EE2353 (CRN 22836)
CONTINUOUS-TIME SIGNALS AND SYSTEMS
SYLLABUS FOR SUMMER 2018

INSTRUCTOR: Dr. Hector Erives, Lecturer
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OFFICE HRS.: Monday-Friday 8:45 - 9:15 PM

CLASS TIME/PLACE: MTWRF 9:20 AM – 11:30 AM Liberal Arts Building 306

TEXTBOOK: SIGNALS, SYSTEMS AND TRANSFORMS, FIFTH EDITION by C. L. Phillips, J M. Parr, and E. A. Riskin, Prentice-Hall, 2014. Use of earlier editions is OK but you are responsible for tracking any differences and the accuracy of section and problem questions and numbers from the textbook. This is the book URL with some good demos and alternative presentations: http://www.ee.washington.edu/class/SST_textbook/textbook.html

Catalog Description: Representation and analysis of continuous time signals; time and frequency analysis of linear timeinvariant systems; convolution, differential equations, Laplace transform, Fourier series and transform, filters.

Pre-requisites: MATH1312 Calculus 2, and MATH 2326 Differential Equations, all with a minimum grade of "C".

Co-requisite: EE2351 Electric Circuits 2 (thus, EE2350 Electric Circuits 1 is a pre-requisite).

Prerequisites by topic: Calculus and Differential Equations; Complex Numbers and Functions; Basic Circuit Analysis; basic familiarity with modern software tools in Electrical Engineering such as MATLAB.

Critical Course Outcomes. By the end of the semester you will (at least) demonstrate the ability to:
- Carry out transformations of signals and characteristics of continuous-time (C-T) signals and systems.
- Apply convolution and its properties to solve Linear Time-Invariant (LTI) systems.
- Use Fourier series, Fourier transforms and their properties to analyze C-T signals and systems.
- Compute and use impulse and frequency responses of linear time invariant systems.
- Use the Laplace transform to analyze C-T systems.

COURSE GRADING
• In-class Semester Exams (2 in-class exams)	2x30%
• Homework, MATLAB Projects	10%
• Quizzes	10%
• Comprehensive Final Exam, during Final Exams week	20%

USE OF E-MAIL: Each student is required to read their officially registered UTEP e-mail account often enough to monitor ongoing information related to this course. All assignments will be sent via e-mail. Treat e-mail correspondence as a professional exchange of information. Use an accurate "Subject" and never "reply to all" when an e-mail is sent to the whole class.

COMPUTER USAGE: The MATLAB software package (with many Toolboxes) is made available via download or a DVD to all Engineering Students from the Engineering Technology Center (ETC) Engineering building E351D (3rd floor between CRBL and Eng. Bldg.) http://etc.utep.edu/, Tel. (915)747-5223, E-mail: etchelpdesk@utep.edu

TOPICS TO BE COVERED FROM THE TEXTBOOK (the exact order, pages and/or sections and subsections will be listed in homework assignment handouts). See the Appendices for very useful review and reference material!

I- Introduction (Chapter 1)
    a) Modeling of continuous-time physical systems.
    b) Examples of physical systems; electric circuits.

II- Continuous-Time (C-T) Signals and Systems (Chapter 2)
   a) Axis and amplitude transformations and basic properties.
   b) Common signals used in the course.
   c) Definition and properties of continuous-time systems.

III- Continuous-time Linear Time-Invariant (LTI) Systems (Chapter 3)
   a) Impulse response of LTI systems
   b) C-T convolution: its role and computation
   c) Properties of LTI systems

IV- Fourier Series (FS) (Chapter 4)
   a) Definition, obtaining the FS coefficients.
   b) Frequency Spectra of periodic signals.
   c) FS and transformations of signals.
   d) FS and LTI system responses.

V & VI- Fourier Transform (FT) (Chapter 5 and parts of 6)
   a) Basic transform pairs for important signals
   b) Basic transform properties and applications
   c) Applications to LTI system analysis
   d) Introduction to sampling and reconstruction theory.

VII- Laplace Transform (LT) (Chapter 7)
   a) Basic transform pairs for important signals
   b) Basic transform properties and applications
   c) Application of LT to LTI system analysis
   d) Relationship of bilateral LT to CTFT

EFFORT, PARTICIPATION and ETIQUETTE:

- Come to class and show up on time. Habitual late comers may not be allowed in class without a justification.
- Leaving early is considered disruptive and unprofessional, it should be kept to a minimum. Inform the instructor ahead of time if you must leave early and sit near the door to minimize disruptions. If you must leave the classroom, please don't come back as it will cause a second disruption.
- Ask questions of broad interest, your fellow students will also benefit. Bring your book to class.
- Turn down the sound on cell phones, beepers, i-pods, etc. during the class period.
- The use of cellular phones during exams and quizzes is strictly prohibited, put them away.
- Do not bring smelly food into the classroom.

ACADEMIC INTEGRITY

Please review the statements below and UTEP's Web page on Policy on Academic Integrity at: http://sa.utep.edu/osccr/academic-integrity/

Academic dishonesty is prohibited and is considered a violation of the UTEP Handbook of Operating Procedures. It includes, but is not limited to, cheating, plagiarism, and collusion. Cheating may involve copying from or providing information to another student, possessing unauthorized materials during a test, or falsifying research data on laboratory reports. Plagiarism occurs when someone intentionally or knowingly represents the words or ideas of another person's as ones' own. And, collusion involves collaborating with another person to commit any academically dishonest act. Any act of academic dishonesty attempted by a UTEP student is unacceptable and will not be tolerated. Violations will be taken seriously and will be referred to the Dean of Students Office for possible disciplinary action. Students may be suspended or expelled from UTEP for such actions.