SIGNALS AND SYSTEMS  
CSCE 3010-001

Instructor: Dr. Pradhumna Shrestha  
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Class hours: MoWe 4:00PM - 5:20PM  
Classroom: NTDP B155

COURSE DESCRIPTION  
The objective of this course is to introduce advanced concepts in signal and system analysis. Topics such introduction to signals and systems, their properties and types, frequency domain analysis of signals, and time and frequency descriptions of systems will be discussed. It is expected that, by the end of the course, the students will understand the mathematics behind analyzing any signal or system. MATLAB software will be used as a teaching tool.

COURSE OUTCOMES  
1. Understand the mathematical descriptions of continuous-time (CT) and discrete-time (DT) signals.  
2. Understand the characteristics and properties of real systems.  
3. Analyze signals and systems in both the time and frequency domain.  
4. Gain experience with CT and DT Fourier series.  
5. Apply the properties of the Fourier transform, Laplace transform and z-transform to real systems.
RECOMMENDED TEXTBOOK
ISBN-10: 0073380687

PRE-REQUISITES: ENGR 2405; ENGR 2415; and MATH 2730 or MATH 3410

TOPICS TO BE COVERED
1. Introduction to Signals and Systems
2. Linear Time Invariant Systems
3. Fourier Series
4. Continuous Time Fourier Transform
5. Discrete Time Fourier Transform
6. Time and Frequency Representation of Signals and Systems
7. Laplace Transform
8. Z-Transform

SCHEDULE AND GRADING
Attendance/Class Participation: 5%
Homework and Assignments: 30%
Exam 1 10/13: 20%
Exam 2 12/14: 30%
Project/Programming Assignments: 15%
Notes:

ATTENDANCE POLICY
Student attendance will be recorded. Every student who misses a class is responsible to learn the materials discussed and obtain the homework assigned on the missed class. The instructor is not responsible for re-teaching the material missed by a student who did not attend the class. Absence in class and lack of participation in class discussions may result in lowering of the grades.

HOMEWORK AND ASSIGNMENTS
Homework and assignments will be provided every week and will be due by the designated deadline. Paper submission of homework and assignments is acceptable but an electronic submission by scanning or taking a clear picture is preferred. You will get only half of the points if you are late in turning in the assignments. Assignment turned a week late without instructor’s approval will still be graded but receive zero points. It is expected of the students to show utmost sincerity and honesty in completing their assignments. While discussion among students is encouraged, sharing solutions and copying someone else’s work is strictly prohibited. Any student engaged in such activities will receive no credit for the assignment.

EXAMS I/MIDTERM EXAM
Exams I will be a written exam and will be held in regular classroom hours. The exam will cover the topics discussed up to 1 week ahead of the exam date. The students are expected to give the exams on their own and no discussions will be allowed.

EXAM II/FINAL EXAM
Exam II will be held in the finals week in the regular classroom hours. The exam will cover all material discussed over the semester. The students are expected to give the exams on their own and no discussions will be allowed.

PROJECT
MATLAB coding assignments will be provided throughout the semester. The students will need to submit the codes via email or blackboard before the due date. Each student is expected to solve the problem and write the MATLAB codes on their own. Copying someone else’s work will receive zero credit.

GRADING
If the students are not satisfied with their grades, they will have to schedule an appointment with the instructor at least 24 hours after receiving the grades. Classroom hours will not be used for discussing grades.
EXTRA CREDIT
The students will get an opportunity to earn extra credit by solving take-home problems. The students are expected to solve the problems on their own. Any evidence of cheating will result in zero credit and no further opportunities to earn extra credit.

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.