ECE 3043

Electrical and Analog Electronic Circuits Laboratory

Course Syllabus Fall 2026

Canvas will be used as the course management system for this semester. Lecture exams will be taken in class. Homework assignments will be posted on and submitted via Canvas. Lab reports will be submitted via Canvas. A primary means of communication will be through Canvas Announcements. Specific due dates for all assignments will be posted on Canvas. A general course overview follows. Additional details will be provided via Canvas announcements.

Catalog Description

Theory and experiments related to the design, analysis, construction, and measurement of elementary passive and active analog circuits using both discrete and integrated devices.

Course Outcomes

Upon successful completion of this course, students should be able to

- evaluate the performance of basic electrical and analog electronic circuits by using test and measurement instrumentation including dc power supplies, function generators, oscilloscopes, digital multimeters, and RCL meters.
- design basic electrical and analog electronic circuits such as amplifiers, filters, rectifiers, and oscillators to meet given specifications.
- validate designs and problem solutions by using mathematical and circuit simulation software.
- analyze and construct basic circuits and relate expected behavior to experimental measurements.

Required Text

Leach, W. M., Jr., Brewer, T. E., & Robinson, R. A., *Experiments in Electrical and Analog Electronic Circuits (ISBN:978-0-7575-9651-3)*

The text may be purchased from either bookstore or directly from the publisher Kendall-Hunt:

https://he.kendallhunt.com/product/experiments-electrical-and-analog-electronic-circuits-text-ece-3043

Required Supplies

- Proto-Board or Breadboard
- ECE 3043 Parts or Chip Set
- Calculator
- Wire Jumper Kit

Attendance Policy

Attendance is mandatory for all laboratory sessions and expected for lecture. Any absence from an exam or laboratory session will result in a grade of zero which may be made-up at the discretion of the instructor. If you are unable to attend your lab session for any reason, please reach out to the course and laboratory instructor as soon as possible to discuss possible alternative arrangements.You are required to read all Canvas announcements. Please be sure your notifications are set appropriately so that you are aware of all Canvas postings.

Grading Policy

All letter grades assignments are made by the course instructor and are based on the ranking in each individual laboratory session. There is no fixed pre-determined association between the numerical course average and the course letter grade. The traditional scale (greater than 90 = A, 80-90 = B, etc.) may be used as a general guide, but the actual ranges in a particular semester may be adjusted to determine the course letter grades. The minimums of the traditional scale will never be increased in determining the final letter grades. For example, if your final average is greater than 80, you will earn at least a B, but it is possible to earn a B with a final average less than 80.

The formula for determining the ranking is as follows:

$$CA = 0.10(LQ) + 0.20(HW) + 0.30(LR) + 0.10(LE1) + 0.10(LE2) + 0.20(FE)$$

where
CA=Course Average
LQ=Laboratory Quizzes
HW=Homework
LR=Laboratory Reports
LE1=Lecture Exam 1 (one hour closed book and note written exam)
LE2=Lecture Exam 2 (one hour closed book and note written exam)
FE=Final Exam (one hour closed book and note comprehensive exam).

All assignments are individual assignments; this includes laboratory reports, homework assignments, computer simulations, and exams. There are no laboratory partners.

Pop-quizzes during lecture will count as one homework assignment.

The lowest quiz and experiment grade will be dropped when calculating the course average. This policy includes quizzes and experiments that were excused but not made-up. Any assignment grade that has been adjusted due to academic misconduct will not be dropped.

All students must participate in all phases of the course. This is a laboratory course. Any student who does not attend the laboratory and perform the experiments or prepare and submit all the assignments in a timely manner is unlikely to pass. Any student who has unexcused absences for more than two experiments will receive an F in the course. Any student who fails to substantially complete and submit more than two lab reports will receive an F in the course.

Exams

Unless otherwise explicitly stated by the course instructor, all exams are closed book and note. Only a standard or programmable calculator may be used. At the beginning of any and all exams all cell phones, PDAs, pagers, etc. must be turned off for the duration of the exam. The only electronic device that may be used in an exam is the before mentioned calculator. Students who require hearing aids or other electronic health aids must alert the instructor prior to the exam. Only pencil, eraser, and calculators are permitted on exams.

Homework

All assignments are individual assignments. Each homework assignment must have a cover sheet with the course number, section number, section day and time, and a bitmap photo of the student. Any unsigned homework will be assigned a grade of zero. All schematics must be included and plots must be clearly titled and labeled. Homework will be assigned approximately weekly and will be submitted on Canvas.

Lab Quizzes

The lab quizzes are taken during the first 10 minutes of each lab section. The quizzes will cover the previous and current laboratory experiment. The first quiz will be given at the beginning of the lab period in which you begin experiment 2. It will cover experiments 1 and 2.

Lab Reports

Lab reports may be based on both data taken in lab and simulations performed using NI Multisim. They will be submitted on Canvas and will generally be due one week after they are started. The particular due dates will be assigned on Canvas. Circuits must be demonstrated to the lab teaching assistants for credit.

Late Assignments

Homework and lab reports, which are turned in late but within two days of the due date, will be penalized 20%. No assignments will be accepted beyond this extended period. Exceptions may be made if there is an official excuse from the Dean of Students. Job interviews, vacations, visiting relatives, attending conferences, etc. are not valid excuses for class absenses or submitting late assignments.

Academic Misconduct

Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards.

Review Georgia Tech's Honor Code (https://catalog.gatech.edu/policies/honor-code/) and the student Code of Conduct (https://catalog.gatech.edu/rules/18/).

Any student suspected of cheating or plagiarism on a quiz, exam, or assignment will be reported to the Office of Student Integrity, who will investigate the incident and identify the appropriate penalty for violations.

Do not engage in unauthorized collaboration. All of the assignments in this course are to be completed individually; there are no laboratory partners. Each assignment – laboratory reports, homework problems, exams – must reflect only the efforts of the student whose name appears on the assignment. Students may, of course, discuss assignments in general terms with one another, but all work should be generated individually. Likewise, students may receive assistance on assignments from the course instructors, or lab instructors. However, students are expected to write their own reports and do their own work. Copying or allowing peers to copy all or portions of any assignment is considered plagiarism (see below) and is expressly forbidden; an engineer is a creative thinker and not a scribe.

Do not plagiarize. Georgia Tech and the School of ECE define plagiarism as "Submission of material that is wholly or substantially identical to that created or published by another person or persons, without credit notations indicating authorship" (Section XVII. C. Academic Misconduct, General Catalog). Plagiarism constitutes a serious violation of the Honor Code and will be reported immediately to the Dean of Students.

Do not copy—even the smallest portion—of another student's report.

Do not attempt to falsify data and/or experimental results, or to secretly alter a paper after submission.

Do not attempt to forge the signature of someone else.

Do not engage in disruptive behavior or hooliganism, which includes, but is not limited to, the abuse and/or theft of Institute equipment and/or littering.

Students Repeating the Course

Students who are repeating the course must perform all of the assignments anew. This includes all laboratory reports, homework problems, etc. Material from a previous semester is unacceptable. Attempts to alter dates

or names on assignments will result in a charge of Academic Misconduct.

Student-Faculty Expectations Agreement

At Georgia Tech, we believe that it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. The Student-Faculty Expectations (https://catalog.gatech.edu/rules/22/) articulate some basic expectations that you can have of me and that I have of you. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, I encourage you to remain committed to the ideals of Georgia Tech while in this class.

Accommodations for Students with Disabilities

If you are a student with learning needs that require special accommodation, contact the Office of Disability Services (https://disabilityservices.gatech.edu/) (404-894-2563) as soon as possible to make an appointment to discuss your special needs and to obtain an accommodations letter. Please also e-mail me as soon as possible in order to set up a time to discuss your learning needs.