CSCE 3615
ENTERPRISE SYSTEMS ARCHITECTURE AND DESIGN

3 credit hours

Instructor Contact
Name: Hadiseh Gooran
Office Location: E260C
Office Hours: Monday- Wednesday 8:30 AM - 10:20 AM
(available in-person at E260C and online over zoom)
Email: hadiseh.gooranorimi@unt.edu
IA: Hessah Almufleh
Office hours: Tuesday: 9:30AM-12:30PM on zoom
https://unt.zoom.us/j/6178062353
Thursday: 3:00PM-5:00PM - Cubicle H
Or by email
Email: hessahalmufleh@my.unt.edu

Communication Expectations:
We will primarily use email for direct communication. Please send personal concerns or questions to hadiseh.gooranorimi@unt.edu. I aim to respond to emails within 24-48 hours on weekdays, provide assignment feedback within a week, and post grades within a week of the submission deadline. Remember to adhere to netiquette principles in your communication, and check course announcements for updates. Your questions and concerns are important, so don't hesitate to reach out.

Course Description
Introduces upper division IT students to concepts of system architecture, design and software engineering that are needed for career opportunities as Software, System and Business Analysts. Topics include enterprise architecture design, requirements analysis, software and systems lifecycle methodologies, Unified Modeling Language, analysis and design methodologies and other related topics. Project activities will expose all students to the full design and specification of IT systems to meet a variety of business and technical problems, as well as prepare them for their capstone course experiences.

Course Structure
This class is face-to-face, and it happens during 17 weeks of a semester, and there is going to be a mix of lecture and in-class group work.

Course Prerequisites:
CSCE 2110 with a grade of C or better.

Course Objectives
By the end of this course, students will be able to:
1. Demonstrate an understanding of the multiple layers of abstraction in modern computer systems and the interface between software and hardware.
2. Evaluate the hardware requirements for an IT System and select the proper architecture and components necessary to satisfy the requirements.
3. Evaluate the software requirements for an IT System, and define a software architecture to satisfy the requirements.
4. Demonstrate an understanding of the use of UML and analysis and design patterns in the
development of a system design.
5. Demonstrate understanding of design and development methodologies and architectural
paradigms through laboratory assignments and a class project.
6. Demonstrate communication skills that will enable clear reasoning and logical descriptions of
problems and solutions in the design, implementation and management of large-scale IT
Systems.

Course Requirements:

- **Attendance:** Attendance is required and will be periodically monitored
- **Exams:** None
- **Project:** Most of the deliverables in this course will relate to a large group project that will be
  completed based on client requirements. You are expected to participate in all aspects of your
  team’s project. Your effort, including that of coding, will be monitored (e.g. repository check-ins,
  peer evals and observations). In particular, lack of coding on the project WILL RESULT in a large
  penalty to your project grade.

Required book:


Teaching Philosophy

In this lab-style course, my approach to teaching is centered on active engagement, hands-on learning,
and fostering a collaborative learning environment. I believe that students learn best when they are
actively involved in the learning process and have opportunities to apply theoretical concepts to real-world
situations. As your instructor, my responsibility is to provide you with the necessary guidance, resources,
and support to help you succeed in this course. My teaching methods will include:

- **Lectures:** I will deliver engaging lectures to provide you with foundational knowledge and
  context.
- **Hands-On class activities:** We will have one session lecture and the other sessions where you will
  have the opportunity to apply what you've learned in a practical setting.
- **Group Activities:** I will facilitate group activities and discussions to promote collaboration and
  critical thinking.
- **Office Hours:** I will be available for office hours and additional support to address your questions
  and concerns.
- **Feedback:** I will provide constructive feedback on assignments and assessments to help you
  improve your skills and understanding.

Remember that your active participation and dedication to the course are essential for your success.
Together, we will create a dynamic and enriching learning environment that will empower you to achieve
your goals and gain valuable skills.

Weekly Topics:

**Week 1: Course Overview**

- Introduction to the course, its objectives, and expectations.
- Formation of student teams.
● Initial discussions about project ideas and prototypes.

Week 2: PM Methodologies
● Exploring Project Management (PM) methodologies.
● Introduction to Design Sprint and Production planning.
● System planning.

Week 3: Software Requirements
● Delving into the process of gathering and documenting software requirements.
● Understanding the importance of clear and comprehensive requirements in software development.

Week 4: System Design
● Exploring software design principles and practices and UML diagrams.
● Discussing various design patterns and techniques for creating efficient and maintainable software.

Week 5: Accessibility & usability
● Focusing on making software accessible to individuals with disabilities.
● Learning about accessibility standards and best practices.
● Introduction to usability.

Week 6: Refactoring
● Discussing the process of refactoring code to improve its structure and maintainability.
● Identifying common code smells and refactoring patterns.

Week 8: Work Week - In-class Challenges
● Check in with all groups on their production plan and workload and provide detailed feedback.

Week 9: Mid-term Presentation - 1st deliverable
● Mid-term progress check for ongoing projects.

Week 10: After Mid-term Presentation
● In class critique of all works

Week 11: HCI and UI (Human-Computer Interaction)
● Exploring the field of Human-Computer Interaction.
● Understanding how user interfaces and interactions impact software design and usability.
● More about usability and accessibility

Week 12: Testing
● Exploring various software testing techniques, including unit testing, integration testing, and user acceptance testing.
● Emphasizing the importance of testing in ensuring software quality.

Week 13: Usability Testing - 2nd deliverable
• Conducting tests to evaluate the user-friendliness of software.

Week 14: Debugging, Software Maintenance and Evolution

• Presentations and discussions related to debugging techniques and strategies.
• Understanding the challenges and strategies for maintaining and evolving software systems.
• Discussing the importance of software updates and version control.

Week 15: Discussion Week

• Reading assignments and discussions on selected topics related to software development and best practices.

Week 16: Work Week - In-class Challenges

Week 17: Final Week Presentations

• Final presentations of student projects, showcasing what was learned and accomplished during the course.

Technical Requirements & Skills
Minimum Technology Requirements

• Computer
• Reliable internet access
• Canvas Technical Requirements

(https://clear.unt.edu/supported-technologies/canvas/requirements)

Computer Skills & Digital Literacy

• Using Canvas
• Using email with attachments
• Downloading and installing software

Netiquette

• Treat your instructor and classmates with respect in email or any other communication.
• Always use your professors’ proper title: Dr. or Prof., or if in doubt use Mr. or Ms.
• Unless specifically invited, don’t refer to your instructor by first name.
• Use clear and concise language.
• Remember that all college level communication should have correct spelling and grammar (this includes discussion boards).
• Avoid slang terms such as “wassup?” and texting abbreviations such as “u” instead of “you.”
• Use standard fonts such as Arial, Calibri or Times new Roman and use a size 10 or 12 point font
• Avoid using the caps lock feature AS IT CAN BE INTERPRETTED AS YELLING.
• Limit and possibly avoid the use of emoticons like :) or .
• Be cautious when using humor or sarcasm as tone is sometimes lost in an email or discussion post and your message might be taken seriously or sound offensive.
• Be careful with personal information (both yours and other’s).
• Do not send confidential information via e-mail
Academic Support Services

- Academic Resource Center (https://clear.unt.edu/canvas/student-resources)
- Academic Success Center (https://success.unt.edu/asc)
- UNT Libraries (https://library.unt.edu/)
- Writing Lab (http://writingcenter.unt.edu/)
- MathLab (https://math.unt.edu/mathlab)

Course Policies:

Late Work
You will not be able to receive a full grade for late submissions. Please ensure that you submit your work on time. If you anticipate needing more time for any reason, it is essential to inform the instructor in advance and provide a valid reason for requesting an extension. Without advance notice and a valid reason, we may not be able to accommodate late submissions.

Attendance Policy
Attendance is mandatory for this class. In the event of an absence, it is essential to promptly inform the instructor and provide appropriate documentation as proof for the absence.

Class Participation

Regular Attendance: Attendance is expected for all scheduled classes. Please make an effort to attend each session unless circumstances prevent you from doing so. If you must miss a class, inform the instructor in advance whenever possible.

Active Engagement: Actively engage in class discussions, group activities, and exercises. Share your insights, ask questions, and contribute to the overall learning experience.

Respectful Interaction: Treat your fellow classmates, the instructor, and guest speakers with respect and courtesy. Listen attentively when others are speaking and avoid interrupting or dominating discussions.

Preparation: Come to class prepared by reviewing assigned readings or materials beforehand. This preparation will enable you to participate meaningfully in discussions and activities.

Quality over Quantity: It's not about the quantity of your contributions but the quality. Thoughtful and relevant contributions are more valuable than mere repetition.

Grading Policy

The various components of your grade are weighted as follows:

- Team Project and presentation 45%
- Group Assignments 25%
- Updated documentations and production plan & following agile %20
- Individual Peer evals 5%
- Attendance: 5%

Team Project and Presentation (45%) This portion of your grade is primarily based on your performance in a team project, including the quality of the project's implementation and your team's presentation. Your ability to work collaboratively, meet project goals, and effectively communicate your findings will be assessed.

Group Assignments (25%) Group assignments refer to collaborative tasks or projects that you'll work on with your classmates. Your grade in this category reflects your ability to contribute to and complete group assignments successfully, demonstrating teamwork and problem-solving skills.
Updated Documentations and Production Plan & Following Agile (20%) This section evaluates your proficiency in maintaining and improving project documentation, such as project plans and documentation updates. It also assesses your ability to adhere to Agile methodologies, which emphasize iterative and collaborative development processes.

Individual Peer Evaluations (5%) Individual peer evaluations involve your fellow students assessing your contributions to group work. It’s an opportunity for your peers to provide feedback on your teamwork, participation, and contributions to group projects.

Attendance (5%) Your attendance grade reflects your presence and participation in class sessions. Regular attendance is essential to engage with course material, discussions, and activities. Missing classes may affect this portion of your grade.

Grading
A = 90-100
B = 80-89
C = 70-79
D = 60-69
F = 50-59

Course Evaluation
Student Perceptions of Teaching (SPOT) is the student evaluation system for UNT and allows students the ability to confidentially provide constructive feedback to their instructor and department to improve the quality of student experiences in the course.

Syllabus Change Policy
Please be aware that the syllabus, course details, and due dates are subject to change during the course. Updates will be communicated through class announcements, email, or the course management system. Changes may arise to enhance the learning experience or address unforeseen circumstances. It is your responsibility to stay informed and adapt as necessary. Your understanding and cooperation are appreciated as we strive to provide the best possible learning environment.

Academic integrity
This course follows UNT’s policy for Student Academic Integrity that can be found at https://policy.unt.edu/policy/06-003 as well as the Cheating Policy for the Department of Computer Science and Engineering. Specifically, the first instance of a student found to have violated the academic integrity (i.e., cheating) policy will result in a grade of “F” for the course and have a report filed into the Academic Integrity Database, which may include additional sanctions.

ADA Policy
UNT makes reasonable academic accommodation for students with disabilities. Students seeking accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide a student with an accommodation letter to be delivered to faculty to begin a private discussion regarding one’s specific course needs. Students may request accommodations at any time, however, ODA notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of accommodation for every semester and must meet with each faculty member prior to implementation in each class. For additional information see the ODA website (https://disability.unt.edu/).

Technical Assistance
Here at UNT we have a Student Help Desk that you can contact for help with Canvas or other technology issues.

**UIT Help Desk:** http://www.unt.edu/helpdesk/index.htm
**Email:** helpdesk@unt.edu
**Phone:** 940-565-2324
**In Person:** Sage Hall, Room 130
**Walk-In Availability:** 8am-9pm
**Telephone Availability:**
- Sunday: noon-midnight
- Monday-Thursday: 8am-midnight
- Friday: 8am-8pm
- Saturday: 9am-5pm

**Laptop Checkout:** 8am-7pm
For additional support, visit Canvas Technical Help (https://community.canvaslms.com/docs/DOC-10554-4212710328)

**Student Support Services**
- Registrar (https://registrar.unt.edu/registration)
- Financial Aid (https://financialaid.unt.edu/)
- Student Legal Services (https://studentaffairs.unt.edu/student-legal-services)
- Career Center (https://studentaffairs.unt.edu/career-center)
- Multicultural Center (https://edo.unt.edu/multicultural-center)
- Counseling and Testing Services (https://studentaffairs.unt.edu/counseling-and-testing-services)
- Student Affairs Care Team (https://studentaffairs.unt.edu/care)
- Student Health and Wellness Center (https://studentaffairs.unt.edu/student-health-and-wellness-center)
- Pride Alliance (https://edo.unt.edu/pridealliance)

**Emergency Notification & Procedures**
UNT uses a system called Eagle Alert to quickly notify students with critical information in the event of an emergency (i.e., severe weather, campus closing, and health and public safety emergencies like chemical spills, fires, or violence). In the event of a university closure, please refer to Blackboard for contingency plans for covering course materials.

**Retention of Student Records**
Student records pertaining to this course are maintained in a secure location by the instructor of record. All records such as exams, answer sheets (with keys), and written papers submitted during the duration of the course are kept for at least one calendar year after course completion. Course work completed via the Blackboard online system, including grading information and comments, is also stored in a safe electronic environment for one year. Students have the right to view their individual record; however, information about student’s records will not be divulged to other individuals without proper written consent. Students are encouraged to review the Public Information Policy and the Family Educational Rights and Privacy Act (FERPA) laws and the University’s policy. See UNT Policy 10.10, Records Management and Retention for additional information.

**Acceptable Student Behavior**
Student behavior that interferes with an instructor’s ability to conduct a class or other students' opportunity to learn is unacceptable and disruptive and will not be tolerated in any instructional forum at UNT. Students engaging in unacceptable behavior will be directed to leave the classroom and the instructor may refer the student to the Dean of Students to consider whether the student's conduct violated the Code of Student Conduct. The University's expectations for student conduct apply to all instructional forums, including University and electronic classroom, labs, discussion groups, field trips, etc. Visit UNT’s Code of Student Conduct (https://deanofstudents.unt.edu/conduct) to learn more.

Access to Information - Eagle Connect
Students’ access point for business and academic services at UNT is located at: my.unt.edu. All official communication from the University will be delivered to a student’s Eagle Connect account. For more information, please visit the website that explains Eagle Connect and how to forward email Eagle Connect (https://it.unt.edu/eagleconnect).

Sexual Assault Prevention
UNT is committed to providing a safe learning environment free of all forms of sexual misconduct, including sexual harassment sexual assault, domestic violence, dating violence, and stalking. Federal laws (Title IX and the Violence Against Women Act) and UNT policies prohibit discrimination on the basis of sex, and therefore prohibit sexual misconduct. If you or someone you know is experiencing sexual harassment, relationship violence, stalking, and/or sexual assault, there are campus resources available to provide support and assistance. UNT’s Survivor Advocates can assist a student who has been impacted by violence by filing protective orders, completing crime victim’s compensation applications, contacting professors for absences related to an assault, working with housing to facilitate a room change where appropriate, and connecting students to other resources available both on and off campus. The Survivor Advocates can be reached at SurvivorAdvocate@unt.edu or by calling the Dean of Students Office at 940-565- 2648. Additionally, alleged sexual misconduct can be non-confidentially reported to the Title IX Coordinator at oeo@unt.edu or at (940) 565 2759.

Important Notice for F-1 Students taking Distance Education Courses

Federal Regulation
To read detailed Immigration and Customs Enforcement regulations for F-1 students taking online courses, please go to the Electronic Code of Federal Regulations website (http://www.ecfr.gov/). The specific portion concerning distance education courses is located at Title 8 CFR 214.2 Paragraph (f)(6)(i)(G).

The paragraph reads:
(G) For F-1 students enrolled in classes for credit or classroom hours, no more than the equivalent of one class or three credits per session, term, semester, trimester, or quarter may be counted toward the full course of study requirement if the class is taken on-line or through distance education and does not require the student’s physical attendance for classes, examination or other purposes integral to completion of the class. An on-line or distance education course is a course that is offered principally through the use of television, audio, or computer transmission including open broadcast, closed circuit, cable, microwave, or satellite, audio conferencing, or computer conferencing. If the F-1 student's course of study is in a language study program, no on-line or distance education classes may be considered to count toward a student's full course of study requirement.

University of North Texas Compliance
To comply with immigration regulations, an F-1 visa holder within the United States may need to engage in an on-campus experiential component for this course. This component (which must be approved in advance by the instructor) can include activities such as taking an on-campus exam, participating in an on-campus lecture or lab activity, or other on-campus experience integral to the completion of this course. If such an on-campus activity is required, it is the student’s responsibility to do the following:
(1) Submit a written request to the instructor for an on-campus experiential component within one week of the start of the course.

(2) Ensure that the activity on campus takes place and the instructor documents it in writing with a notice sent to the International Student and Scholar Services Office. ISSS has a form available that you may use for this purpose. Because the decision may have serious immigration consequences, if an F-1 student is unsure about his or her need to participate in an on-campus experiential component for this course, s/he should contact the UNT International Student and Scholar Services Office (telephone 940-565-2195 or email internationaladvising@unt.edu) to get clarification before the one-week deadline.

Student Verification
UNT takes measures to protect the integrity of educational credentials awarded to students enrolled in distance education courses by verifying student identity, protecting student privacy, and notifying students of any special meeting times/locations or additional charges associated with student identity verification in distance education courses. See UNT Policy 07-002 Student Identity Verification, Privacy, and Notification and Distance Education Courses (https://policy.unt.edu/policy/07-002).

Use of Student Work
A student owns the copyright for all work (e.g. software, photographs, reports, presentations, and email postings) he or she creates within a class and the University is not entitled to use any student work without the student’s permission unless all of the following criteria are met:

- The work is used only once.
- The work is not used in its entirety.
- Use of the work does not affect any potential profits from the work.
- The student is not identified.
- The work is identified as student work.

If the use of the work does not meet all of the above criteria, then the University office or department using the work must obtain the student’s written permission.

Download the UNT System Permission, Waiver and Release Form