

## ELEC 5760/6760 Solid State Sensors

### Course Syllabus

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**Prerequisites:** ELEC 5700 (Analog Electronics)

**Course Objectives:** (1) to understand the terminology, operation and performance of solid state sensors; (2) to understand how to select a sensor for an application; and (3) to be able to interface a sensor to the required instrumentation.

**Instructor:** Dr. Robert Dean (office: 222 Broun Hall, 844-1838, [deanron@auburn.edu](mailto:deanron@auburn.edu))

**Schedule:** Class: MWF (11:00am-11:50pm) BR 107, Office Hours: MW (2:00pm-3:00pm) and by appointment.

**Textbook (recommended):** Beeby, Ensell, Kraft and White, MEMS Mechanical Sensors, Artech House Inc., 2004.

**Class Website:** [www.eng.auburn.edu/~deanron/Sensors.html](http://www.eng.auburn.edu/~deanron/Sensors.html). Note: please check the class website prior to each class since some materials may be placed on the website that would be useful to bring to class. Some class lectures may make use of PowerPoint or other presentation tools. These files will usually be placed on the class website for downloading by the students.

**Special Needs:** Any student who needs special accommodations should make an appointment to discuss their needs as soon as possible. Accommodations for special needs will be made in accordance with the official policies of Auburn University.

### Grading Policy

Grades will be assigned on a 10% scale (90-100:A, 80-89:B, etc...) based on the point scale presented below

<u>Item</u>	<u>Points</u>	<u>Tentative Date</u>
Exam 1	100	Wed, Sep 29
Exam 2	100	Wed, Nov 17
HW/Quizzes	100	Various
Project	50	6760 only
Final Exam	200	Wed, Dec 8 (noon)

### Exams

Exams will cover material presented during class lectures, assignments performed as homework and reading assignments. Exams will be closed book and closed note. Calculators can be used on all exams. Laptop and notebook computers cannot be used on any exam. Although exams are worth 100 points toward the final grade, bonus questions *might* be given, such as derivations or proofs, for extra points. Missed exams can only be made up if the absence was due to a university excused absence (illness, job interview, conference travel, etc...). When possible, let the instructor know ahead of time if an exam will be missed due to an excused absence.

### Homework and Quizzes

Homework and unannounced quizzes will be given, occasionally, throughout the semester. The due dates for homework assignments will be given on the days that the assignments are given. Unannounced quizzes will be short, reflect recent lectures and/or

homework/reading assignments, and may be given on days of particularly low class attendance. The instructor reserves the right to give an unannounced quiz consisting of having the students in attendance sign their names on piece of paper and turn it in. Unannounced quizzes cannot be made up and late homework will not be accepted, unless due to an excused absence (illness, job interview, conference travel, etc...). Homework assignments must be submitted in a format that is organized, professional and legible (labeled axes, correct units, etc...)

### **Computer Resources**

Some Homework assignments may require the use of engineering software tools, such as PSPICE, MATLAB, and/or EXCEL. These tools are available on the College of Engineering Workstations (e.g., BR 123).

### **Class Attendance**

Class attendance will not affect grading except as previously stated under Exams and Homework and Quizzes. If a student knows that he or she will be absent for an excused absence, such as a job interview or to attend a conference, please let the instructor know ahead of time if possible.

### **Class Etiquette**

The instructor is here to teach and the students are here to learn. Therefore it is important to maintain a classroom atmosphere that fosters learning. Therefore:

- (1) do not use cell phones during class
- (2) do not read newspapers during class
- (3) arrive on time
- (4) do not leave early (except after completing an exam) unless you notify the instructor before class of a need to leave early that day
- (5) minimize disruptive behavior (such as non class related conversations)
- (6) come prepared to learn
- (7) laptop/notebook computers and/or audio recording devices can be used to take notes

### **Academic Honesty**

Students are expected to do their own work. Students may work together on homework assignments; however, each student must submit their own work for a homework assignment. Representation of someone else's work as their own will result in a zero on the assignment and possible further disciplinary action by Auburn University. Quizzes and Exams must be exclusively the work of the student submitting the work for grading.

### **Inclement Weather**

Auburn University may announce campus closings due to expected or occurring inclement weather, such as hurricanes or ice storms. These campus closings, as well as tornado warnings, are officially excused absences from class.

**Contingency Plan**

If normal class activities or computer lab availability are disrupted due to many students or the instructor experiencing illness or an emergency or crisis situation (such as a widespread H1N1 flu outbreak), the syllabus and other course plans and assignments may be modified to allow completion of the course. If this occurs, an addendum to your syllabus and/or course assignments will replace the original materials.