

CMPE DESIGN II-Spring 2021

CSCE 4915-002/005

Course Instructor: Dr. Pradhumna Shrestha

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- Include CSCE 4915.002/005 in subject line
- Always use your official UNT email address

Class Location/Time:

4915.005 (Face-to-face): NTDP F260, MoWe 4:00 PM - 5:20 PM

4915.002 (Online): <https://unt.zoom.us/j/87057210116>, MoWe 4:00 PM - 5:20 PM

Office Hours: Mo 11:30 AM-12:30 PM, Tu 1:30 PM-2:30 PM 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.

COVID-19 Impact on Attendance

While attendance is expected as outlined above, it is important for all of us to be mindful of the health and safety of everyone in our community, especially given concerns about COVID-19. Please contact me if you are unable to attend class because you are ill, or unable to attend class due to a related issue regarding COVID-19. It is important that you communicate with me prior to being absent so I may make a decision about accommodating your request to be excused from class.

If you are experiencing any symptoms of COVID-19 (<https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html>) please seek medical attention from the Student Health and Wellness Center (940-565-2333 or askSHWC@unt.edu) or your health care provider PRIOR to coming to campus. UNT also requires you to contact the UNT COVID Hotline at 844-366-5892 or COVID@unt.edu for guidance on actions to take due to symptoms, pending or positive test results, or potential exposure. While attendance is an important part of succeeding in this class, your own health, and those of others in the community, is more important.

Class Materials for Remote Instruction

Remote instruction may be necessary if community health conditions change or you need to self-isolate or quarantine due to COVID-19. Students will need access to a computer (laptop or desktop) with a webcam, a speaker, a microphone and reliable internet connection to participate in fully remote portions of the class. Additional required classroom materials for remote learning will be announced when relevant. Information on how to be successful in a remote learning environment can be found at <https://online.unt.edu/learn>.

Students enrolled in the remote section of the class are expected to have all these materials and equipment from the first day of the class.

Statement on Face Covering

Face coverings are required in all UNT facilities. Students are expected to wear face coverings during this class. If you are unable to wear a face covering due to a disability, please contact the Office of Disability Access to request an accommodation. UNT face covering requirements

are subject to change due to community health guidelines. Any changes will be communicated via the instructor.

Class Recordings & Student Likenesses

Synchronous (live) sessions in this course will be recorded for students enrolled in this class section to refer to throughout the semester. Class recordings are the intellectual property of the university or instructor and are reserved for use only by students in this class and only for educational purposes. Students may not post or otherwise share the recordings outside the class, or outside the Canvas Learning Management System, in any form. Failing to follow this restriction is a violation of the UNT Code of Student Conduct and could lead to disciplinary action.

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.

SHOWCASE

Teams must showcase their project or product on the Senior Design Day (tentatively 04/17). 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: Wednesday, April 28, 2021 1:30 PM – 3:30 PM.**

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
01/11 – 01/15	Course Overview	
01/18 – 01/22	Implementation Plan	Implementation Plan (5%) (5%)
01/25 – 01/29	Continue Development	Final parts and Service Orders Due
02/01 – 02/05	Continue Development	Status Report (2%)
02/08 – 02/12	Continue Development	
02/15 – 02/19	Test Plan	
02/22 – 02/26	Continue Development	Test Plan (5%) (5%)
03/01 – 03/05	Continue Development	Status Report (2%)
03/08 – 03/12	Continue Development	
03/15 – 03/19	Maintenance Plan	
03/22 – 03/26	Continue Development	Maintenance Plan (5%)
03/29 – 04/02	User Guide	Status Report (2%)
04/05 – 04/09	Continue Development	User Guide (5%)
04/12 – 04/16	Continue Development	Showcase (7%)
04/19 – 04/23	Demonstrations	Demonstrations (40%)
04/26 – 04/30	Finals Week	Team Presentation (10%) /Final Project Report (2%)