EE434 Course Policies


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Time & Location: Section 3311: MWF-3, Th-3&4    Rickover 061


Office Hours: TBD. My schedule is normally packed, so if you need EI, it is generally a good idea to call/email a minimum of 24 hours in advance.

Course Description: An continued in-depth study of wireless and cellular systems. This study includes system design, mobile radio propagation (large-scale path loss, small-scale fading, and multipath), and modulation techniques for mobile radio. Technical discussions of recent topics/publications related to the course material are also conducted. Laboratory experiments emphasize indoor and outdoor RF propagation measurements. A final project is required in lieu of a final examination.

Course Objectives:

1. Explain the basic features and parameters of an antenna; use basic analysis and design tools to design and evaluate antenna performance.
2. Design simple software-defined radio analog and digital communication receiver.
3. Apply knowledge of software-defined radio, analog and digital modulation, and signal intelligence to identify, intercept, demodulate, and recover signals of opportunity.
4. Understand the fundamentals of localization and direction finding; apply these techniques to locate a hidden transmitter.
5. Understand the fundamentals of jamming and spoofing attacks; apply these techniques to disrupt a simple communication system.

Absences: Students are responsible for all material covered in class, whether or not they are present. Students who are absent should make arrangements to obtain copies of the lecture notes from a classmate. Students will be expected to study the notes and the relevant sections of the textbook prior to requesting EI from the instructor. You must notify the instructor well in advance if you are going to be absent for any exam.

Announcements and Information: Students will be expected to access class resources via the Internet. A detailed course syllabus, assignments, homework solutions, grades, etc. will be posted on the main course website (www.usna.edu/EE/EE433) and on Blackboard.

Homework/Quizzes and Grading: EE434 is a project-based class, however, the instructor reserves the right to assign homework and quizzes if necessary. Homework will be assigned and due as specified on the Syllabus. Whether or not you attend class, you are responsible for turning in homework assignments on time. Late homework (defined as homework turned in after the end of the class period in which it is due) will not be accepted, except in the case of a valid excused absence (e.g., Precoms, SIQ, etc)! Students that know ahead of time that they will be missing a class period should contact the instructor as soon as possible prior to the homework due date.

Homework must be well organized, legible, self contained, and in the prescribed format. If I cannot read your solutions, understand them, identify the answer or answers you claim are right, and comprehend the meaning of your diagrams, then your solutions will not get full—or possibly any—credit. Include all measurement units where
appropriate. Use standard SI notation, such as 5 V or 30 μA. Homework will be graded and collected in class according to policies that will be promulgated by the instructor.

Computer Policy: There are no restrictions on the use students may make of computers in class except:

- The computers in the classroom and lab are for official use only! Do not change their setting or configuration without permission. Do not install a program on a class computer without permission.

- You may not use computers (including laptops) during class for any purpose not directly connected to the subject matter of the course, including (but not limited to) email, instant messaging, social networking, and gaming.

- You may not get assistance from anyone during quizzes, tests, or exams, so the use of communications program such as Internet Messenger or file-sharing software to do so is expressly forbidden.

Backup your work and do not assume that files stored on a lab computer's hard drive will not be erased or corrupted by others. Additionally, the hard drives within the computers may be reformatted about once per month.

Project Information: EE434 will use a slightly modified version of “Interview Grading” that was trialed in EE433. Further information and details will be promulgated at a later date.

Project Information: EE434 is a project-based class. These projects are designed to provide you with the opportunity to study one or more aspects of wireless communications in significantly greater detail than will be covered in either the class or the textbook.

Section Leader: The Section Leader will be appointed by the instructor and will be responsible for taking attendance for each class. At the start of the class, the Section Leader will call the section to attention and report by name the individuals that are absent. In the event that the instructor/professor is late for class in excess of 10 minutes, the Section Leader will contact the EE Dept. Office at x3-6150. Pending the arrival of someone to take charge of the class, the Section Leader will supervise the class in a study period, will collect any homework due for that period, and will deliver the homework to the EE Department Office at the end of the period if no instructor arrives. The section leader will also be responsible for providing a written report of attendance and keeping track of bonus points earned by midshipmen during the class period.

Honor Concept: The Honor Concept will be observed in this class. If there are any questions related to the Honor Concept and its applicability to any assigned work, please contact the instructor for clarification. Unless otherwise directed by the instructor, all graded work is expected to be the original work of the student or, in the case of authorized group assignments, the entire group. Giving or receiving unauthorized assistance on a graded assignment is a violation of the Honor Concept.
**Statement on Plagiarism:** The IEEE statement on plagiarism is: “IEEE defines plagiarism as the reuse of someone else’s prior ideas, processes, results, or words without explicitly acknowledging the original author and source. It is important for all IEEE authors to recognize that plagiarism in any form, at any level, is unacceptable and is considered a serious breach of professional conduct, with potentially severe ethical and legal consequences.” Plagiarism is a very serious offense and suspected incidents will be adjudicated via the honor system. Any use of someone else’s work (whether written, graphical, or verbal) requires the appropriate IEEE citation and/or permission.

**ECE Department Amplification on Plagiarism:** Plagiarism is the act of presenting someone else’s work or ideas as your own. Examples include (but are not limited to) copying homework from a colleague or from a solution manual, copying computer code, copying text or figures from the Internet, or using another’s data in a lab report. It is your responsibility to use proper documentation to always give credit where it is due.

You should include citations for all figures or ideas taken from other sources, including the Internet. Citations -- whether a single phrase, sentence, paraphrase, block of text, figure, image, or anything else that is not wholly and originally yours -- should conform to the current IEEE Bibliography Style.

Plagiarism is a dishonorable act. It diminishes both the perpetrator and the institution. Err on the side of too much documentation, and if you have any questions ask your instructor.

**Statement on Grading:** The instructor/professor reserves the right to adjust your final grade based upon a subjective evaluation of your overall course preparation and participation.

### Mid-Semester Grade Weightings

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<th>6 Week Grade</th>
<th>12-Week Grade</th>
<th>16-Week Grade</th>
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<tbody>
<tr>
<td>Yagi Project</td>
<td>60%</td>
<td>30%</td>
<td>15%</td>
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<tr>
<td>GNU Radio FM</td>
<td>30%</td>
<td>20%</td>
<td>14%</td>
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<tr>
<td>Class Participation</td>
<td>10%</td>
<td>20%</td>
<td>14%</td>
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<tr>
<td></td>
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<td>10%</td>
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</tbody>
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### Final Grade Weightings

|                                | 13%          | 10%          | 10%          | 13%          | 19%          | 10%          | 10%          |
|                                | Yagi Project | GNU Radio FM | GNU Radio AIS| Keyless Entry| Downed Pilot Localization| Nerf Cannon | Class Participation |

- *Project* 24%
  - *Project Written Report* 10%
  - *Project Presentation* 14%