

# **ECE 3741: Instrumentation and Electronics Laboratory**

## **GTE-Syllabus**

**Instructor:** Dr. Ashutosh Srivastava

**Email:** [asrivastava310@gatech.edu](mailto:asrivastava310@gatech.edu)

**Office Hours:** Walk-ins, or by appointment, specific time slots will be announced later.

### **Course Objective and Outcomes:**

ECE 3741 is a laboratory course designed to provide hands-on experience in building and analyzing practical electronic circuits. It complements the skills learned in **ECE 3710 (Circuit Analysis)**, a prerequisite for this course. ECE 3741 serves as a circuits lab for non-ECE majors, fulfilling the laboratory requirement.

Upon successful completion of this course, you will be able to:

1. Identify and understand the function of basic circuits and components.
2. Effectively use essential electronic equipment, including:
  - Breadboard
  - Oscilloscope
  - Multimeter
  - Power supply
  - Function generator
  - Opamp
3. Construct and troubleshoot electrical circuits from schematic diagrams.
4. Compare theoretical calculations with measured results for various circuits and parameters.
5. Apply knowledge from ECE 3710 and ECE 3741 to design, build, and test specific circuit elements.

### **Course Delivery and Student Support:**

The lab sections of ECE 3741 are taught by graduate teaching assistants (TAs). For day-to-day questions or concerns, such as absences or quiz grades, please reach out to your assigned TA first. TA contact information and open office hours will be posted on Canvas once assignments are finalized.

**Prerequisites:** ECE 3710 (can be taken concurrently in GTE)

**Course Websites:**

All course information is posted to Canvas. Students are required to check Canvas regularly for official information. Canvas serves as your official grade record - ensure it is correct at all times.

**Required Materials:**

- ECE 3741 Chip Set and components (Provided by GTE)
- USB flash drive

**Attendance Policy:**

- Attendance is mandatory.
- Any unexcused absence will result in a zero for both the lab report and the quiz for that experiment.
- Lab quizzes are given during the first 15 minutes of the lab session. Students arriving after the quiz begins will receive a zero.

**Grade Policy:**

- 35% - Lab Reports
- 30% - Lab Quizzes
- 35% - Lab Exam

Letter grade assignments will be made by the instructor.

**Lab Reports:**

Lab procedures are available on Canvas. Formal lab reports are not required. Instead, at the end of each experiment, students must submit the answers to questions, along with any required plots and data tables, through Canvas to the lab instructor or TA. Each student is responsible for submitting their own lab report, and all work must be turned in by the start of the next lab session.

**Lab Quizzes:**

Lab quizzes are 10 minute timed assessments held at the start of each lab session. They may cover material from both the current and previous experiments, so it's essential to review the lab procedures beforehand. While the quizzes are open book, they must be completed individually.

**Lab Exam:**

The laboratory exam is a 1.5 hour comprehensive exam covering all of the experiments and will be completed individually on the specified day in lab.

**Final Exam Week:**

**There will not be an exam during finals week.**

**Academic Misconduct:**

All students enrolled in this course are expected to fully comply with the Georgia Tech Honor Code, which can be accessed at <http://honor.gatech.edu/content/2/the-honor-code>. Any violations of the Honor Code will be treated as academic misconduct and reported to the Office of the Dean of Students for further action.

**Tentative schedule for the entire semester will be updated at the first week of the semester.**