

# CSC258: Computer Organization Winter 2023

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 registered on Quercus, but the site is required reading, and it is understood that you will check it multiple times a week.

## Mark Breakdown

Component	Weight
Labs	28% (7 total, 4% each)
Project	15%
Midterm exam	19% (closed-book)
Final exam	38% (also closed-book) → you must get 40% on the final to pass the course

### • Labs:

- The labs consist of hands-on lab exercises that take place in BA3145, BA3155 & BA3165. Lab exercises must be completed and shown to the TA before the end of the lab session.
- Pre-lab reports are mandatory for each lab, and must be submitted online before attending the lab session. Students who fail to do this will not be allowed to do the lab.
- Labs take place every week for two months, starting in the second week of class (see dates below).
- Tutorial sessions will be used to discuss the upcoming lab work.

### • Project:

- A large assembly language project for the last month of the course. Marks are given for successful implementation of five milestones, with extra credit for innovation and creativity.
- Project demos are performed in the lab, with each milestone worth 3% each.

Students are **required** to work in pairs for the labs, but work individually for the project.

## Important Dates

Week	Topics	Milestone(s)
Jan 9 – 13	Overview, transistors, basic logic gates	
Jan 16 – 20	Combinational circuit design, K-maps	Lab 1
Jan 23 – 27	Logical devices (muxes, adders, decoders)	Lab 2
Jan 30 – Feb 3	Latches & flip-flops	Lab 3
Feb 6 – 10	Registers, counters, finite state machines	Lab 4
Feb 13 – 17	Finite state machine design, midterm review	Lab 5
Feb 20 – 24	<b>-- Reading Week --</b>	
Feb 27 – Mar 3	ALUs, registers, memory	Midterm exam*
Mar 7 – 10	Architecture & microprogramming	Lab 6
Mar 13 – 17	Assembly language basics	Lab 7
Mar 20 – 25	Assembly language program design	
Mar 27 – 31	Advanced assembly language	Project demo #1
Apr 3 – 7	Assembly functions & recursion	Project demo #2

\*The midterm is tentatively scheduled for Wed Mar 1 from 6pm - 8pm.

Please report any conflicts to the course email by Feb 1, along with your course schedule.

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

## Course Textbooks

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

## Administrative Details

Plagiarism is very bad. Please don't do it. It just makes things unpleasant for everybody involved. In case you need clarification on the university's policies on plagiarism, please consult the *Code of Behaviour on Academic Matters* from this website: [www.artsci.utoronto.ca/osai/students](http://www.artsci.utoronto.ca/osai/students)

Feedback on the course is solicited during end-of-term evaluations. However, feedback before that point is encouraged, to improve the delivery of the course. Please make sure your concerns are voiced to the course instructor or the teaching assistants whenever possible.