

Division of Electrical and Computer Engineering
EE 2231 Electronics Lab I
Fall 2017

Credits and contact hours

Unit 3 hours, Fall Semester 2017

Schedule: 9:00-9:50 T Lecture, all sections (201 Tureaud Hall)
 10:30-12:20 Th Section 1 (133 Electrical Engineering Building)
 1:00-2:50 T Section 2 (133 Electrical Engineering Building)

Instructor's name

Martin Feldman, Professor, Division of Electrical and Computer Engineering

Office hours 9:00 to 10:00 AM, Monday, Wednesday, Thursday, Friday

10:00 to 11:00 AM, Tuesday

3330 C Patrick Taylor Hall

E-mail: mfeldm1@lsu.edu; Phone (W) 578-5489

Text Book (title, author, and year)

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

Other supplemental materials:

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

Specific course information

- (a) Catalog description: EE 2231 Electronics Lab I (2)
- (b) Prerequisites: concurrent registration in EE 2230. 1 hour lecture, 2 hours lab.
- (c) Required or elective: Required

Specific goals of the course:

(a) Specific outcomes of instruction: Students will learn the basic functions and operation of electronics laboratory instrumentation, apply theoretical ideas to practical circuits, and acquire verbal and written skills in technical communication.

In other words, at the end of the semester a student should be able to:

1. Understand and operate general electronics test equipment.
2. Implement and test basic electronic circuits using real devices.
3. Create a technical report detailing and analyzing lab activities.

(b) Explicit goals using student outcomes:

Student Outcomes	Explanation
3a an ability to apply knowledge of mathematics, science, and engineering	Students work through lab reports 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 class, and apply them in building circuits
3d an ability to function on multi-disciplinary teams	Students work together in teams of two
3e an ability to identify, formulate, and solve engineering problems	Students design and understand the circuits they build
3g an ability to communicate effectively, including conveying technical material	Students prepare individual lab reports
3k an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice	Students construct the circuits, operate them with power supplies and function generators, and evaluate their performance with digital scopes and voltmeters

Brief list of topics to be covered

- 1 Thevenin's Theorem
- 2 Resistive Voltage Division
- 3 Silicon Diodes
- 4 Resistor Capacitor Circuits
- 5 Half Wave Rectifiers
- 6 EDC Power Supplies
- 7 Diode Applications
- 8 Bipolar Transistors
- 9 Field Effect Transistors
- 10 Characterization of Op-Amp Circuits
- 11 Transistor Curve Tracer

Additional information (for students)

Computer Usage

Yes. PSPICE analysis of frequency response

Course Outcome Assessment/Grading Policy

1. Lab reports 80% (the lowest lab report will be dropped)
2. Practical Final Examination 20%

Letter grades for the course will be “curved.” They will be determined by dividing each student’s numerical grade for the lab reports and the final by the class average grade. The lowest grade on the lab reports will be dropped for all students. Excused absences will be given a grade equal to the average of the student’s other grades. Students are encouraged to see the instructor during the semester to see how they are doing with respect to the rest of the class.

Lab Reports: Lab reports are due at the beginning of the next lab class unless previous arrangements have been made. Late reports will be penalized 1 point out of 10 (less than 1 week, ½ point). All reports must be typed. Figures may be drawn with a straight edge. Data should be plotted on graph paper, or, preferably, with a computer.

Lab Notebooks: Students will be required to bring a bound notebook to every lab to record data. The notebook may be recalled at any time by the instructor or TA to verify data.

Academic Dishonesty: Academic dishonesty of any kind will not be tolerated. Anyone suspected of cheating will be reported to the dean of students. Lab reports must be written separately, but data should be shared among lab partners.

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.

Students are welcome to visit the professor anytime, although he may not be in his office out of office hours.

Revised, Fall 2017