

Course Syllabus and Schedule Spring 2020

ECE 4043—Senior Analog Electronic Circuits Laboratory

Instructors

- Dr. Allen Robinson

Academic Professional

OFFICE: Van Leer E-388

PHONE: 404.894.0176 (office)

E-MAIL: robinson@ece.gatech.edu

OFFICE HOURS: TBA

Text

Marshall Leach, Tom Brewer, and Allen Robinson

Experiments in Analog Electronic Circuits, 1st. ed. (ISBN:978-1-4652-3241-0)

(Required)

The text must be purchased from the publisher Kendall-Hunt at

https://www.kendallhunt.com/analog_electronic_circuits/

Attendance Policy

Mandatory for all laboratory sessions and expected for recitation. 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. An absence from a pop-quiz will not be made-up and a grade of zero will be assigned.

Grade Policy

All letter grades assignments are made by the recitation instructor and are based on the ranking in each individual laboratory session. The course grade point average is a random variable for which

$$\text{Probability } [2.9 < GPA < 3.1] = 0.9.$$

The formula for determining the ranking is as follows:

$$CA = 0.20(HW) + 0.25(LR) + 0.15(E1) + 0.15(E2) + 0.25(FE)$$

where

CA=Course Average

HW=Homework
LR=Laboratory Reports
E1=Lecture Exam 1 (one hour open book and note written exam)
E2=Lecture Exam 2 (one hour open book and note written exam)
FE=Final Exam (one hour open 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 will count as one homework assignment.

All students must participate in all phases of the 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.

Classroom Behavior

Whilst attending a lecture students are required to pay rapt attention to the lecturer and his/her lecture. This requires that all non-medical devices be turned off such as cell phones, PDAs, cameras, etc. Laptops are permitted only if they are being used to view material directly related to the lecture. Calculators may be used only during quizzes. No inter-student communication is to occur during a lecture; this specifically includes all forms of oral and written communication. Students are, of course, permitted and encouraged to ask pertinent questions to the lecturer. Do not leave the lecture before it concludes or arrive late unless a medical emergency arises. Do not engage in an activity that disrupts the lecture. Students are expected to take copious notes during the lectures given by each instructor.

Whilst attending a laboratory, students are required to perform the experiment. Do not dine, sleep, or socialize in a laboratory. No food or drink of any kind should ever be brought into a laboratory. Do not leave personal possessions at a laboratory station.

Standards of decorum require that all members of the Georgia Tech community are to be addressed by their proper title, e.g. Mr., Miss, Ms., Dr., Professor, Dean, Provost, President, Chancellor, etc.

Spring 2020 SCHEDULE

Week of	Recitation Session (F)	Lab Session (T)
January 6	BJT	None
January 13	CE	Exp 1—Curve Tracer, BJT
January 20	CB,CC	Exp 2—CE
January 27	JFET	Exp 3—CB
February 3	BJT Diff Amplifier	Exp 4—CC
February 10	Lecture Exam 1 (Week of February 10)	Exp 5—JFET
February 17	MOSFET	Exp 6—BJT Diff Amp
February 24	Feedback Amplifiers	Exp 7—MOSFET
March 2	Discrete Op-Amp	Exp 8—Feedback Amplifier
March 9	Lecture Exam 2 (Week of March 9)	Exp 8—Feedback Amplifier
March 16	Spring Break	Spring Break
March 23	Discrete Op-Amp	Exp 11—Discrete Op-Amp
March 30	Discrete Op-Amp	Exp 11—Discrete Op-Amp
April 6	Oscillators	Exp 11—Discrete Op-Amp
April 13	Final Exam (Week of April 13)	Exp 12—Oscillators

Exams

Unless otherwise explicitly stated by the course instructor, all exams are open book and note. Only a standard or programmable calculator may be used; laptops, tablets, pcs, etc are forbidden. 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.

Academic Misconduct

All students taking this course are required to strictly adhere to the Georgia Tech Honor Code, whose complete text may be found at

<http://osi.gatech.edu/plugins/content/index.php?id=46>

or

<http://www.honor.gatech.edu/plugins/content/index.php?id=9#appendixA>

Any violations of the Code are considered academic misconduct and will be submitted to the Office of the Dean of Students for appropriate action. Several violations of the Code are elaborated upon below.

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 confer or consult with any other lab student about any portion of an assignment.

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.

Policies for 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.

Policies for 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. Each homework problem that involves the use of computer software such as National Instruments SPICE (Multisim) and/or Mathcad must be digitally signed by pasting a bitmap photo of the student onto the solution. Any unsigned homework will be assigned a grade of zero. All SPICE plots must have the time/date stamp on the printout or it will be assigned a grade of zero.

Policy for Late Assignments

Assignment turned in late but within two days of the due will be penalized 10%. Within a week 20%. No assignments will be accepted after one week of the due date. 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 absences or submitting late assignments.

Background Requirements

Prerequisite: ECE 3043

Materials Required

Lab Manual—one per student

Proto-Board or Breadboard—one per student

All Parts Will Be Supplied Pro Bono

Calculator

One USB Memory Stick

These materials must be brought to each lab session.