GEORGIA INSTITUTE OF TECHNOLOGY SCHOOL of ELECTRICAL & COMPUTER ENGINEERING

ECE 2031: Digital Design Laboratory

**GTL** -**SPRING** **2019- Syllabus & Schedule**

**Instructor:** Dr. Suresh Sundaram, Email:  ssundara@georgiatech-metz.fr (Please include “ECE 2031” in the subject line.)

**Office**:  GTL 102

**Office** **Hours:** Every Monday between 14:00 to 17.00 am or Walk-ins, or by appointment

**Class** **Details:** Lecture (Brown Room): Thursday- 8:30-9:30 Lab (Inst. lafayette): Tuesday- 9:30 am-12:30 pm

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

**Course Websites:**

<http://powersof2.gatech.edu/2031/ece2031.html> <http://upcp.ece.gatech.edu/2031.html> <http://canvas.gatech.edu/>

**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.

**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)

**Other Materials:**

ECE 2031 Workbook (available at the main course website)

ECE 2031 Chip Set (Provided by GTL)

Protoboard (Provided by GTL)

Wire Kit (Provided by GTL)

**Attendance Policy:**

Attendance is expected for the lecture session 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.

**Grade Policy:**

20% - Lab reports

5% - Participation

25% - Prelab Quizzes

10% - One or more practical lab exercises

15% - Projects

20% - In-class Exam

5% - Online Activities and Quizzes

\*Up to 10% of your total grade can be lost for not keeping the lab clean.

All letter grade assignments are made by the instructor. Most assignments are individual assignments. This includes pre-lab work, laboratory reports, homework assignments, computer simulations, and exams. You are expected to fully participate in all group assignments associated with the final project.

Be familar with the course websites, especially the course overview and lab results sections in the canvas website. These describe the expectations for the assignments you will turn in.

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

The ECE 2031 Workbook has more details about grades, assignments, late policies, grade disputes, missed quizzes, etc.

**Open Lab:**

Hopefully you will complete all lab assignments during your allotted time. Additional open lab hours will be held as needed, typically immediately after the scheduled lab times. You may use the lab during other class sections (including ECE 3043) provided there is enough equipment. However, priority always goes to students in the current section.

**Final Exam and Dead Week:**

There is no final exam for this course. You may give a final project presentation and/or turn in a final report during the last week of class. The written final report may 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. Copying or allowing peers to copy all or portions of any assignment is considered plagiarism and is expressly forbidden.

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| **Tentative SPRING 2019 Schedule**  | **Tuesday** | **Thursday** |
|  | **8th JaN** | **10th JaN** |
| **Lab and Classroom Lecture Topic** | **Lab Closed** | **Introduction & Lab 1** |
| **Assignments Due**  | **None** | **None** |
| **Lab Activity**  |  | **Closed** |
|  | **15th JAN** | **17th JAN** |
| **Lab and Classroom Lecture Topic** |  | **Lab 2** |
| **Assignments Due**  | **Prelab1** |  |
| **Lab Activity**  | **Do Lab 1** |  |
|  | **22nd JAN** | **24th JAN** |
| **Lab and Classroom Lecture Topic** |  | **Lab 3 & tech comm.** |
| **Assignments Due**  | **Prelab 2 & Lab 1 Results** |  |
| **Lab Activity**  | **Do Lab 2** |  |
|  | **29th JAN** | **31st JAN** |
| **Lab and Classroom Lecture Topic** |  | **Lab 4**  |
| **Assignments Due**  | **Prelab 3 & Lab 2 Results** |  |
| **Lab Activity**  | **Do Lab 3** |  |
|  | **5th FEB** | **7th FEB** |
| **Lab and Classroom Lecture Topic** |  | **Lab 5** |
| **Assignments Due**  | **Prelab 4 & Lab 3 Results** |  |
| **Lab Activity**  | **Practical Exercise 1 & Do Lab 4** |  |
|  | **12th FEB** | **14th FEB** |
| **Lab and Classroom Lecture Topic** |  | **Lab 6 & Published Document Figure Review** |
| **Assignments Due**  | **Prelab 5, Lab 4 Results, & Published Doc\*** |  |
| **Lab Activity**  | **Do Lab 5** |  |
|  | **19th FEB** | **21st FEB** |
| **Lab and Classroom Lecture Topic** |  |  |
| **Assignments Due**  | **GTL RECESS- NO LAB** | **GTL RECESS- NO Lecture** |
| **Lab Activity**  |  |  |
|  | **26th FEB** | **28th FEB** |
| **Lab and Classroom Lecture Topic** |  | **Lab 7** |
| **Assignments Due**  | **Prelab 6 & Lab 5 Results** |  |
| **Lab Activity**  | **Do Lab 6** |  |
|  | **5th MAR** | **7th MAR** |
| **Lab and Classroom Lecture Topic** |  | **Lab 8** |
| **Assignments Due**  | **Prelab 7 & Lab 6 Results** |  |
| **Lab Activity**  | **Practical Exercise 2 & Do Lab 7** |  |
|  | **12th MAR** | **14th MAR** |
| **Lab and Classroom Lecture Topic** |  | **Project Introduction** |
| **Assignments Due**  | **Prelab 8 & Lab 7 Results** |  |
| **Lab Activity**  | **Do Lab 8** |  |
|  | **19th MAR** | **21th MAR** |
| **Lab and Classroom Lecture Topic** |  |  |
| **Assignments Due**  | **Lab 8 Results, Brainstorming exercise\*** | **Project and Proposal** |
| **Lab Activity**  | **Project Initial Exercises\*** |  |
|  | **26th MAR** | **28th MAR** |
| **Lab and Classroom Lecture Topic** |  | **In-class Exam** |
| **Assignments Due**  | **Proposal Presentation, Logbook Pages\*** |  |
| **Lab Activity**  | **Project Work and logbook checks** |  |
|  | **2nd APR** | **4TH  APR**  |
| **Lab and Classroom Lecture Topic** |  | **Proj. Summary and activity** |
| **Assignments Due**  | **Logbook Pages\*** |  |
| **Lab Activity**  | **Project Work**  |  |
|  | **9th APR** | **11th APR** |
| **Lab and Classroom Lecture Topic** |  | **No Lecture** |
| **Assignments Due**  | **Logbook Pages\*** |  |
| **Lab Activity**  | **Project Work**  |  |
|  | **16th APR** | **16th APR** |
| **Lab and Classroom Lecture Topic** |  | **No Lecture** |
| **Assignments Due**  | **Logbook Pages\*** |  |
| **Lab Activity**  | **Project Demos** |  |
|  | **23rd APR** | **23rd APR** |
| **Lab and Classroom Lecture Topic** | **No Lecture & lab** | **Design Summary\*\*****(all due Tuesday)** |
| **Assignments Due**  |  |
| **Lab Activity**  |  |
| **There is no final exam in ECE2031** |
| **Prelab quizzes are given when the prelab work is due; e.g. 15th JAN for quiz 1.** |
| **\* See course announcements and website for details about these assignments** |