

Syllabus – ECSE-2050 – Introduction to Electronics (ITE) – Spring 2024

Lecture, lab, and recitation times:

- Lecture: Monday and Thursday: 12:00 Noon, Academy Hall, Auditorium
- Lab Session 1 & 2: Wednesday 9:00 AM & 12:00 Noon, JEC 4104
- Recitation (Lab & Hwk discussion by TAs): Tuesday 7:00 PM, LOW-4050

Instructor: Prof. Fred Schubert, Office: Low Center-7111.

Office Hours: After class; Monday & Thursday 1:30–2:15 PM in CII-7111; During Lab; By email (schubert@rpi.edu); By text & cell phone (518-253-3762) & office phone (518-276-8775).

Teaching Assistants (TAs):

- Bhattacharjee, Srijita (20 hrs) < bhatts10@rpi.edu >
- Lee, Dakyung (20 hrs) < leed23@rpi.edu >
- TAs shall: Attend Lectures and Labs; Hold Office Hours; Hold Recitation Sessions; Attend to hardware & software needs of students (Breadboard, Discovery Board, Parts Kits; PSpice); Collect and grade Hwk & Lab assignments and exams.

RPI Course Catalog: “The physics and operation of semiconductor diodes, bipolar junction transistors (BJT), and field-effect transistors (FET) in elementary analog circuits. Non-ideal operational amplifier characteristics. Amplifier biasing, small-signal analysis, and frequency response. Elementary BJT and FET digital circuits.”

ABET Student Learning Outcomes: “Students will be able to demonstrate (i) an ability to perform DC analysis of BJT and FET amplifiers; (ii) an ability to performs small-signal analysis of BJT and FET amplifiers; (iii) an understanding of the fundamentals of logic circuits; (iv) an ability to perform diode circuit analysis; (v) an ability to perform statistical analysis of experimental results and compare to expected values.”

Prerequisites: ECSE-2010 Electric Circuits.

Recommended textbook: A. S. Sedra and K. C. Smith, “Microelectronic Circuits” (Oxford University Press), any edition.

Lecture and Laboratory: Attendance is mandatory.

Homework & Laboratory Assignments: There are regular homework and laboratory assignments. The assignments are to be submitted to the TAs. The due date found on the Course Home Page (see file-names of Hwk & Labs). The TAs are authorized to use their own discretion with respect to assignment submissions.

Exams: There will be two midterm exams and a final exam. The dates of midterm exams will be announced in class. The final exam will be held as scheduled by RPI. You are allowed to use a **calculator** (or smartphone calculator app) and **anything handwritten by yourself** (such as your notes taken during lecture). You are not allowed to use anything else during the exams. Students excused from a midterm exam receive an oral exam by the instructor and/or the TAs.

Course website: < <https://www.ecse.rpi.edu/~schubert/Courses/Courses.htm> >

Policy on grading composition:

1. Homework 11%.
2. Lab reports 11%.
3. 1st Midterm, 2nd Midterm, and Final Exam 26% each.

Policy on grading: Correct answers receive full credit. Partially correct answers receive partial credit. Incorrect answers receive no credit.

Policy on academic dishonesty: “dishonesty will result in a zero score” (RPI policy).

PSpice: Cadence® PSpice® technology combines industry-leading, native analog, mixed-signal, and analysis engines to deliver a complete circuit simulation and verification solution.

LTSpice: LTSpice® is a high performance SPICE simulation software, schematic capture and waveform viewer with enhancements and models for easing the simulation of analog circuits. Included in the download of LTSpice are macromodels for a majority of Analog Devices switching regulators, amplifiers, as well as a library of devices for general circuit simulation.

Download PSpice: < <https://ecse.rpi.edu/courses/S21/ENGR-2300/OrCAD/download.html> >

Course schedule:

