

CSC258: Computer Organization Fall 2020

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

Name	Office	Phone	Email
Steve Engels	BA4266	(416) 946-5454	sengels@cs.toronto.edu *
Wednesdays 2pm-3pm, Thursdays 8pm-9pm **			

* 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.

Mark Breakdown

Component	Weight
Labs	42% (7 total, 6% each)
Project	20%
Final Assessment	38% (take-home, open book) → you must get 50% on the final to pass the course

• Lectures:

- o Zoom session: <https://utoronto.zoom.us/j/5546086241> password: 112358
- o The lectures will be online and synchronous. You are expected to attend during the lecture time. While we plan to record the lectures, technical issues may occasionally interfere with the recording.

• Labs:

- o The labs consist of practical exercises that are completed each week and demonstrated to a TA during the online lab session.
- o Pre-lab reports are mandatory for each lab, and must be submitted on Quercus the day before the lab along with the code developed for that week. Students who fail to do this will not be allowed to perform their demos during the lab session.
- o Labs take place every week for two months, starting in the second week of class (see dates below).
- o Tutorial sessions will be used to discuss the upcoming lab work.

• Project:

- o 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.
- o Project demos are performed in the last lab session of the course, and is worth 20%.

Students will work individually for both labs and the project.

Important Dates

Week	Topics	Milestone(s)
Sept 10 – 18	Overview, transistors, basic logic gates	
Sept 21 – 25	Combinational circuit design, K-maps	Lab 1
Sept 28 – Oct 2	Logical devices (muxes, adders, decoders)	Lab 2
Oct 5 – Oct 9	Latches & flip-flops	Lab 3
Oct 13 – 16	Registers, counters, finite state machines	Lab 4 (<i>no class on Thanksgiving</i>)
Oct 19 – 23	Finite state machine design	Lab 5
Oct 26 – 30	Registers, memory (RAM & ROM)	Lab 6
Nov 2 – Nov 6	Architecture & microprogramming	Lab 7
Nov 9 – 13	-- Reading Week --	
Nov 16 – 20	Assembly language basics	
Nov 23 – 27	Assembly language program design	
Nov 30 – Dec 4	Advanced assembly language	Project demo #1
Dec 7 – 10	Topic overflow & 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/fall2020/csc258>

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.

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 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. We will be applying plagiarism software such as Turnitin and MOSS on all lab submissions to ensure academic integrity.

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