

Outline



Course Outline Highlights

Computer Science Department

CS2208b: Introduction to Computer Organization and Architecture

Winter 2020-2021

Instructor: Mahmoud R. El-Sakka

Office: MC-419

Email: elsakka@csd.uwo.ca

Phone: 519-661-2111 x86996

Instructor and Teaching Assistance

■ *Instructor*

- Professor *Mahmoud El-Sakka*
~~Middlesex College, Room 419~~
~~Phone: 519-661-2111 x86996~~
Email: *elsakka@csd.uwo.ca*

- *Office hours*

(via Zoom at Western): Tuesday from 12:30 pm to 2:30 pm (tentative)
Thursday from 12:30 pm to 1:30 pm (tentative)

■ *Graduate Teaching Assistance (TA)*

- TBA

Course Schedule

■ *Lectures Time & place:*

- 3 hours of asynchronous online lectures per week

■ *Tutorials Time & place:*

- 1 hour of asynchronous online tutorial per week

■ *Labs Time & place:*

- 1 hour of asynchronous online lab per week

Labs start from the week of Monday, February 22, 2021

Weekly course material will be posted once a week, likely on each Sunday.

Course Website

- Course material and class information will be posted on the Online Western's Learning (**OWL**) system (<https://owl.uwo.ca>)
- You are responsible for reading this information frequently
- For **OWL** related assistance, please read the course outline [Section H](#)

Course Description

- This course will let you understand the basics and fundamentals of computer *organization* and *architecture*, i.e., *how a computer works* and *what a computer does*
- The course covers
 - the internal representation of various data types, e.g., characters, integers, and floating-points.
 - the addition and subtraction operations and how they are internally performed.
 - the architectural components of digital computers, how these components are interconnected, and the nature of the information flow between them.
- ARM assembly language is used to reinforce these issues.

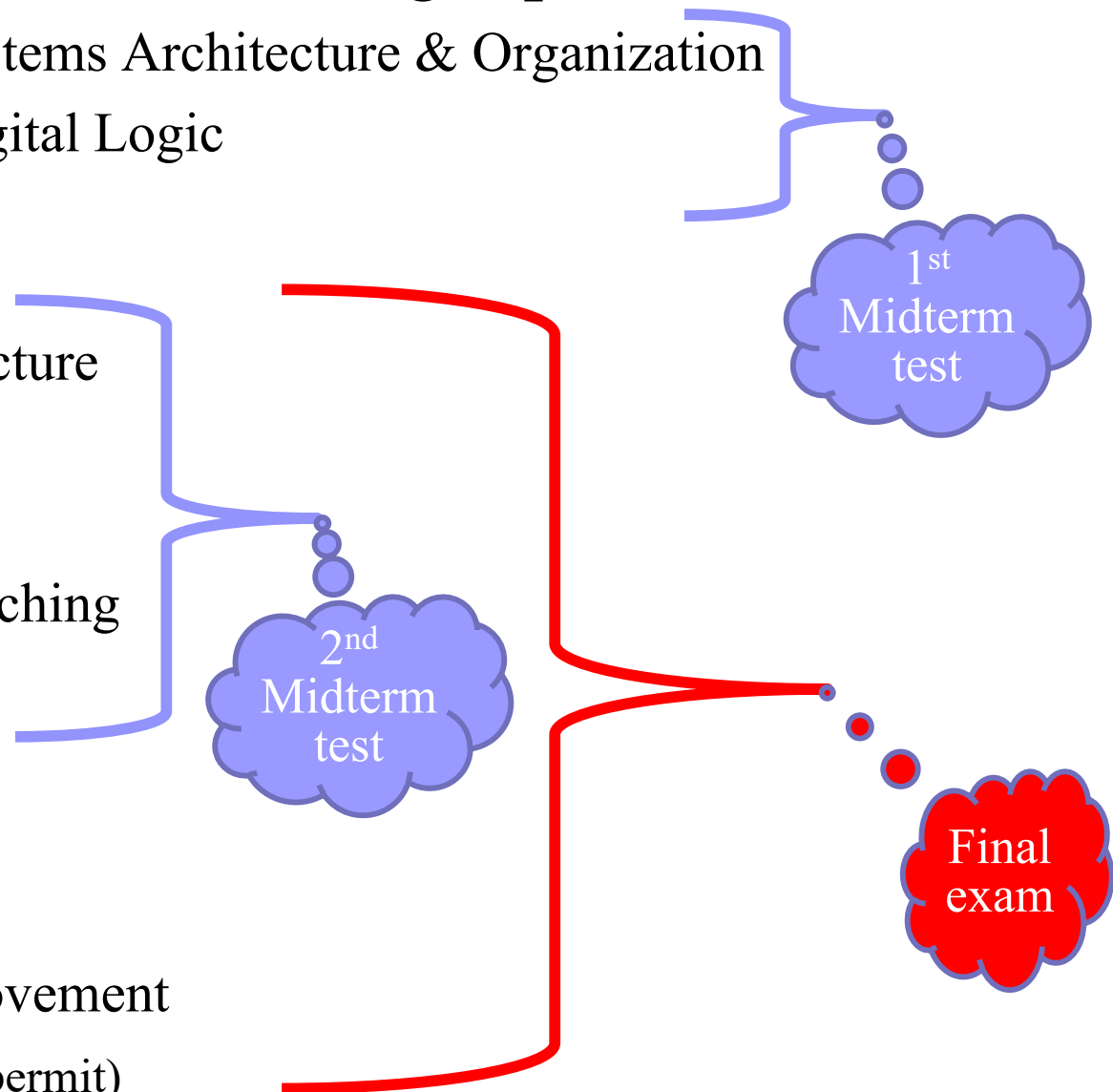
Course Topics

■ Will address as many of the following topics:

- ☐ Introduction to Computer Systems Architecture & Organization
- ☐ Computer Arithmetic and Digital Logic
- ☐ Floating Point Numbers

- ☐ ARM Instruction Set Architecture
- ☐ ARM Assembly Language
- ☐ ARM Data Processing
- ☐ ARM Flow Control and Branching
- ☐ ARM Addressing Modes

- ☐ Subroutine Call and Return
- ☐ Data Storage and the Stack
- ☐ Data Processing and Data Movement
- ☐ Computer Performance (if time permit)



Prerequisites

- Computer Science 1027a/b, 1037a/b, or 2101a/b
 - with a grade of at least 65%

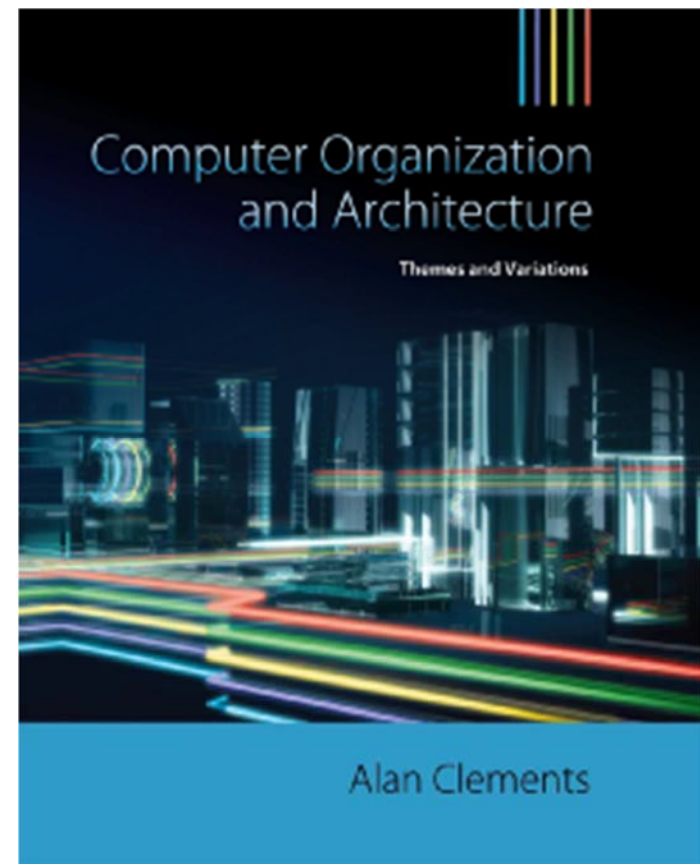
or

- Integrated Science 1001X
 - with at least 60%

- *Students are responsible for ensuring that they have the stated prerequisites for this course*
- *Students are assumed to be familiar with a high-level programming language and with data structures such as stacks and queues.*

Textbook

- Alan Clements,
 - *Computer Organization & Architecture: Themes and Variations*
Cengage Learning, ISBN: 978-1-111-98704-6, ©2014
https://bookstore.uwo.ca/textbook-search?campus=UWO&term=W2020B&courses%5B0%5D=001_UW/CSC2208B
- The book is required
- For more information about bookstore, please read the course outline [*Section G*](#)



Technical Requirements and Online Etiquette

- CS2208 is an online course.
- It is the student's responsibility to secure access to
 - a computer with a working microphone and webcam, and
 - a stable internet connection.
- Students also need to be able to install a Windows-based simulator software.
 - MAC users will need first to install Fusion VMware software; for more information, see course outline [Section J](#)
- Besides, students need to honour the online etiquette rules; for more information, see course outline [Section K](#)

How much will I learn from this course?

- Depends on how much effort you will put.
 - No pain → no gain
- You need to allocate *on average* **10 hours per week** for studying the CS2208 material
- As an anchor, start at the “**WEEK BY WEEK**” Section

Methods of Evaluation

- The overall course grade will be calculated as listed below:
 - 12.0%: Assignments (*the average of the best 4 assignments out of 5*)
 - 9.0%: Weekly quizzes (*the average of the best 9 quizzes out of 10*)
 - 7.5%: Labs (*the average of the best 5 labs out of 6*)
 - 15.5%: First midterm test
 - 20.0%: Second midterm test
 - 36.0%: Final exam

To be eligible to receive a passing grade in the course

- your total marks on the two midterm tests and the final exams must be at least 50% (*i.e., at least 35.75*)

To be eligible to receive a grade of 60% or higher (i.e., to be eligible for Honors Programs) in the course

- your total marks on the two midterm tests and the final exams must be at least 60% (*i.e., at least 42.9*)

Assignment/Lab/Quiz Conduct

- There will be
 - ☐ 5 equally weighted online assignments
 - ☐ 10 equally weighted online quizzes
 - ☐ 6 equally weighted online labs
- For tentative assignment/quiz/lab schedule, please read the course outline [Section M](#), [Section N](#), and [Section O](#)
- Assignments/labs/quizzes are due at 23:55 of the due date
- All submission will be submitted *electronically*
- Late submissions are ***strongly discouraged***
 - ☐ *10% will be deducted from a late submission (up to 24 hours after the due date/time)*
 - ☐ After 24 hours from the due date/time, late submission will receive a ***zero*** grade

Assignment/Lab/Quiz Conduct

- Assignments/labs/quizzes will be marked either automatically or by the Teaching Assistant(s), who follow marking schemes provided by the instructor.
- Every effort will be made to have assignments/labs/quizzes marked within 3 weeks of the hand-in date, preferably sooner
- When marking an assignment/lab/quiz is completed, you will be informed via the course website and/or email

Assignment/Lab/Quiz Conduct

- A request for a mark adjustment must be made within 2 weeks following the first handed-back day
 - For assignments/labs/quizzes that are automatically marked, you can send your related questions directly to the instructor.
 - For assignments/labs/quizzes that are marked by the Teaching Assistant(s), you should direct any questions about marking in the first instance to your Teaching Assistant.
 - If your discussion with the Teaching Assistant is not satisfactory, you may want to further discuss the issue with the course instructor.
- *All assignments/labs/quizzes marks are considered final after 2 weeks*

Assignment/Lab/Quiz Conduct

- Assignments/labs/quizzes are to be done individually
 - ☐ **Never** let others look at your work
 - ☐ **Do not** ask to look at others' work
 - ☐ We use automated tools to screen for cheating
- You should read the definition and penalties of scholastic offences at:
www.csd.uwo.ca/undergraduate/current/policies/scholastic_offenses.html
- Students are expected to adhere to the Rules of Ethical Conduct to use the computing facilities of the Department:
www.csd.uwo.ca/undergraduate/current/policies/ethical_conduct.html

Midterm tests and Final exam

- *Tests and examinations in this course will be conducted using the **remote proctoring service, Proctortrack**.*
- *By taking this course, you are **consenting** to the **use of this software and acknowledge that you will be required to provide personal information (including some biometric data), and the session will be recorded**.*
- *More information about this remote proctoring service is available in the Online Proctoring Guidelines at the following link:*
www.uwo.ca/univsec/pdf/onlineproctorguidelines.pdf.

Midterm tests and Final exam

- *Completion of this course will require you to have a reliable internet connection and a device that meets the technical requirements for this service.*
- *Information about the technical requirements is available at the following link:*
www.proctortrack.com/tech-requirements/.

Accommodations and Support Services

- Please read the course outline for more information about:
 - *Accommodation Policies* ([Section S](#))
 - *Academic Accommodation for Student Absence* ([Section T](#))
 - *Religious Accommodation* ([Section U](#))

- *Support Services* ([Section W](#))