CSC258: Computer Organization Winter 2022

This course provides an introduction to the underlying digital structures of computers. Topics include digital logic representation and design, computer system organization and microprogramming.

Instructor Information

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** please write "CSC258" in the subject header of your emails.*

*** email your instructor if appointments outside this time are required.*

Course Information

Information pertaining to this course will be available on Quercus. The course website will have course announcements & materials, discussion boards, relevant readings, as well as assignment, lab & project details. Announcements will be made through the email you register on Quercus, but the site is required reading, and it is understood that you will check it multiple times a week.

Important Dates

Week	Topics	Milestone(s)
Jan 10 – 14	Overview, transistors, basic logic gates	
Jan 17 – 21	Combinational circuit design, K-maps	
Jan 24 – Jan 28	Logical devices (muxes, adders, decoders)	Lab 1
Jan 31 – Feb 4	Latches & flip-flops	Lab 2
Feb 7 – Feb 11	Registers, counters, finite state machines	Lab 3
Feb 14 – Feb 18	Finite state machine design	Lab 4
Feb 21 – Feb 25	<< ***Reading Week*** >>	
Feb 28 – Mar 4	Registers, memory (RAM & ROM)	Lab 5
Mar 7 – Mar 11	Architecture & microprogramming	Lab 6
Mar 14 – Mar 18	Assembly language basics	Lab 7
Mar 21 – Mar 25	Assembly language program design	
Mar 28 – Apr 1	Advanced assembly language	Project demo 1
Apr 4 – 8	Pseudoinstructions, interrupts, course review	Project demo 2

Lateness is generally not accepted, except in cases of medical or similar emergency. Lateness due to personal reasons must be brought to the instructor for consideration, as early as possible.

Discussion Board

Piazza site: https://piazza.com/utoronto.ca/winter2022/csc258h1s

We will be using Piazza for class discussions. For questions related to course content, please post on Piazza instead of emailing them to the instructor. Questions of a more personal nature are better through email. If you have any problems with the Piazza platform, please email team@piazza.com.

Mark Breakdown

Component	Weight
Labs	42% (7 total, 6% each)
Project	20%
Final Assessment	38% (*you must get 50% on the final to pass the course)*

- **Lectures & Office Hours:**
  - The lectures will be online and synchronous until the assembly language topic, at which point the classroom will change to a flipped model (recorded lectures + in-class examples).
  - The expectation is that you attend class during the lecture time. We plan to record the lectures, but cannot guarantee this since technical issues can interfere with the recordings.
- **Labs:**
  - The labs are weekly practical exercises that are demonstrated to a TA during the online lab session.
  - Pre-lab reports are mandatory for each lab, and must be submitted on Quercus before 5pm on the day of your lab session, along with any code developed for that lab. Students who fail to do this will not be allowed to perform their demos during the lab session.
  - In-class tutorial sessions will be used to discuss upcoming lab work.
- **Project:**
  - A large assembly language project takes place during the last month of the course. Marks are also given for successful implementation, innovative design and creativity.
  - Project demos are performed in the lab sessions of the course, and are worth 20% total.

Students work individually for both labs and the project.

Course Textbooks

Recommended:	Mano, Kime, *Logic and Computer Design Fundamentals*, 4th ed., Prentice Hall, 2008
Other texts:	Hamacher, Vranesic, Zaky, *Computer Organization*, 5th ed., McGraw Hill, 2002 Null, Lobur, *The Essentials of Computer Organization and Architecture,* 3rd ed., Jones & Bartlett Publishing, 2012

Administrative Details

Please don't plagiarise other people's work. If you need clarification on the university's policies on plagiarism, consult the *Code of Behaviour on Academic Matters*: www.artsci.utoronto.ca/osai/students.

We will be applying plagiarism software such as Ouriginal and MOSS on all lab submissions for a review of textual similarity and detection of possible plagiarism. In doing so, students will allow their code to be included as source documents in the tool's reference database, where they will be used solely for the

purpose of detecting plagiarism. The terms that apply to the University's use of this tool are described on the Centre for Teaching Support & Innovation web site (https://uoft.me/pdt-faq).

This course, including your participation, will be recorded on video and will be available to students in the course for viewing remotely and after each session. Course videos and materials belong to your instructor, the University, and/or other source depending on the specific facts of each situation, and are protected by copyright. In this course, you are permitted to download session videos and materials for your own academic use, but you should not copy, share, or use them for any other purpose without the explicit permission of the instructor. For questions about recording and use of videos in which you appear please contact your instructor.