

ECE 301: Signals and Systems (Section 002, Prof. Zhu)

CRN 17727, Fall 2019

Time and Room: TR 4:30-5:45pm, ME 2061

Instructor: Fengqing Maggie Zhu *Office:* MSEE334 *Email:* zhu0@ecn.purdue.edu

Office hours: T 1:30pm-3:00pm, R 2:00pm-3:30pm; or email Prof. Zhu for appointments.

Teaching Assistants:

Raktim Pal: pal13 AT purdue.edu

TA office hours: Mon. 2pm – 4pm, EE 208 Table 2

Wed. 12:30am – 2:30pm, Fri. 2pm – 4pm, EE 208 Table 1

Course Materials:

- Required Textbook: *Signals and Systems, 2nd Edition, Oppenheim, Willsky, & Young, Prentice-Hall, 1996, ISBN No. 9780138147570.*

Exams: There will be three one-hour midterms and one (longer) final exam. The time and location for the midterms are as follows:

	Date	Time	Locations
Exam 1	Thu, Sep. 19	6:30-7:30pm	WTHR 104
Exam 2	Tue, Oct. 15	6:30-7:30pm	RAWL 1086
Exam 3	Thu, Nov. 14	6:30-7:30pm	RAWL 1086

Three review sessions have been scheduled to help you prepare for the midterms:

	Date	Time	Location
Review 1	Tue, Sep. 17	7:00pm – 8:00pm	MSEE B012
Review 2	Mon, Oct. 14	7:00pm – 8:00pm	MSEE B012
Review 3	Tue, Nov 12	7:00pm – 8:00pm	MSEE B012

- Please schedule your planned trips and interviews so that they do not conflict with these midterm dates. ***You will not be allowed to make up the exam if you missed it.*** A minimum of one-week notice to the instructor is required if you must miss an exam, in which case an oral exam may be given instead.
- All exams will be ***closed book***. ***No calculators*** will be allowed
- If you have three exams in one calendar day during Final Exams Week, you are allowed to reschedule one of them. You should discuss the rescheduling of the Final Exam with Prof. Zhu ***at least 2 weeks in advance.***
- **Re-grading policy:** All requests for re-grading must be submitted in writing within one week from the date the exam is returned. If you desire a re-grading on an exam, please attach a note to your paper stating which problems and discrepancies you found and submit the paper to the instructor. Be sure to look at the solutions before asking for a re-grading.

Grading: Your final class grade will be determined based on your homework and exams,

Homework – 10%;

In-Class Quiz – 5%;

After adjustment, lowest midterm score will be dropped; the other two midterm scores will count for 25% each;

Final – 35%

Your course letter grade will be determined based on your standing in comparison with the distribution for your individual section this semester.

Homework: Assigned weekly. *All homework will count towards your final grade.*

- Assignments are due on **Thursday at 4pm**, please drop them off in a labeled box at **MSEE330**. No late assignments will be accepted for any reason.
- Assignments will be posted via Blackboard Learn *one week* before their due date.
- Rules for preparing your solutions:
 1. **ONLY write your assigned class ID, NOT your name on the first page of your solutions.**
 2. Do not use paper torn out of a spiral bound notebook.
 3. Write on only one side of each page
 4. Put the problems in the proper order.
 5. Staple the pages together before turning in the assignments, **otherwise you will receive 0.**
- Solutions to the homework assignments will also be posted on Blackboard after the submission deadline.
- Homework is a very important part of the course. You may read your lecture notes and the text, and think that you understand the material. However, when you attempt to work the homework problems, you will frequently find that you did not understand the material as well as you thought you did.
- You may discuss the homework with other classmates and use the help from the TA. However, you are expected to independently write your own solution. Further, you are strongly advised to solve independently as much of the homework as you possibly can. This will serve you well on the exam.

Course web page:

All course related materials will be available on Blackboard Learn at the address below. After you log in, make sure you click ***Fall-2019-ECE-30100-002.***

[**https://mycourses.purdue.edu/**](https://mycourses.purdue.edu/)

If you are having technical problems downloading these materials, please email Prof. Zhu or the TA.

Students with documented disabilities:

Students with disabilities must be registered with Adaptive Programs in the Office of the Dean of Students before classroom accommodations can be provided. If you are eligible for academic accommodations because you have a documented disability that will impact your work in this class, please schedule an appointment with Prof. Zhu as soon as possible to discuss your needs.

Academic Dishonesty

The ECE faculty expects 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 and examinations will be considered cheating and will not be tolerated. Examples of cheating include (but are not limited to):

- Sharing results or other information during an exam.
- Using a smart phone or any other communication devices during an exam.
- Bringing forbidden materials or devices to an exam.
- Working on an exam before or after the official time period of the exam.
- Sitting in an unassigned seat without the instructor's approval
- Requesting a re-grade of answers or work that has been altered.
- Representing as your own work anything that is the result of the work of someone else.

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

Learning Objectives:

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

- i. 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.
- ii. an ability to determine the impulse response of a differential or difference equation.
- iii. an ability to determine the response of linear systems to any input signal by convolution in the time domain.
- iv. 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.
- v. 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.
- vi. 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.

You will have multiple opportunities to satisfy these ABET outcomes. The primary means will be through homework, midterms and final exam. The professor will write questions for each exam based on these Course Outcomes. You will satisfy each Course Outcome when your score for the test question(s) equals or exceeds a value we specify as representing a minimal competency. If you fail to meet this level of minimal competency on a specific Course Outcome, you will have a second chance, typically on later exams that cover overlapping materials.

For up-to-date information about the course, check out the Announcements at the Blackboard Learn course webpage. After you log in, make sure you click ***Fall-2019-ECE-30100-002***.

<https://mycourses.purdue.edu/>

In the event of a major campus emergency, course requirements, deadlines and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances. In such an event, information will be provided through Blackboard Learn.