them.

2. **Repeat 1 (above) Often.** Readings are assigned for each class. Read them - if not before the class for which they are assigned then certainly after that class and before the next. Also, as you read, highlight, re-work examples yourself, and write down questions, as suggested above.

3. DO **HOMEWORK** PROBLEMS. Actively doing problems is the only way to learn programming. Exam questions will be similar to homework problems. Start early. Do not leave assignments until the night before they are due. Try doing the problems yourself before discussing them with other people.

4. Use **office hours** productively. Ask thoughtful questions about things that you do not understand. In other words, if you do (1)-(3) above, it will be much easier to isolate what is giving you trouble. Please take advantage of the availability of office hours.

5. We will make every effort to help you learn the course material, but you must also make an effort to utilize the resources that are made available to help you. Please come talk to us – not only when you are having trouble but also when things are going well.