

GEORGIA INSTITUTE OF TECHNOLOGY

SCHOOL of ELECTRICAL & COMPUTER ENGINEERING

ECE 3710 Circuits and Electronics

GTL -FALL 2020- Syllabus & Schedule

Instructor: Dr. Suresh Sundaram,

Email: ssundara@georgiatech-metz.fr (Please include "ECE 3710" in the subject line.)

Office: GTL 213

Office Hours:

Every Monday between 11:00 to 12.30 am and 2.00 to 3.30 pm or Walk-ins, or by appointment

Class Details:

Lecture: Monday 8:30-9:30 am & Wednesday 8:30-9:30 (Blue Room)

Prerequisites:

Phys 2212/2232

Course Websites:

<https://gatech.coursera.org/> & <http://t-square.gatech.edu/>

Course Materials:

Textbook(s): The Textbook Circuits by Fawwaz Ulaby & Michel Maharbiz. Available at Barnes and Noble and at <http://www.studica.com/GeorgiaTech.html>

Other Materials:

NI myDAQ and Circuits Textbook Bundle (Includes NI myDAQ student data acquisition board)

Note: The myDAQ and circuit parts are available at GTL. Contact me if you want to use them outside of class. **The first lab will be the second week of class.**

Grade Policy:

- 10% – Homework (completed on Canvas)
- 10% – In-Class Quizzes (Lowest 3 dropped)
- 5% – In-Class Worksheet (Participation, one dropped)
- 15% – In-Class Labs
- 20% – Exam 1 (Week of February 12)
- 20% – Exam 2 (Week of March 12)
- 20% – Final Exam
- *2% – Extra Credit: Build a useful circuit and give an in-class demo.

Course Structure:

This course is being taught in conjunction with two on-line Coursera courses: Linear Circuits and Introduction to Electronics. Sign up for the class through the link <https://gatech.coursera.org/> (DO NOT USE coursera.org). All of the lectures for the semester will be on-line uploaded in Canvas. The homework will be completed on-line.

The assigned lectures for each class period are listed on the syllabus in the Canvas site. Unless otherwise noted, the GTL course will follow the schedule posted on Coursera. There will be daily quizzes in class on the on-line lecture material. Quizzes are open- note, but closed-Internet (and closed-neighbor). You may need a calculator for some of the quizzes.

There will be several in-class labs where students will perform hands-on activities using data acquisition boards. Some of these activities include exploration of RC and RLC circuits, op-amp circuits, filters, and physically-motivated applications of electronic circuits. These hands-on activities are designed for students to complete during class and turn in a worksheet.

There will be common tests among all sections and a common final exam. Class time will be devoted to the hands-on activities, working sample problems, recitation, and working homework.

Final Exam:

The final exam for this course will be held during the exam period assigned for the class.

Dead Week:

There may be homework and an in-class lab during the last week of the semester (dead week). (Note: This in-class lab is allowable under the Georgia Tech dead week policy since the scope and workload of this in-class activity does not reach the level of a standard lab.)

Lab Software:

We will use the ELVISmx Instrument Launcher for the myDAQ device. This software is Windows-based, so please install it on a Windows machine or the Windows partition of a Mac. (Use Bootstrap or Parallels with this software.) The software is available at the National Instruments site (<http://joule.ni.com/nidu/cds/view/p/id/2157/lang/en/>). Support for the myDAQ device can be found at <http://www.ni.com/tutorial/11420/en/>.

WARNING: It may take over an hour to download and install the software.

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://honor.gatech.edu/content/2/the-honor-code>. Any violations of the Code are considered academic misconduct and will be submitted to the Office of the Dean of Students for appropriate action.

Collaboration:

Students may discuss assignments in general terms with one another, but (unless stated otherwise) all work should be generated individually. Likewise, students may receive assistance on assignments from the course instructors. However, all of the assignments in this course are to be completed individually. Copying or allowing peers to copy all or portions of any assignment is considered plagiarism and is expressly forbidden.

TENTATIVE SCHEDULE FOR ECE3710- FALL 2019- GTL

| Week of | Class I | Class II |
|---------------------------------------|-------------------------------|--|
| Linear Circuits 1: DC Analysis | | |
| 18 th Aug | Course Introduction | Module 1, Lessons 1.x, 2.1 – 2.2 |
| 24 th Aug | Lessons 2.3 – 2.6, 2.9 – 2.10 | Lab 1 (Lessons 2.7 – 2.8) |
| 31 st Aug | Lessons 2.11 – 2.13 | Lab 2 (Lessons 2.14 – 2.15) |
| 7 th Sep | Lessons 3.1 – 3.5 | Lessons 3.6 – 3.10 |
| 14 th Sep | Lab 3 | Lessons 3.13 – 3.16 Test 1: tentatively |
| Linear Circuit 2: AC Analysis | | |
| 21 th Sep | Lessons 1.1 – 1.5 | Lab 4(Lessons 1.6 – 1.8,) |
| 28 th Sep | Lessons 2.1 – 2.7 | Lessons 2.8 – 2.11 |
| 5 th Oct | Lab 5(Lessons 2.10) | Lessons 3.1 - 3.4 |
| 12 th Oct | Lessons 3.6 – 3.10 | Test 2: tentatively |
| Introduction to Electronics | | |
| 19 st Oct | Lessons 1.1, 2.1 – 2.3 | Lessons 2.4-2.6, 3.1-3.2 |
| 26 th Oct | Fall Break | Fall break |
| 2 nd Nov | Lessons 3.3 – 3.7 | Lab 6(Lesson 3.4 – 3.5) |
| 9 th Nov | Lessons 4.1 – 4.3 | Lessons 4.4 – 4.5 |
| 16 th Nov | Lessons 5.1 – 5.4 | Lessons 5.5 – 5.7 |
| 23 th Nov | Lab 7(Lessons 6.1 – 6.6) | Review for final exam & Feedbacks |
| 30 th Nov | Make up lab or class | Reading period |
| | Final exam | |