

CMPE DESIGN II-Spring 2024

CSCE 4915-004

Course Instructor: Dr. Pradhumna Shrestha

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- Include CSCE 4915.004 in subject line
- Always use your official UNT email address

Class Location/Time: NTDP F260, TuTh 12:30 PM - 1:50 PM

Office Hours (In-person/Zoom): MoWe 2:30 PM-3:30 PM @F265 or via appointment

Office Hours Zoom Link: <https://unt.zoom.us/j/3251832551>

COURSE DESCRIPTION

Second course in the senior capstone design sequence. The focus of this class is the application of techniques to the design of electronic systems that have digital hardware and software components. Students will apply the theory acquired from numerous engineering courses to solve real-world design problems. The design will consider realistic constraints including economic, environmental, sustainability, manufacturability, ethical, social, safety.

COURSE OUTCOMES

- Create a detailed systems design and implementation plan using standard engineering tools and methodology.
- Implement the design for a processor-based system.
- Create a test plan and series of test procedures for a project and execute the procedures against the components created.
- Create a delivery and maintenance plan for the system.
- Utilize configuration management, project management and design tools in the course of the project.
- Create a lifecycle plan for the system developed.

PROGRAM OUTCOME MAPPING

- An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
- An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
- An ability to communicate effectively with a range of audiences

- An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
- An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
- An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
- An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

TEXTBOOK

System Engineering Analysis, Design, and Development: Concepts, Principles, and Practices, by Charles S. Wasson, Second Edition, ISBN: 978-1-118-44226-5.

REFERENCE TEXTBOOK

- Design for Electrical and Computer Engineers: Theory, Concepts, and Practice, by Ralph M. Ford and Chris S. Coulston, First Edition, ISBN: 978-0-07-338035-3.
- Testing Across the Entire Software Development Life Cycle by Gerald D. Everett and Raymond McLeod, Jr. John Wiley & Sons, Inc., Hoboken, New Jersey. 2007. ISBN 978-0-471-79371-7.

PRE-REQUISITES: CSCE 3612 and EENG 3510.

TOPICS TO BE COVERED

- Design Process and Requirements
- Project Management
- RUP and Use Cases
- Preliminary Design and Detailed Design

SCHEDULE AND GRADING

Attendance: 5%

Individual Project Deliverables: 10%

Team Project Deliverables: 35%

Team Presentation (04/28/2021): 10%

Demonstrations: 40%

Notes:

ATTENDANCE POLICY

Class attendance is regarded as an obligation as well as a privilege. All students are therefore expected to attend each class meeting. *A student who misses class is still responsible to find out what was discussed and to learn the material that was covered and obtain the homework that was assigned on the missed day.* The instructor is not responsible for re-teaching material missed by a student who did not attend class. Therefore, each student is accountable for and will be evaluated on *all* material covered in this course, regardless of attendance.

Attendance/Participation grades will be based on attendance, contribution to in-class discussions, and assessment of any in-class work. Disruptive behavior and unexcused absences deemed excessive will result in a lower attendance/participation grade.

DELIVERABLES

There will be few individual deliverables and few team deliverables. Every deliverable will have sample template document which is required to be used by the team and the members to turn in the deliverables.

DEMONSTRATION

It is expected that you complete all your project requirements towards the end of the semester. At the end of the semester, each team member will demonstrate their self-assigned project requirements. All self-assigned project requirements must be completed and demonstrated to earn the complete 40% towards the demonstration. A partial completion of the requirements or demonstration does not earn any points (zero credit) towards demonstration. It is your responsibility to discuss with the instructor to make sure that you have completed all the requirements before the final demonstration.

ABSTRACTS

Teams must submit abstracts by 03/10. Sample of abstracts will be provided.

PITCH VIDEO

Teams must submit a 5-minute-long pitch video to demonstrate their product. The objective is to “sell your product” to a wider audience. The video must be submitted by 04/19.

SHOWCASE

Teams must showcase their project or product on the Senior Design Day (tentatively 04/25). Showcase includes the demonstration of their project or product to potential employers or visitors or guests. Showcase will also include a poster and a presentation that describes your project. Attendance is required for all team members. Failing to take part in the showcase will automatically result in a failing grade for the class.

TEAM PRESENTATION

There will be a 15-minute presentation by each team. Attendance is required.

• **Team Presentation: TBD**

GRADING POLICY

Grades will be posted on Canvas throughout the semester to provide an ongoing assessment of student progress, though final assessment will be measured using the weighted average above.

Also, once a grade is assigned on Canvas, students have two weeks to dispute the grade.

STUDENT RESPONSIBILITY

Students are responsible for submitting the *correct* assignments (i.e., uploading the proper files) for each applicable assignment submission on Canvas. When an incorrect assignment is submitted to Canvas, students wanting to resubmit with the correct file(s) *after the due date has passed* will have their assignment assessed a 30% reduction penalty. Proof must be given (i.e., timestamp for the file on the CSE machines) that the assignment was completed on time. If you have any questions or concerns about your submission, please work with your instructor or TA/IA for this course to ensure the correct file(s) is/are submitted.

ADA STATEMENT

The University of North Texas 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 you with an accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You 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 Office of Disability Accommodation website at <http://disability.unt.edu>. You may also contact them by phone at (940) 565-4323.

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. The Code of Student Conduct can be found at <http://deanofstudents.unt.edu>.

ACADEMIC DISHONESTY

This course follows the Department of Computer Science and Engineering *Cheating Policy*. Specifically, students caught cheating or plagiarizing will receive a "0" for that particular assignment or exam for the first offense. Additionally, the incident may be reported to the Dean of Students, who may impose a further penalty. A second instance of cheating in this class will result in a grade of F in the class, and referral to the Department Chairperson and Dean of Engineering, whereby a dismissal hearing may be initiated by the Dean of Engineering.

Students are responsible for being familiar with the university standard for academic integrity. In the case that the above description or any in-class discussion of appropriate and inappropriate

collaboration do not answer all of your questions, please meet with your instructor and look at the university Student Rights and Responsibilities web page.

SYLLABUS REVISIONS

This syllabus may be modified as the course progresses should the instructor deem it necessary. Notice of changes to the syllabus shall be made through Canvas and/or class announcement.

TENTATIVE SCHEDULE

Week	Lecture	Deliverables
01/15 – 01/19	Course Overview	
01/22 – 01/26	Implementation Plan	
01/29 – 02/02	Continue Development	Implementation Plan (5%) (5%)
02/05 – 02/09	Continue Development	Status Report (2%)
02/12 – 02/16	Continue Development	Final parts and Service Orders Due
02/19 – 02/23	Test Plan	
02/26 – 03/01	Continue Development	Test Plan (5%) (5%)
03/04 – 03/08	Continue Development	Status Report (2%)
03/11 – 03/15	Spring Break	
03/18 – 03/22	Maintenance Plan	Abstract (1%)
03/25 – 03/29	Continue Development	Maintenance Plan (5%)
04/01 – 04/05	User Guide	Status Report (2%)
04/08 – 04/12	Continue Development	User Guide (5%)
04/15 – 04/19	Continue Development	Pitch Video (1%)
04/22 – 04/26	Continue Development	Showcase (5%)
04/29 – 05/03	Continue Development	Final Project Report (2%)
05/06 – 05/10	Finals Week	Demonstrations (40%)/ Team Presentation (10%)