EE 2370 - Design and Analysis of Signals and Systems
Spring 2017

Course Catalog Description:

EE 2370 (3). DESIGN AND ANALYSIS OF SIGNALS AND SYSTEMS.
Introduces standard mathematical tools for analyzing and designing various continuous-time signals and systems. Studies frequency domain design and analysis techniques, the Fourier and Laplace transforms, and applications such as modulation and demodulation in communications and processing of audio signals.
Prerequisites: MATH 2343, C- or better in EE 2350. Corequisite: EE 2170.

Time: TuTh 8:00-9:20 AM
Location: Caruth Hall 0184

Instructor: Duncan MacFarlane
Office: Room 101B, Embrey
Phone: 214-768-1891
E-mail: dmacfarlane@smu.edu
Office hours: TuTh 9:30-10am and by appointment (email me at dmacfarlane@smu.edu)

Teaching Assistant/Grader: Regan Klein rlklein@mail.smu.edu

Required Textbook:

Alan V. Oppenheim, Alan S. Willsky, and S. Hamid Nawab, "Signals & Systems", Second Edition, Prentice-Hall Inc., New Jersey, 1997. ISBN 0-13-814757-4

Suggested Course Materials

MatLab, LabView, Mathematica or other computational software package that supports FFTs and Graphing.
Introduction to Matlab material can be found at www.lyle.smu.edu/~dmacfarlane

Course Topics:
- Signals and Systems
- Linear Time Invariant (LTI) Systems
- Fourier Series
- Fourier Transforms
- Time and Frequency
- Sampling

Student Learning Outcomes:
- The students will learn to fundamental manipulations of signals.
- The students will learn to model the interaction if signals with Linear Time Invariant (LTI) Systems
- The students will learn fundamentals of Fourier Analysis

Homework:
No problem sets will be collected, but a list of homework problems will be handed out (and posted on line) in the first class meeting. Working through these problems diligently will help your grade in the course because these problems and similar ones will appear on the tests. I encourage you to work and learn in groups in doing the homework problems before the exams.

Exams:
There will be two midterm exams and a comprehensive in-class final exam. These must be individual efforts. The exams will be closed book, closed notes, no calculator.

Grading Policy:

Mid-Term Exam 1: 30%
Mid-Term Exam 2: 30%
Final Exam: 40%

Incomplete Policy:
An Incomplete(I) may be given if the majority of the course requirements have been completed with passing grades but for some justifiable reason acceptable to the instructor, the student has been unable to complete the full requirements of the course. Before an (I) is given, the instructor should stipulate in writing to the student the requirements and completion date that are to be met and the grade that will be given if the requirements are not met by the completion date. The maximum period of time allowed to clear the Incomplete grade is 12 months (except for graduate thesis and dissertation courses.) If the Incomplete grade is not cleared by the date set by the instructor or by the end of the 12-month deadline, the (I) may be changed to an F, WP or other grade, each of which is prescribed for other specific purposes. If the student's work is incomplete and the quality has not been passing, an F will be given. The grade of (I) does not authorize the student to attend the course during a later semester. Graduation candidates must clear all Incompletes prior to the deadline in the University Calendar, which may allow less time than 12 months. Failure to do so can result in removal from the degree candidacy list and/or conversion of the (I) to the grade indicated by the instructor at the time the (I) was given.

Disability Accommodations:
Students needing academic accommodations for a disability must first register with Disability Accommodations & Success Strategies (DASS). Students can call 214-768-1470 or visit http://www.smu.edu/Provost/ALEC/DASS to begin the process. Once registered, students should then schedule an appointment with the professor as early in the semester as possible, present a DASS Accommodation Letter, and make appropriate arrangements. Please note that accommodations are not retroactive and require advance notice to implement.

Religious Observance:
Religiously observant students wishing to be absent on holidays that require missing class should notify their professors in writing at the beginning of the semester, and should discuss with them, in advance, acceptable ways of making up any work missed because of the absence. (See University Policy No. 1.9.)

Excused Absences for University Extracurricular Activities:
Students participating in an officially sanctioned, scheduled University extracurricular activity should be given the opportunity to make up class assignments or other graded assignments missed as a result of their participation. It is the responsibility of the student to make arrangements with the instructor prior to any missed scheduled examination or other missed assignment for making up the work. (University Undergraduate Catalogue)

Academic Honesty
Academic dishonesty may be defined broadly as a student' misrepresentation of his or her academic work or of the circumstances under which the work is done. This includes plagiarism in all papers, projects, take-home exams, or any other assignments in which the student represents work as being his or her own. It also includes cheating on examinations, unauthorized access to test materials, and aiding another student to cheat or participate in

an act of academic dishonesty. Failure to prevent cheating by another may be considered as participation in the dishonest act.

The SMU Honor Code (http://www.smu.edu/studentlife/PCL_05_HC.asp) states:
"Intellectual integrity and academic honesty are fundamental to the process of learning and of evaluating academic performance, and maintaining them is the responsibility of all members of an educational institution. The inculcation of personal standards of honesty and integrity is a goal of education in all the disciplines of the University. The faculty has the responsibility of encouraging and maintaining an atmosphere of academic honesty by being certain that students are aware of the value of it, that they understand the regulations defining it, and that they know the penalties for departing from it. The faculty should, as far as is reasonably possible, assist students in avoiding the temptation to cheat. Faculty members must be aware that permitting dishonesty is not open to personal choice. A professor or instructor who is unwilling to act upon offenses is an accessory with the student offender in deteriorating the integrity of the University. Students must share the responsibility for creating and maintaining an atmosphere of honesty and integrity. Students should be aware that personal experience in completing assigned work is essential to learning. Permitting others to prepare their work, using published or unpublished summaries as a substitute for studying required materials, or giving or receiving unauthorized assistance in the preparation of work to be submitted are directly contrary to the honest process of learning. Students who are aware that others in a course are cheating or otherwise acting dishonestly have the   responsibility to inform the professor and/or bring an accusation to the Honor Council. Students and faculty members must mutually share the knowledge that any dishonest practices permitted will make it more difficult for the honest students to be evaluated and graded fairly and will damage the integrity of the whole University. Students should recognize that both their own interest, and their integrity as individuals, suffers if they condone dishonesty in others."