

ECE301: SIGNALS AND SYSTEMS

Summer 2016

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Office Hours:	TF: 12-2pm	Office Hours:	MR: 12-2pm

Course Pages:

- https://www.projectrhea.org/rhea/index.php/2016_Summer_ECE_301_Shenk

Office Hours: TBD

Main References:

- Alan V. Oppenheim, Alan S. Willsky, S. Hamid Nawab, *Signals and Systems, 2e*, Prentice Hall, 1997.
- Hwei Hsu, *Schaum's Outline of Signals and Systems, 3e*, McGraw Hill, 2013.

Oppenheim's text (OW) will be the main text for this course. Hsu's text has many helpful problem (many with full solutions).

Objectives: A student who successfully fulfills the course requirements will have demonstrated:

- an ability to classify signals (e.g. periodic, even) and systems (e.g. causal, linear) and an understanding of the difference between discrete and continuous time signals and systems.
- an ability to determine the impulse response of a differential or difference equation.
- an ability to determine the response of linear systems to any input signal by convolution in the time domain.
- an understanding of the definitions and basic properties (e.g. time-shift, modulation, Parseval's Theorem) of Fourier series, Fourier transforms, bilateral Laplace transforms, Z transforms, and discrete time Fourier transforms and an ability to compute the transforms and inverse transforms of basic examples using methods such as partial fraction expansions.
- an ability to determine the response of linear systems to any input signal by transformation to the frequency domain, multiplication, and inverse transformation to the time domain.
- an ability to apply the Sampling theorem, reconstruction, aliasing, and Nyquist's theorem to represent continuous-time signals in discrete time so that they can be processed by digital computers.

Prerequisites: (ECE 20200, Minimum Grade of C or BME 30500) and (MA 26200 or MA 36600 or MA 26600).

Grading Policy: Homework (20%), quizzes (10%), Midterm exams ($40\% = 2 \times 20\%$), Final (30%). The scores of your lowest homework and quiz will be dropped.

Academic Honesty:

The ECE faculty expect every member of the Purdue community to practice honorable and ethical behavior both inside and outside the classroom. Any actions that might unfairly improve a student's score on homework, quizzes, or examinations will be considered cheating and will not be tolerated. Examples of cheating include (but are not limited to):

- Sharing / passing any information during an examination.
- Looking around unnecessarily during an exam. The instructor and the TA may ask the student to concentrate on the exam booklet during the exam.
- Using forbidden material or devices to an examination. (Calculators and help sheets are always prohibited during the exam, unless further notice.)
- Using cellular phones, i-Pods, and other electronics during an examination.
- Collaboration for homework questions is encouraged, but the students MUST hand write / type their own homework separately.
- Working on an exam before or after the official time allowed.
- Requesting a re-grade of answers or work that has been altered.

At the instructor's discretion, cheating on an assignment or examination will result in a reduced score, a zero score, or a failing grade for the course. All occurrences of academic dishonesty will be reported to the Assistant Dean of Students and copied to the ECE Associate Head for Education. If there is any question as to whether a given action might be construed as cheating, please see the instructor or the teaching assistant before you engage in any such action.

Lack of knowledge of the academic honesty policy is not a reasonable explanation for a violation.