

PURDUE UNIVERSITY  
School of Electrical Engineering  
**EE 438 Digital Signal Processing with Applications**  
Class Information  
Fall 2000

**Prerequisites:** EE 301 and EE 302

**Instructor:** Professor Ilya Pollak  
MSEE 334  
494-5916  
[ipollak@ecn](mailto:ipollak@ecn.purdue.edu)  
Weekly help session (in lieu of office hours): Th 6PM – 8PM, room TBA.

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| <b>TA's:</b> | Jordan Kisner<br>EE 109<br>494-3383<br><a href="mailto:kisner@ecn.purdue.edu">kisner@ecn</a> | Brad Breinholt<br>MSEE 022B<br>494-9621<br><a href="mailto:breinhol@ecn.purdue.edu">breinhol@ecn</a> | Jared Brosch<br>EE 109<br>494-3383<br><a href="mailto:brosch@ecn.purdue.edu">brosch@ecn</a> | TBA |
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TA's office hours TBA.

**Course Web Site:** <http://www.ece.purdue.edu/~ipollak/ee438/ee438.html>

**Lab Web Site:** <http://www.purdue.edu/vise/ee438L>

**Recommended Text:**

*Digital Signal Processing*, 3rd edition, John G. Proakis and Dimitris G. Manolakis, Prentice-Hall, Inc., Englewood Cliffs, New Jersey, ISBN 0-13-373762-4, 1996.

**Lecture:**

It is essential that you attend the lecture and take complete and accurate notes. While this is generally a good idea with any course, it is particularly important in this course, because the text does not contain all of the material that we will cover. We will not necessarily do everything the same way that it is done in the text. On questions of terminology, definitions, and notation, your lecture notes should be relied upon, not the text.

**Homework:**

Homework will be assigned on a weekly basis. Assignments will be due on Friday at 5:00PM. They will be distributed on the preceding Friday (except for Homework 1, which is distributed on Monday, August 21 and is due on Friday, August 25). The assignments will be graded and returned to you with solutions on the following Friday. Note that there *will* be a (short) homework assignment due on the week that an exam is given. No late assignments will be accepted for any reason.

The 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 actually did not understand the material as well as you thought you did. Also, the problems on the exams will be very similar to the

homework problems. Needless to say, your understanding of the material will not be improved if you simply copy your solutions from a friend. You will benefit most from the homework if you attempt to do the problems *before* consulting your friends. While it is perfectly reasonable to discuss your approach to solving the problems with a friend, the final write-up of the solution should be your own work.

**Rules for Preparing your Solutions:**

The grader will have to handle a lot of paperwork for the course, and wade through many pages of handwritten solutions. It will be to your benefit in terms of maximizing your grade, and will be greatly appreciated by us if you adhere to the following four rules when preparing your assignments:

- 1) Do not use paper torn out of a spiral bound notebook.
- 2) Write on only one side of each page.
- 3) Put the problems in the proper order.
- 4) Staple the pages together before turning in the assignment.

**MATLAB:**

Knowledge of the MATLAB software environment will be a required part of this course. MATLAB is an integral part of the laboratory and will be required for solving many weekly homework assignments. If you are not familiar with MATLAB, you are strongly encouraged to attend one of the MATLAB tutorials offered by ECN at the beginning of the semester.

If you choose to work with others on MATLAB homework assignments, you must list all collaborators' names at the top of the assignments. Remember that you will be responsible for knowing MATLAB in exams, so you are encouraged to work as independently as possible.

**Laboratory:**

The laboratory is in Room MSEE 184, the Video and Image Systems Engineering (VISE) Lab. You will be assigned to a 3 hour lab session which you must attend each week during the entire semester. You must attend and attempt the labs to pass the course since you do get an hour of lab credit. All laboratory material is available at the web site listed at the top of this handout. You are responsible for printing out and reviewing the labs in advance of your laboratory session. Each lab session will begin with a quiz covering the basic concepts underlying that week's experiment or related lecture material. *All lab sections will meet during the first week of class.*

You will also be able to use the laboratory to work on EE438 homework or laboratory experiments during periods when it is not scheduled for use. Please observe the rules for laboratory use posted at the lab web site.

**Examinations:**

There will be three one-hour exams, which will be given during the normal class period. The dates for these exams are fixed and cannot be changed. 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, you should discuss it with the instructor as far as possible in advance of the date of the exam. *At the instructor's discretion*, you may be allowed to make up the exam, or you may be required to let your final exam count for the missing portion of your grade. The instructor's decision will be based on the merits of your case. Only under extenuating circumstances will you be permitted to make up an exam if you have not notified the instructor in

advance that you will miss it. All examinations will be closed book. One standard (8.5-by-11 inches) sheet of *handwritten* (i.e., not printed, typed, photocopied, *etc.*) notes will be allowed for each one-hour exam. You may write on both sides of the sheet. You may bring three sheets of notes to the final. Each exam will typically contain 3 to 4 problems that are similar to homework problems.

### Help Session:

We will be holding a weekly help session. During the weeks during which an exam will be given, the help session will serve as a review for the exam. You will benefit from attending this help session, not only because you can get answers to your questions; but also because you can learn what questions your classmates have, and what the answers are for those questions, as well. You will benefit much more from the help session if you try to work the problems in advance, and come prepared with questions. The instructor will only answer the students' questions. The help session will not consist of a review "lecture".

### Computation of Final Grade:

Your final grade will be determined as a weighted combination of the homework, laboratory, hour exams, and final exam. If your lowest hour exam grade is less than your final exam grade, then the grade for that exam will be replaced by your final exam grade. Your letter grade will be based solely on your weighted final grade. This means that failure to do the homework or laboratory assignments can definitely hurt your grade, regardless of how well you do on the exams.

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|------------------------|-----|
| Laboratory             | 25% |
| Homework               | 15% |
| 3 Hour Exams (13% ea.) | 39% |
| Final exam             | 21% |

If you dispute your grade on any homework or hour exam, you have *one week* from the date that the graded paper was returned to you to request a change in the grade. After this time, no further change in grade will be considered. When you return your paper for a re-grade, please attach a sheet to the front, indicating where you think that your paper was graded incorrectly. Also, date the sheet.

### Academic Dishonesty<sup>1</sup>

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 results or other information during an examination.
- Bringing forbidden material or devices to an examination.
- Working on an exam before or after the official time allowed.
- Requesting a re-grade of answers or work that has been altered.
- Submitting homework that is not your own work or engaging in forbidden homework collaborations.

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<sup>1</sup> Policy statement is due to Professor Edwin Chong.

- 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 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 Assistant Head for Education. If there is any question as to whether a given action might be construed as cheating, please see the professor or the TA before you engage in any such action.

**Web Site:**

Copies of all class handouts including this one will be available at the EE 438 web site <http://www.ece.purdue.edu/~ipollak/ee438>.