



ECE 209: *Circuits and Electronics Laboratory*

Autumn 2008

Tuesday, 4:30PM–8:18PM

Instructor: Ted Pavlic, 351 Caldwell Laboratory (CL), pavlic.3@osu.edu
<http://www.ece.osu.edu/~pavlic/>

E-mail Policy: Be sure to include **ECE209** in the subject of your e-mail. Otherwise, your e-mail may be accidentally misfiled (e.g., automatically marked as spam). Do not hesitate to e-mail me; I am happy to help.

Content: This course introduces students to the basic instruments of an electronics laboratory. Students will also build and analyze simple circuits based on fundamental linear and nonlinear circuit components.

Course Web Page: <http://www.ece.osu.edu/~pavlic/ece209/>

Make sure to check the web page for valuable resources on electronics and lab report writing.

Guidelines for lab report grading are also on the web site.

Carmen (<http://carmen.osu.edu/>) will be used to distribute grade information.

Office Hours: Tuesday from 8:30AM–10:30AM (very tentative)

Appointments can be made by e-mail. Alternatively, I welcome walk-ins (i.e., office visit without appointment) provided that I have a few minutes to help.

Text/Resources:

- (i) Students are required to purchase the lab course packet from [UniPrint](#).
 - [Course packet errata](#) is given on the [course web page](#).
- (ii) During class, each **lab group** needs access to a **breadboard**. If necessary, one can be purchased in **205 Dreese Laboratories** for \$22.00 in **exact** cash or a check to *The Ohio State University*.
 - This breadboard can be used in several other laboratory courses.
 - Despite what other (e.g., digital) TA's say, do **not** discard banana-connector posts!

Sometimes I will distribute supplementary material in class and on [the course web page](#).

Grading: The numeric grade for the course is weighted as follows:

- Quizzes and pre-labs: 20%
- Lab reports: 40%
- Attendance, active participation, and clean-up: 10%
- Final exam: 30%

The final *letter grade* will be curved based on weighted numeric scores *before* the final exam.

Quizzes and Pre-labs: For two labs, students will complete an **individual** pre-laboratory assignment due at the beginning of class (as with lab reports, there is a 5% **bonus** for \TeX -generated submissions). Each of the other labs starts with an **individual** closed-book and closed-notes quiz over its material. Students should arrive to class on time for the quiz.

Daily Lecture: A short (i.e., ~30 minutes or less) lecture follows each pre-lab/quiz submission and before each lab. It serves to explain content relevant to the completion of the lab and subsequent lab report.

Lab Groups: Students will work in groups of **two** to **three** students.

Lab Reports: 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. Use [engineering paper](#) for hand-drawn figures (or use a **clear photograph**).
- Pages of the lab reports should be **numbered**.
- Lab report **cover pages** should include
 - Class identifier (i.e., “ECE 209”)
 - Section day and time (e.g., “Tuesday 4:30”)
 - Instructor name (e.g., “Instructor: T. Pavlic”)
 - Names of all group members (grades are given to these members)
 - Table number (posted within each cubicle)
- Tables and figures should be **numbered** and have **descriptive captions**. Because these items naturally *float* to the best location on the page, they should be referred to by their **name** and not by their relative position (e.g., refer to “Table 1” and not “the table below”).
- A report generated with any flavor of \TeX (e.g., \LaTeX) will earn the authoring group **5% extra credit** on that report (**hint:** use the \TeX or \LaTeX macros to help me grade).
 - Help getting started with \TeX / \LaTeX can be found on [the course web page](#).

Additional details about lab report format, content, and grading can be found on [the course web page](#).

Final Exam: The exam is a written closed-book closed-notes cumulative exam to be completed *individually* during the last regularly-scheduled class.

Attendance: Students must attend **all labs**. If a lab needs to be missed, arrangements should be made with me at least 24 hours prior to the lab so that the lab work can be made up. I reserve the right to determine when make-up work is allowed. Students are responsible for all assignments, change of assignments, announcements, and other course-related materials.

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.

Tentative Schedule:

Week 1 (Sep 30): Course Overview

Week 2 (Oct 7): Introduction to the Digital Oscilloscope and Function Generator (**pre-lab** due)

Week 3 (Oct 14): Meters, Measurements, and Errors (quiz)

Week 4 (Oct 21): Introduction to Operational Amplifiers and Step and Frequency Response of First-Order Circuits (quiz)

Week 5 (Oct 28): Frequency Response of First-Order Active Circuits (quiz)

Week 6 (Nov 4): Properties of Second-Order Circuits (**pre-lab** due)

Week 7 (Nov 11): Veterans Day Observed — No class.

Week 8 (Nov 18): Nonlinear Circuits: Diode and Transistor Switch (quiz)

Week 9 (Nov 25): Digital-to-Analog (D/A) Application (quiz)

Week 10 (Dec 2): Final Exam (in class)

Make-up schedule: If labs cannot be completed on time by a significant portion of the class, I *may* work with the class to schedule a special lab make-up time before the next lab. Students are strongly encouraged to finish labs during the normal lab time. Students should not expect that additional time will be available.

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/>).