ELEC 4708: Advanced Digital Integrated Circuits

Objectives

Lectures
Analysis, Design and Implementation of Modern VLSI Circuits and Systems

Labs
Use of a Modern IC Technology and Professional Cadence Tool for Designing a Circuit from a Functional Description to Final Chip Layout

Expected Learning Outcome

- VLSI Functionality, Speed, Energy and Reliability
- Device, Circuit, Logic and System Level Design
- Circuit Simulation, Layout Editor, HDL Design (RTL) and Chip Tape-out

Marking Scheme

Attendance and performing all labs are mandatory.

Laboratory 25%
- Not doing a single lab equals failure in course.
- No lab exemptions are given.
- Lab reports should be submitted online.

Assignments 5%
- Expect 3 to 5

Midterm Exam 20%
- Tuesday 2 Nov 2021
- Final Exam paper is for evaluation only and will not be returned to students.

Final Exam 50%
- Students must pass the final exam to pass the course.
E-Proctoring: Please note that tests and examinations in this course will use a remote proctoring service provided by Scheduling and Examination Services. You can find more information at https://carleton.ca/ses/e-proctoring/.

The minimum computing requirements for this service are as follows:
Hardware: Desktop, or Laptop
OS: Windows 10, Mac OS 10.14, Linux Ubuntu 18.04
Internet Browser: Google Chrome, Mozilla Firefox, Apple Safari, or Microsoft Edge
Internet Connection (High-Speed Internet Connection Recommended)
Webcam (HD resolution recommended)

Note: Tablets, Chromebooks and Smartphones are not supported at this time. Windows-based tablets are not supported at this time.