

Division of Electrical and Computer Engineering
EE 3220 Electronics II
Spring 2017

Course Number and Name

EE 3220 Electronics II

Credits and Contact Hours

3 credits; 3 hour lectures

Instructor's or Course Coordinator's Name

Martin Feldman

Textbook

Microelectronic Circuits and Devices, Mark N. Horenstein, Second Edition, Prentice Hall, 1996

Other supplemental materials

- Electronics Laboratory Manual, Dr. Martin Feldman, Prentice Hall 2002

Specific Course Information

Catalog description: Analysis and design of electronic circuits; emphasis on concepts and device models.

Prerequisites: EE 2130, EE 2230 and EE 2231.

Required or elective: Elective

Specific Goals for the course:

To provide the student with a thorough understanding of basic bipolar and FET transistor circuits, so that he or she can solve problems in this area as well as design more complex transistor circuits. The student is prepared for both advanced courses and industrial assignments in this field. In addition the student will apply theoretical ideas to practical circuits, and acquire verbal and written skills in technical communication. After completing this course students will be able to:

- Explain fundamentals in analog circuits
- Design one and two transistor amplifiers
- Design filters and oscillators
- Explain fundamentals in digital circuits
- Design TTL logic circuits
- Design CMOS logic circuits
- Understand complex circuit diagrams

Student Outcomes addressed by the course

Expected Student Outcomes	How to achieve Student Outcomes?
3a. an ability to apply knowledge of mathematics, science, and engineering	Students solved homework problems where such concepts are essential
3b. an ability to design and conduct experiments, as well as to analyze and interpret data	Students learn the techniques in lectures, and apply them in many of the homework problems
3d. an ability to function on multi-disciplinary teams	Students are encouraged to form study groups
3e. an ability to identify, formulate, and solve engineering problems	Students learn to solve engineering issues
3g. an ability to communicate effectively, including conveying technical material	Students prepare individual homework
3k. an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice	The course provides a basic understanding of circuit design and electronic instrumentation, so that students are prepared for advanced courses and applications

Brief list of Topics:

- Review of Electronics I (3 classes)
- Analog amplification (3 classes)
- Differential amplifiers (3 classes)
- Frequency response and time-dependent circuit behavior (4 classes)
- Feedback and stability (3 classes)
- Multistage and power amplifiers (3 classes)
- Analog integrated circuits (3 classes)
- Active filters and oscillators (2 classes)
- Digital circuits (5 classes)
- Fundamentals of digital systems (4 classes)
- Electronic design (4 classes)
- Review (3 classes)
- Tests (2 classes)

Estimated ABET Professional Component:

Engineering Science: 1 credit
 Engineering Design: 2 credits

Course Outcome Assessment/Grading Policy:

- Homework assignments 20%
- Tests (2 tests, 20% each) 40%
- Final Examination 40%
- *No make-up tests will be given.* However, if you miss the test for legitimate reasons, you will be given an oral make-up test.

- *The grades will be curved.* The sum of the homework grades, and the grades for the two tests and the final exam will be divided by their respective class averages, to form normalized grades. The final letter grade for each student will be based on the sum of these normalized grades.

Instructor:

Martin Feldman, Professor, ECE Department, Office hours (9:00 to 10:00 AM, Monday through Friday) or by appointment, 217 Electrical Engineering Building

The University is committed to making reasonable efforts to assist individuals with disabilities in their efforts to avail themselves of services and programs offered by the University. To this end, Louisiana State University will provide reasonable accommodations for persons with documented qualifying disabilities. If you have a disability and feel you need accommodations in this course, you must present a letter to me from Disability Services in 115 Johnston Hall, indicating the existence of a disability and the suggested accommodations.

Revised in Spring 2017