

**Purdue University**  
**ECE438: Digital Signal Processing with Applications**  
**Fall 2013**

**Instructor: Prof. Mireille (Mimi) Boutin**

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**Office hours:**

See the course wiki: [https://www.projectrhea.org/rhea/index.php/2013\\_Fall\\_ECE\\_438\\_Boutin](https://www.projectrhea.org/rhea/index.php/2013_Fall_ECE_438_Boutin)

**(Supplementary) Reference:**

“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.

**Prerequisites:**

ECE301, ECE302, and a working knowledge of MATLAB.

**Course Related Webpages:**

- Course Wiki: [https://www.projectrhea.org/rhea/index.php/2013\\_Fall\\_ECE\\_438\\_Boutin](https://www.projectrhea.org/rhea/index.php/2013_Fall_ECE_438_Boutin)
- VISE Lab Web Site: <https://engineering.purdue.edu/VISE/>

**Grades:**

- Your final grade will be computed as follows:
  - Homework 10%. (No late HW accepted but worst score dropped.)
  - Laboratory 20%.
  - 2 Midterm Exams 20% each. (No make up; use final exam grade to replace when absent.)
  - Final 30%.
- Grades will be uploaded on Blackboard.
- For a re-grade on any homework, quiz, or exam, you must submit a written request to the instructor.
- The letter grades cut off for the course will be set by the instructor in a way that represents the extent to which the course outcomes have been achieved by the class at the end of the course. In particular, all students who, at the end of the semester, do not meet the lowest threshold of competence for every course outcome will be assigned a failing grade (F). Conversely, all students who meet the highest threshold for every outcome will be assigned an A grade.
- Plus/minus grades will not be assigned.

**Attendance Policy:**

Students are expected to attend **every lecture** and **every lab**. However, it is recognized that, **very occasionally**, it may be necessary for a student to be absent from class for personal reasons beyond his/her control (e.g., illness, family emergency, bereavement, etc.). We trust students to use their best judgement in such circumstances and thus require no documentation or justification for missing class. Students who miss class are responsible for making up the material on their own by reading the references listed in the course schedule: neither the instructor nor the TAs will be available to help students who missed class make up the material they missed.

**Laboratory:**

The laboratory for this course is the Video and Image Systems Engineering (VISE) lab, in MSEE184. Each student is registered for a mandatory weekly 3 hour lab session. In order to get

a passing grade for this course, you must complete and hand in the lab every week. See the lab syllabus for more details.

### **Homework:**

Homework will be assigned more or less every week. A hard copy of the homework will be collected in class. No late homework will be accepted. However, in order not to penalize students who, for a valid reason, either had to miss class or found themselves unable to finish the homework (e.g. broken arm), each student's lowest homework grade will be dropped.

It is ok to discuss your approach to solving the problems with a friend or on Rhea, but the write-up of the solutions you hand in must be your own. Be careful not to plagiarize! **Cite all your sources** and write the name of the persons you collaborated with on the cover page of your homework. Do not look at answers from the Internet or from the graded copy of a student from a previous year: doing so would constitute plagiarism. Plagiarism will be punished with a failing grade (F) for the course, and reports to the Assistant Dean of Students and to the ECE Assistant Head for Education will be filed. The office of the dean of students may decide that further punishment is necessary.

### **Intra-semester Tests (in class)**

Test 1 Covers Part 1 of the material, in class, Friday October 4, 2013.

Test 2 Covers Part 2 of the material, in class, Monday November 25, 2013.

- There will be no make up exams. If you miss an exam for any reason, your final exam grade will automatically be used to replace this exam grade. There is no need to contact your instructor or to justify your absence.
- Scratch paper will be included with each exam; the work on your scratch paper will not be graded.

### **Final Exam:**

The final exam will be a comprehensive, traditional style (not multiple choice) exams.

### **Classroom Rules**

- Cell phones and other communication devices must be **turned off** during class.
- Please respect your instructor and your fellow classmates. Students who act in a disruptive/disrespectful manner (e.g. arriving late, texting, sending email, surfing the web, talking, etc.) will be asked to leave the classroom.

### **Policy about sharing course material**

- All course material is copyrighted. Reproduction or storage in a retrieval system (e.g. the Internet) is prohibited without an explicit agreement with the author of the work. This includes course notes (including your own), homework questions, and exams.
- Taking pictures or making audio/video recording of the lectures is prohibited without the instructor's prior approval.

### **Academic Honesty:**

- In order to prevent cheating, we ask that you keep your eyes on your exam at all times during tests. Looking around is forbidden.
- All electronic devices (except watch without wireless connection capability) are strictly forbidden. This includes calculators, cell phones, PDAs, music players, cameras, and smart phones.
- Working on an exam either before or after the official time is considered cheating. The exams/quiz of any student who is caught writing after time is up or before the exam begins will receive a grade of zero, and this will be reported to the Assistant Dean of Students, as well as the ECE Assistant Head for

Education. The office of the dean of students may choose to apply further punishment.

- We keep an electronic copy of all graded exams in order to compare them with any exam brought in for a grade revision. Any student who alters his/her exam post grading and asks for a grade revision will be caught and will suffer severe disciplinary actions, including a failing grade (F) for the course.
- Be careful not to plagiarize on Rhea. In particular, do not cut and paste the material from other websites without citation, and if you do cite, do not copy more than a small portion of the text.

**ABET:**

The learning objectives for ECE438 are:

- An understanding of linear time invariant systems
- The ability to manipulate discrete parameter signals
- Knowledge of how to use linear transforms
- The ability to apply linear system analysis to engineering problems