



ECE 327: *Electronic Devices and Circuits Laboratory I*

233 Caldwell Laboratory

Content: This course is meant to accompany ECE 323 as an introduction to basic electronics. We primarily focus on the use of bipolar junction transistors and operational amplifiers. Labs are constructive; that is, the final lab will integrate work from all other labs into a substantial project.

Text: Students are required to purchase the lab course packet from [UniPrint](#).

Breadboard: Each lab group will also need access to an electronic breadboard for the daily lab experiments (like the one required for ECE 206 and ECE 209). **It is recommended that lab groups use *two or more* breadboards because circuits will take up much space.**

Floppy Disk: Each lab group needs access to a *3.5 inch floppy disk* to save data from the oscilloscopes. **It is recommended that lab groups have *two or three* disks available in case one fails.** Students have also had good luck using **digital cameras** to save scope displays.

Grading (instructor policy takes precedence): The numeric grade for the course is weighted as follows:

- Daily quizzes: 20%
- Lab reports: 40%
- Lab clean-up: 10%
- Final exam: 30%

Daily Quizzes (instructor policy takes precedence): Each class will start with a quiz over the material for that day's lab. Students should arrive on time for the quiz. The quizzes are closed book and closed notes unless otherwise noted.

Daily Lecture: There may be a short (i.e., approximately 45 minutes or less) lecture after each daily quiz and before each lab. The purpose of the lecture is to explain content relevant to the completion of the lab and subsequent lab report.

Lab Reports (instructor policy takes precedence): Each lab group must submit a single lab report at the beginning of the next class after the lab is completed. Lab reports will be penalized 10% per day late.

- **Type** lab reports. Hand draw on [engineering paper](#). Use photographs. Borrow from class PDFs.
- Pages of lab reports should be **numbered**.
- Lab report **cover pages** should include several items.
- Tables & figures are **numbered** with **descriptive captions**. Refer by **name** and *NOT* location.

Final Exam (instructor policy takes precedence): There will be a final exam for this class. Historically, several formats of the exam (e.g., open/closed-book, open/closed-notes, in-class/take-home, etc.) have been used, but rarely is there a lab practical section.

Attendance (instructor policy takes precedence): Students are responsible for all assignments, change of assignments, announcements, and other course-related materials. If a lab needs to be missed, arrangements should be made with the instructor at least 24 hours prior to the lab so that the lab work can be made up. The instructor reserves the right to determine when make-up work is allowed.

Honor System: The ECE Honor System rules apply to all student work. All lab reports must reflect the understanding of the lab group. All other written work must reflect the understanding of the individual student. Otherwise, discussions on course material are encouraged.

Sample schedule (instructor's ordering, pre-lab activities, and exams take precedence): In the past, the course labs were presented out of order in an attempt to supplement ECE 323 course material. Below, the original order is presented to help maintain continuity in the ECE 327 material.

Lab 0: Introduction/Instrumentation

Lab 1: Bipolar Junction Transistor

Lab 2: Field Effect Transistor

Lab 3: Voltage Regulators

Lab 4: Oscillators

Lab 5: Analog-to-“Digital” Conversion

Lab 6: “Digital”-to-Analog Conversion

Lab 7: Output Filtering

Lab 7 (continued): Project Integration and Debugging

— : Lab report for Lab 7 due

— : Final exam

Disability services: Students with disabilities that have been certified by the *Office for Disability Services* will be appropriately accommodated and should inform the instructor as soon as possible of their needs. [The Office for Disability Services](#) is located at 150 [Pomerene Hall](#), 1760 Neil Avenue. They can be reached by telephone (614-292-3307) or TDD (614-292-0901) or the web (<http://www.ods.osu.edu/>).