

## EE354 Course Policies

### EE 354 – Modern Communication Systems – Spring 2012

**Instructor:** Dr. Christopher R. Anderson 318 Maury Hall [canderso@usna.edu](mailto:canderso@usna.edu) 293-6185  
CDR Patrick Vincent 336 Maury Hall [vincent@usna.edu](mailto:vincent@usna.edu) 293-6163

**Time & Location:** Section 3311: MWF-3, Tu-3&4 Rickover 061  
Section 3511: MWF-3, Tu-5&6 Rickover 061  
Section 5311: MWF-5, Tu-3&4 Rickover 061  
Section 5511: MWF-5, Tu-5&6 Rickover 061

**Textbook:** *Modern Digital and Analog Communication Systems*, 4<sup>th</sup> Ed. by Lathi and Ding

**Other Resources:** [The Craft of Scientific Writing](#) by Michael Alley  
[The Elements of Style](#) by Strunk and White

**Office Hours:** TBD. The instructor's schedules can be unpredictable, and they generally recommend calling or emailing in advance to schedule an appointment.

**Twitter:** Dr. Anderson monitors and responds to Twitter messages directed to **@USNA\_EEComms**. Please use the hash tag **#EE354**.

**Course Objectives:** The basic course objective is to understand the fundamental principles which underpin the analysis and design of communication systems. Specifically, having successfully completed this course, the student will be able to:

- Compute the Fourier transform and the energy/power spectral density of communications signals.
- Calculate the bandwidth and signal-to-noise ratio of a signal at the output of a linear time-invariant system given the signal and the power spectral density of the noise at the input of the system.
- Explain the operation of amplitude and angle modulation systems in both the time and frequency domains including plotting the magnitude spectra and computing the power and bandwidth requirements of each type of signal.
- Analyze a given analog or digital communications system in terms of the complexity of the required transmitters and receivers and the power and bandwidth requirements of the system.
- Design a basic analog or digital communications system.

**Software:** MATLAB will be used extensively in this course. You should expect to become a Matlab guru by the end of the semester.

**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/EE354](http://www.usna.edu/EE/EE354)) and on Blackboard.

**Assignments and Grading:** Homework, labs, etc. are assigned and due as specified on the Syllabus. Assignments and due dates may be modified at the instructor's discretion—always check the course website for the most up-to-date information. Whether or not you attend class, you are responsible for turning in assignments on time. Late work will not be accepted and will receive a grade of 0! 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 assignment due date. **The instructor/professor reserves the right to adjust your final grade based upon a subjective evaluation of your overall course preparation and participation.**

**Homework:** Completion of homework is a Military Obligation in this course, and your instructor has significant leeway to adjust your grade should you fail to submit all homework. Homework sets will be collected and graded at the instructor's discretion. Hard copies of homework solutions will be posted on the bulletin board in Rickover 061 in advance of the due date, and archival solutions will generally be posted online the day that homework sets are due. Please note: removal of the hard copies of homework solutions is an honor offense and suspected violators will be forwarded to the honor system without warning or comment.

**Quizzes:** Count on a quiz approximately every week, or at the instructor's discretion. They will usually (but not always) be announced in advance.

**Labs:** Labs are scheduled for most of the lab periods. These labs may comprise theory, simulation and/or hardware. One or more of the labs will require formal lab reports—you will be told which labs in advance. An example of the format is provided on the website. The instructor is always available to proofread and provide feedback on draft versions of the report prior to the due date. Failure to follow the prescribed format will result in a grade of 0 for the lab.

**In-Class Behavior:** Do not disrupt the class while it is in session! Examples of unacceptable disruptions include, but are not limited to: unauthorized cell phone or computer use, communicating with other students, entering or leaving the classroom except when absolutely necessary (getting a drink does not constitute an absolute necessity). Offenders may be counseled, have distracting items confiscated, or be dismissed from class.

**Project Information:** A class design project will be done by teams of 2-3 people and will require a formal report and operational demonstration.

**Calculators:** New policy! Our department is in the process of changing its policy on how calculators will be allowed. On quizzes and exams, if you choose to use a calculator (calculators are always optional), you must use one of the calculators approved for use on the Fundamentals of Engineering Exam (FE). These are listed at: [http://www.ncees.org/Exams/Exam-day\\_policies/Calculator\\_policy.php](http://www.ncees.org/Exams/Exam-day_policies/Calculator_policy.php). These run in price as low as \$15. Whatever you choose to use on the quizzes/exams, I suggest you also use for your homework/labs so that you get the required familiarization.

**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. During class the Section Leader will update the attendance book to account for any tardy students or any students that may leave early. The class will be called to attention by the Section Leader for dismissal at the end of the period. 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.

**Tips:**

1. Find another student or students to help you (or to help them) when you (they) have trouble with homework problems. Do that from the start!
2. Read the corresponding section in the book before lecture.
3. When you do not fully understand a topic in lecture or in the homework come to office hours as soon as possible. Topics build on each other, so you want to be sure not to fall behind – the longer you wait, the tougher it will be to catch up.
4. Do additional problems, beyond the homework.

"Now it is not difficult to see that one must not make amusement the object of the education of the young; for amusement does not go with learning--learning is a painful process." (Aristotle, Politics, VIII.4:4. 1339a 26)

**Mid-Semester Grade Weightings**

<b>6 Week Grade</b>		<b>12-Week Grade</b>		<b>16-Week Grade</b>	
Fourier Quiz	15%	Fourier Quiz	10%	Fourier Quiz	6%
Exam 1	30%	Exam 1	18%	Highest Two Exams (ea).	16%
Labs	30%	Exam 2	18%	Exam 3	8%
Formal Lab Report	15%	Labs	24%	Labs	22%
Instructor	10%	Formal Lab Reports	15%	Project	10%
		Instructor	15%	Formal Lab Reports	16%
				Instructor	6%

**Final Grade Weightings**

Fourier Pre-requisite Quiz	3%
Highest Two Exam Scores (ea.)	14%
Exam 3	7%
Final Practicum	15%
Formal Lab Reports (2 of 3)	14%
Labs	20%
Course Project	8%
Instructor Discretion	5%