**Prerequisites**

ECE 301, ECE 302

**Instructor**

Prof. David Love  
MSEE 360  
765 496-6797  
djlove @ ecn.purdue.edu

**Lab TA**

Hongyi Zhu  
zhu344@purdue.edu

**Course Web Site**

http://www.ece.purdue.edu/~djlove/ECE440  
https://engineering.purdue.edu/ECEIL/ECE44000/

**Lecture Schedule**

MWF 8:30-9:20 am in EE 115

**Help/Office Sessions**

M 2:00-4:00PM (Office Hours)  
W 2:00-3:00PM (Office Hours)  
TBD (Problem Session)  
Note: Office hours may be changed depending on other scheduling conflicts.

**Required Text**


**Additional Reference Info**


**Laboratory**

The laboratory is EE Building Room 165. You must do the labs during your assigned period each week. Because you receive one hour of lab credit, you will fail the course unless you attend lab and attempt to perform the experiments. All the documents for the lab are on the web (see the TA for the site). There is lab the first week of classes. The pre-lab write-up for the first lab is due at the beginning of lab during the second week of classes. Lab info is at: https://engineering.purdue.edu/ECEIL/ECE44000/
Homework

There will be roughly weekly homework that will be collected, graded, and returned to you along with a copy of the solutions. Not all problems will necessarily be graded. Homework is due at the beginning of class on the date indicated so that solutions can be handed out in class. For your own benefit, please attempt the problems before consulting your friends, TAs, or myself. In any case, the final write-up of the homework must be your own.

Exams

There will be two in-class one-hour exams and a final exam. All exams will be closed book, no crib sheet, and no calculator. However, some tables or formulas may be provided. The dates for these exams cannot be changed once they are fixed. Please schedule your plant trips and interviews so that they do not conflict with these dates. No exams can be taken early. If you must miss an exam for any reason, your final exam will be substituted.

The exam topics will cover through the lecture one week before the exam date (i.e., topics discussed on or before the Friday before the exam). Each exam will typically contain four problems. The exam may cover material from previous exams (e.g., Test 2 might have a little Test 1 material). The material that the exam tests for will be discussed before the exam.

If you have a disability or other needs, please see the Disability Resource Center (DRC) for possible accommodations. The web location is http://www.purdue.edu/odos/drc/.

Regrades

Regrade requests on any graded exercise must be submitted in writing within one week of the date when the material was returned to you. After this time, no further change in grade will be considered. When you return your paper for a regrade, please attach a dated sheet to the front, indicating where you think that your paper was graded incorrectly.

Grades

(1) The grade for one exam where you do not show up will be replaced with the final exam. (2) If you miss more than one exam, the grades for the second missed exam will be replaced by an oral exam or another written exam at the discretion of the instructor. (3) The final exam will be cumulative. (4) The lowest homework grade is dropped. (5) The final grade is computed as:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laboratory</td>
<td>25%</td>
</tr>
<tr>
<td>Homework</td>
<td>5%</td>
</tr>
<tr>
<td>2 Hour Exams (20% Each)</td>
<td>40%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>30%</td>
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</tbody>
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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. You can obtain information about changes in the course by contacting me by email. I will also send out information using the class email list. Students are encouraged to stay home if having any A/H1N1 symptoms.

The laboratory for this course is extremely important. Students that fail to complete multiple labs usually fail the course. The TA will outline policies for attendance and completion of lab course work.

**Cheating**

Purdue University takes cheating VERY seriously. Any actions that might unfairly improve a student’s score on homeworks, quizzes, exams, or labs will be considered cheating and will not be tolerated. Examples of cheating include (but are not limited to):

Homework: The only requirement is that whatever you turn in is something that you wrote up (by hand or by computer) yourself. Working in groups is fine. Most of the problems are exam type problems. This means that:

1. Solutions are probably available. Even if they are not, the problems can be discussed in detail in the problem session or office hours.
2. If you can not work these problems by yourself, you will find the exam extremely hard. It is better to challenge yourself on homeworks than on the exams.

Exams: The list of things not to do includes, but is not limited to:

1. Share results or other information during an exam.
2. Bring forbidden notes, computers, calculators, or other devices.
3. Work on exam before or after official time.
4. Request regrade for work that has been altered.

Lab: You must:

1. Show up to lab.
2. Do the experiments.
3. Write up the lab yourself in consultation, if desired, with your lab partner.
4. The write up must reflect data you measured.

For the lab quizzes and lab practical the “exam” rules apply. If you have questions please ask.

At the instructor’s discretion, cheating on an assignment or exam will result in a reduced score, a zero score, or a failing course grade. 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 instructor or TA before you engage in this action.
**Tips on Failing**

If your goal is to fail, I recommend doing one or more of the following:

1) Skip classes and labs.
2) Fail the lab component of the course.
3) Miss one or more exams.
4) Do not turn in homework.
5) Cheat.

**Course Outcomes**

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

i. an ability to recognize and analyze in the time and frequency domain the performance of amplitude and frequency modulated analog communications systems in the presence of noise.
ii. an ability to understand the importance, computation, and measurement using modern test equipment of standard performance measures of analog systems, which include bandwidth and signal to noise ratio.
iii. an ability to recognize and analyze in the time and frequency domains the performance of various digital modulation formats, including ASK, QAM, PSK, and FSK in the presence of noise.
iv. an ability to understand the importance, computation, and measurement using modern test equipment of standard performance measures of digital systems which include bandwidth and hit error probability.
v. an understanding of the basics of information theory and error control codes including the effect of error control codes on the bandwidth and bit error probability of digital systems.