GEORGIA INSTITUTE OF TECHNOLOGY

SCHOOL of ELECTRICAL & COMPUTER ENGINEERING

ECE 2031: Digital Design Laboratory Fall 2026

Syllabus

Instructor:
Simon Gautier
simon.gautier@georgiatech-metz.fr (Please include “ECE 2031” in the subject line.)

In case of health issue, Course will be temporarily given by Dr Suresh Sundaram

Office hours
Institut Lafayette, Office 103
Wednesday 9:30-11:30
Other times by appointment in person or remote.

Class Details:
Lecture (Study Room – first Floor): TBD
Lab (Institut Lafayette - Level 0): TBD

Prerequisites:
ECE 2020
ECE 2035 or 2036 (may be taken concurrently)

Course Materials:
Required Text:

Thomas R. Collins and Christopher M. Twigg
Digital Design Laboratory Manual (2nd Edition)
ISBN: 978-0757571572
An eBook option is available directly from the publisher.
You must purchase a new copy. (There are consumable pages.)

Optional Texts:

H. O. Hamblen, T. S. Hall, and M. D. Furman
Rapid Prototyping of Digital Systems: SOPC Edition
ISBN: 978-0387726700
Leslie C. Perelman, James Paradis, and Edward Barrett
The Mayfield Handbook of Technical & Scientific Writing
ISBN: 978-1559346474
(Available on-line at http://www.mhhe.com/mayfieldpub/tsw/home.htm)
ECE 2031 Workbook (available at the main course website)

Attendance Policy:

Attendance is expected for the lecture remote and live sessions and mandatory for all laboratory sessions. 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.

In case of a health issue that prevent you taking an exam or returning an assessment, a note from a doctor will be required before rescheduling the exam otherwise you will have an F to the exam.

Grade Policy:

- 25 % Lab reports
- 25% Prelab quizzes
- 10 % One or more Lab Practical Excercises
- 20 % Final Project
- 20 % In-class Exam

All letter grade assignments are made by the instructor and are based on the ranking in each individual laboratory session. All assignments are individual assignments. This includes pre-lab work, laboratory reports, homework assignments, computer simulations, and exams. You will work in groups on the labs, but everything you turn in must be your own work.

The written exams are closed book and closed note. The lab practical exam is open book, open notes. The lab practical exam will be determined later in the semester. At the beginning of all exams, any electronic communication device must be turned off and put away for the duration of the exam.

Open Lab:

Hopefully you will complete all lab assignments during your allotted time. I have yet to decide whether or not it will be necessary to hold additional open lab hours.

Final Exam:

There is no final exam for this course. You will give a final project presentation during the lab session of dead week. The written final report will be due during finals week.

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 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. Although there are laboratory partners, each assignment— laboratory reports, homework problems, exams—must reflect only the efforts of the student whose name appears on the assignment. Copying or allowing peers to copy all or portions of any assignment is considered plagiarism and is expressly forbidden.

Important dates:
First day of class: 25th August 2026
Last day of class: 17th December 2026
Recess week : 26th – 31st October 2026

Tentative schedule (An updated version will be provided first week of class)

Week	lecture	Lab
#1	Introduction	No lab
#2	Computer Aided Logic Design	Lab 1
#3	Discrete Circuits	Lab 2
#4	Circuit Characteristics	Lab 3
#5	State Machines (SMs) and VHDL I	Lab 4
#6	Review session / written exam	Lab 5
#7	VHDL II and Sequential Timing	Lab 6
#8	Train Lab	Lab 7
#9	Simple Computer I	Lab 8
#10	Simple Computer II	Lab 9
#11	Practical Exam Review	Practical exam
#12	Final Project Introduction	Project work
#13	Proposals	Project work
#14	Written Exam Review	Design summary/project work
#15	In class Exam	Project work
#16	Presentation & Report Tips	Project demos/project work