CSC258: Computer Organization   Winter 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
Maziar Goudarzi	PT374F	(416) 978-7729	goudarzi@ece.utoronto.ca *
	Monday 10:00a-12:00p **		**Web:** http://sharif.ir/~goudarzi
Marshall Ho	BA2283	N/A	marshall.ho@utoronto.ca *
	Monday 3:30p – 5:30p **		

* 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	14% (2% proposal + three 4% demos)
Midterm exam	18% (closed-book)
Final exam	40% (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 ahead of 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 design project for the last month of the course, created using the principles covered in labs and lectures. Marks are also given for successful implementation, innovative design and creativity.
  - Project proposal document is worth 2%, and is submitted in the same week of Lab 6.
  - Project demos are performed in the lab, and are worth 4% each.

  Students are **required** to work in pairs for the labs and the project.

Important Dates

Week	Topics	Milestone(s)
Jan 6 – 10	Overview, transistors, basic logic gates	
Jan 13 – 17	Combinational circuit design, K-maps	Lab 1
Jan 20 – 24	Logical devices (muxes, adders, decoders)	Lab 2
Jan 27 – 31	Latches & flip-flops	Lab 3
Feb 3 – 7	Registers, counters, finite state machines	Lab 4
Feb 10 – 14	Finite state machine design, midterm review	Lab 5
Feb 17 – 21	*-- Reading Week --*	
Feb 24 – 28	ALUs, Registers, memory	Midterm exam*
Mar 2 – 6	Architecture & microprogramming	Lab 6 & Project proposal
Mar 9 – 13	Assembly language basics	Lab 7
Mar 16 – 20	Assembly language program design	Project demo #1
Mar 23 – 27	Advanced assembly language	Project demo #2
Mar 30 – Apr 3	Assembly functions & recursions	Project demo #3 & project report

*The midterm will be on Feb 26, 7pm-9pm in SS1071, SS 1083, SS 1087, WI 1016, WI 1017. Please report conflicts to your instructor by Jan 31, with your schedule of alternate writing times.

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, *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 Patterson, Hennessey, *Computer Organization and Design, the MIPS Edition*, 5th ed., Morgan Kaufmann, 2013

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

Feedback on the course is solicited during midterm and 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.