

**Department of Electrical and Computer Engineering
University of Massachusetts Amherst**

**ECE 303: Junior Seminar
Spring 2009**

Description: Overview of the electrical and computer engineering field, including introduction to various sub-disciplines and the corresponding upper-level ECE courses. Prerequisite: grade of C or better in E&C-ENG 211, 212, 232 and 242. (1 credit)

Objective: To increase awareness of important aspects of the electrical and computer engineering profession through discussions of the roles and responsibilities of electrical and computer engineers in society, overviews of technical sub-disciplines, and an introduction to the process for conducting engineering projects.

Web Site: <https://spark.oit.umass.edu>

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| Instructors: | Christopher V. Hollot | Patrick A. Kelly |
| | 215 C Marcus Hall hollot@ecs.umass.edu phone: 545-1586 | 215B Marcus Hall kelly@ecs.umass.edu phone: 545-3637 |

Office Hours: Open door policy or by appointment.

Tentative Seminar Schedule

- January 26 Course Overview Profs. Christopher Hollot and Patrick Kelly
- Planning Your Future: What You Need to Know to Get From Here to There Ms. Cheryl Brooks

Part 1 – Societal Roles and Responsibilities of Electrical and Computer Engineers

- February 2 Professional Ethics Prof. Tilman Wolf
- February 9 Envisioning Technology vs. the Social Use of Technology Prof. Jarice Hanson
- February 23 Innovation and Entrepreneurship Prof. James Theroux
- March 2 Engineering Management Dean Michael Malone
- March 9 Graduate and Continuing Education Prof. Dennis Goeckel

Part 2 – Technical Overview of Electrical and Computer Engineering

- March 23 Communications, Signal Processing and Systems Profs. Christopher Hollot and Patrick Kelly
- March 30 Computer Systems Engineering TBD
- April 6 Microwaves and Electronics TBD

Part 3 – The Engineering Project Process

- April 13 Engineering Projects: Introduction and Examples Prof. Baird Soules
- April 21 Design Project Example: Wireless Drumsticks Prof. Baird Soules
- April 27 Review of Submitted Problem Statements Profs. Christopher Hollot and Patrick Kelly
- May 4 Project Management Prof. Tilman Wolf
- May 11 Career Paths – Alumni Examples Prof. Baird Soules/TBD

Course Requirements

- **Attendance:** Attendance at all seminars is a course requirement. Unexcused absences will result in a grade penalty (see section on Grading below). You are expected to come to class on time and to stay for the full period.
- **Writing Assignments:** There are three writing assignments, all of which must be completed satisfactorily in order to pass the course (see section on Grading below):
 1. *Essay on Engineering Ethics* – This is a brief essay that will explore ethical issues in a case study of engineering practice.
 2. *Essay on Technology and Society* – This is a brief essay that will discuss issues related to the social, political, or cultural impact of a particular ECE-related technology.
 3. *Engineering Project Problem Statement and Requirements Specification* – This will be a brief document that defines and specifies the requirements for a prospective engineering project (suitable for an ECE Senior Design Project).

(Detailed descriptions of the written assignments will be posted on the course web site.)

- **Assignment Due Dates:**
 1. **March 2:** Engineering Ethics essay
 2. **March 9:** Brief (one paragraph) description of topic for Technology and Society essay
 3. **April 6:** Technology and Society essay
 4. **April 21:** Engineering Project Problem Statement (preliminary)
 5. **May 4:** Engineering Project Problem Statement and Requirements Specification

Grading

- In order to pass the course, **all** written assignments (including the one-paragraph Science and Technology essay topic description and the preliminary Engineering Project problem statement) must be completed satisfactorily – failure to complete any of the assignments in a satisfactory manner will result in a failing grade for the course.

- If all assignments are completed satisfactorily and there are **no** unexcused absences or late assignments, then the course grade will be “A.”
- If all assignments are completed satisfactorily but there are one or more unexcused absences and/or late assignments, the course grade will be as follows:
 - One unexcused absence or late assignment: Course grade = A-
 - Any combination of two unexcused absences and/or late assignments: Course grade = B
 - Any combination of three unexcused absences and/or late assignments: Course grade = C
 - Any combination of four unexcused absences and/or late assignments: Course grade = D
 - Any combination of five or more unexcused absences and/or late assignments: Course grade = F

Important Notes

- An attendance sheet will be circulated during each class – it is your responsibility to make sure that you sign the sheet before you leave at the end of class. Failure to sign the attendance sheet will be treated as an absence.
- You will not be penalized for legitimate absences, but in order to have them excused, it is your responsibility to contact one of the instructors in a timely manner and to produce any required documentation.
- Signing the attendance sheet for anyone other than yourself will be considered an act of academic dishonesty.
- All submitted assignments must be your own work. Any acts of plagiarism or other forms of academic dishonesty will result in a failing grade for the course and referral to the University Academic Honesty Office, which may impose additional sanctions.
- For definitions and University policies on academic honesty and absences please see the *Academic Regulations*, available at the web site of the Undergraduate Registrar <http://www.umass.edu/registrar/> .