

University of Portland  
Donald P. Shiley School of Engineering

EE371  
Electronic Circuits Laboratory  
(1 credit hour)

Course Syllabus  
Spring, 2020

- Lab Hours:** Wednesday 2:40-5:40pm, Shiley Hall 309
- Course Description:** Companion laboratory course to the EE352 Electronics Circuits II lecture course. Students analyze, assemble, and test various electronic circuits. Students perform rigorous AC and DC measurements using state-of-the-art instrumentation and correlate results to theoretical analysis. Rigorous written reporting of laboratory results is required. (Co-requisite: EE352.) Fee: \$40.
- Student Outcomes:**
- 1) Perform design, analysis and test of advanced analog BJT and opamp amplifier circuits in the lab.
  - 2) Apply electronic feedback theory and techniques through lab experimentation.
  - 3) Learn proper electronic laboratory build and measurement techniques through three required lab assignments in conjunction with the associated co-requisite EE352 lecture course.
  - 4) Perform the detailed design, analysis and experimental verification of a specific discrete Common Emitter Amplifier.
- Instructor:** Dr. Peter M. Osterberg, [oster@up.edu](mailto:oster@up.edu), <https://faculty.up.edu/oster>, Shiley Hall 225, 503-943-7416, Office Hours posted on office door.
- Text:** None. However, you must purchase and use an approved Lab Notebook available at the UP Book Store.
- Lab Teams:** You will be working in teams of two in this course. Your lab partner will be assigned during the first lab class.
- Lab Notebook:** You are required to maintain your own personal Lab Notebook. The instructor will review it at each Lab Checkoff. Also, it is required to be turned in at the end of the semester. You must follow the *Lab Notebook Format* described in the class handout.
- Lab Reports:** Each of the three Lab Assignments requires a written Final Lab Report. You must follow the *Lab Report Format* described in each Lab Assignment handout.
- Assessment Tools:** 25% Lab #1  
30% Lab #2 (Design Project)  
25% Lab #3  
10% Lab Notebook  
10% Instructor overall assessment
- Grading Scale:** 90% - 100% = A<sup>-</sup> – A  
80% - 89% = B<sup>-</sup> – B<sup>+</sup>  
70% - 79% = C<sup>-</sup> – C<sup>+</sup>  
60% - 69% = D<sup>-</sup> – D<sup>+</sup>  
Below 60% = F

## Course Outline

<u>Date</u>	<u>Topic</u>
1/15	Lab teams assigned, Lab introduction and safety orientation
1/22	Lab#1 (BJT Diff Amp) assigned
1/29	Lab#1 lab work
2/5	Lab#1 lab work
2/12	Lab#1 lab work (Lab #1 Checkoff's due)
2/17	Lab#1 Lab Report due in EE352 class
2/19	Lab#2 (CE Amp Design Project) assigned
2/26	Lab#2 lab work
3/4	<i>Spring Break (no lab)</i>
3/11	Lab#2 lab work
3/18	Lab#2 lab work (Lab #2 Checkoff's due)
3/23	Lab#2 Lab Report due in EE352 class
3/25	Lab#3 (BJT Opamp) assigned
4/1	Lab#3 lab work
4/8	Lab #3 lab work
4/15	Lab #3 lab work (Lab #3 Checkoff's due)
4/22	Lab#3 Lab Report due in box outside my office door

**University of Portland's Code of Academic Integrity:**

Academic integrity is openness and honesty in all scholarly endeavors. The University of Portland is a scholarly community dedicated to the discovery, investigation, and dissemination of truth, and to the development of the whole person. Membership in this community is a privilege, requiring each person to practice academic integrity at its highest level, while expecting and promoting the same in others. Breaches of academic integrity will not be tolerated and will be addressed by the community with all due gravity.

**University of Portland's Assessment Disclosure Statement:**

Student work products for this course may be used by the University for educational quality assurance purposes.

**University of Portland's Accessibility Statement:**

The University of Portland endeavors to make its courses and services fully accessible to all students. Students are encouraged to discuss with their instructors what might be most helpful in enabling them to meet the learning goals of the course. Students who experience a disability are also encouraged to use the services of the Office for Accessible Education Services (AES), located in the Shepard Academic Resource Center (503-943-8985). If you have an AES Accommodation Plan, you should make an appointment to meet with your faculty member to discuss how to implement your plan in this class. Requests for alternate location for exams and/or extended exam time should, where possible, be made two weeks in advance of an exam, and must be made at least one week in advance of an exam. Also, you should meet with your faculty member to discuss emergency medical information or how best to ensure your safe evacuation from the building in case of fire or other emergency.

**University of Portland's Mental Health Statement:**

As a college student, you may sometimes experience problems with your mental health that interfere with academic experiences and negatively impact daily life. If you or someone you know experiences mental health challenges at UP, please contact the University of Portland Health and Counseling Center in Orrico Hall (down the hill from Franz Hall and Mehling Hall) at <https://www.up.edu/healthcenter/> or at 503-943-7134. Their services are free and confidential, and if necessary they can provide same day appointments. In addition, after-hours phone counseling is available if you call 503-943-7134 and press 3 outside of business hours. Also know that the University of Portland Public Safety Department (503-943-4444) has personnel trained to respond sensitively to mental health emergencies at all hours. Remember that getting help is a smart and courageous thing to do – for yourself, for those you care about, and for those who care about you.

**University of Portland's Non-Violence Statement:**

The University of Portland is committed to fostering a community free from all forms of violence in which all members feel safe and respected. Violence of any kind, and in particular acts of power-based personal violence, are inconsistent with our mission. Together, we take a stand against violence. Join us in learning more about campus and community resources, UP's prevention strategy, and reporting options on the Green Dot website, <https://www.up.edu/greendot> or the Title IX website <https://www.up.edu/titleix> .

**University of Portland's Ethics of Information Statement:**

The University of Portland is a community dedicated to the investigation and discovery of processes for thinking ethically and encouraging the development of ethical reasoning in the formation of the whole person. Using information ethically, as an element in open and honest scholarly endeavors, involves moral reasoning to determine the right way to access, create, distribute, and employ information including: considerations of intellectual property rights, fair use, information bias, censorship, and privacy. More information can be found in the Clark Library's guide to the [Ethical Use of Information](https://libguides.up.edu/ethicaluse) at [libguides.up.edu/ethicaluse](https://libguides.up.edu/ethicaluse).

**University of Portland's Learning Commons:**

Trained peer tutors and writing assistants in the Learning Commons, located in Buckley Center 163, work with you to facilitate your active learning and mastery of skills and knowledge. For questions about the Learning Commons, please send all correspondence to Jeffrey White, Administrator, at [white@up.edu](mailto:white@up.edu). The Learning Commons is a program of the Shepard Academic Resource Center (SARC).

**Math Resource Center:** Appointment-based tutoring is available through our online scheduler at [www.bit.ly/up\\_mrc](http://www.bit.ly/up_mrc). Walk-in tutoring Sundays through Thursdays evenings. For MTH 141, request appointments at [math141@up.edu](mailto:math141@up.edu). The course-specific schedule can be found at [www.up.edu/learningcommons](http://www.up.edu/learningcommons), or the reception desk in BC 163.

**Writing Assistance:** Brainstorming ideas for your paper, create an outline, work on citations, or review a draft with a Writing Assistant. Visit [www.up.edu/learningcommons](http://www.up.edu/learningcommons) to access our Writing Center schedule.

**The Language Studio:** Contact the language assistance hotlines to schedule a time to meet throughout the semester at [chinesetutor@up.edu](mailto:chinesetutor@up.edu), [frenchtutor@up.edu](mailto:frenchtutor@up.edu), [germantutor@up.edu](mailto:germantutor@up.edu), or [spanishtutor@up.edu](mailto:spanishtutor@up.edu).

**Natural Sciences Center:** Send your tutoring requests to [biotutor@up.edu](mailto:biotutor@up.edu), [chemtutor@up.edu](mailto:chemtutor@up.edu), or [physicstutor@up.edu](mailto:physicstutor@up.edu).

**Speech & Presentation Lab:** Improve your presentations by requesting an appointment at [speech@up.edu](mailto:speech@up.edu).

**Group Work Lab:** Make an appointment for your group project at [groupwork@up.edu](mailto:groupwork@up.edu).

**Nursing Tutoring:** Tutoring is available for pathophysiology, BIO205, anatomy and physiology, and other nursing courses on a walk-in or appointment basis. Up-to-date schedule information is at [www.up.edu/learningcommons/nursing](http://www.up.edu/learningcommons/nursing).

**Economics and Business Tutoring:** For support in economics, OTM, finance, accounting, and business law courses, send requests for appointments to your discipline's tutor email hotline: [econtutor@up.edu](mailto:econtutor@up.edu), [otmtutor@up.edu](mailto:otmtutor@up.edu), [financetutor@up.edu](mailto:financetutor@up.edu), [accountingtutor@up.edu](mailto:accountingtutor@up.edu), or [bizlaw@up.edu](mailto:bizlaw@up.edu).

Shiley Sophomore Fellows: Provides tutoring in several sophomore engineering classes. To make an appointment, send a request to [stepUP@up.edu](mailto:stepUP@up.edu).

**Learning Assistance Counselor:** Learning assistance counseling is also available in BC 163. The counselor teaches learning strategies and skills that enable students to become more successful in their studies and future professions. The counselor provides strategies to assist students with reading and comprehension, note-taking and study, time management, test-taking, and learning and remembering. Appointments can be made in the on-line scheduler available to all students in Moodle or during posted drop-in hours.

**University of Portland's Lab Access Statement:**

Shop access is only allowed with appropriate training from shop technicians and with instructor permission. If students require card access to a laboratory, they must receive training from a technician. No food or beverages (including water bottles) are allowed in the computer classrooms, shop, or labs.