Intro Assembly Lang & Op Sys
Computer Science
2023 Winter

Instructor Information

Instructor: Dr. Amin Safaei
Office Location: TBA
Telephone: TBA
E-mail: asafaei@lakeheadu.ca
Office Hours: Monday and Wednesday at 12:00 pm to 1:00 pm (by email appointment)

Teaching Assistant (TA) Information:
TBA

Course Identification

Course Number: COMP-2476-WA
Course Name: Intro Assembly Lang & Op Sys
Course Location: **Zoom**
Class Times: **Tuesday** 6:00PM - 8:00PM
Prerequisites: Computer Science 1431

Course Number: COMP-2476L-W1
Course Name: Lab for Comp 2476
Course Location: **Zoom**
Class Times: **Friday** 8:30AM - 10:30AM
Prerequisites: N/A

Course Description/Overview

Assembly-level machine organization. Memory system organization and architecture. Writing simple I/O routines and interrupt handlers. Introduction to initialization and process management in a Unix or Unix-like operating system.

Course Outline

1. To apply knowledge of computing and/or mathematics appropriate to the discipline.
2. To understand the Intel 80x86 Processor Family Instruction set and its basic architecture.
3. To understand the Assembly Language Fundamentals, procedures, parameter passing and stack operations.

4. To implement conditional processing, and integer arithmetic.
5. To be able to write assembly language to create both system level software tools and application programs.
6. To understand the process management (processes and threads)

Course Resources

Course Website(s)

- myCourseLink

Required Course Text(s)

- The instructor will provide the students with class notes, slides, and other study materials.

Additional text

- Barry B. Brey, The Intel Microprocessor: Architecture, Programming, and Interfacing, eight edition, Prentice Hall India, 2008.
- M. A. Mazidi, R. D. McKinlay, J. G. Mazidi, 8051 Microcontroller, The: A Systems Approach

Software environment

- All the software used in this course is either open source or available in the computer labs.
- See D2L for the details.

Take-Home Assignments:

- There will be two assignments this term that **must submit through d2l (mycourselink).**
- **Sending assignment to instructor email or TAs will not evaluate and receive 0.**
- **Late submission is not accepted.**

Assignments and Evaluations

• Assignment: (10+10)	20%
• Mid-term exam (Closed book)	20%
• Final exam (Closed book)	40%
• Lab (Report)	10%
• Attendance and Pop Quizzes	10%

Attendance:

- Regular attendance at lectures as well as active participation in classroom discussions is an important factor for student success. The successful student must develop good note-taking skills and be willing to ask questions.

- The attendance of lectures with the submission of pop quizzes will contribute 10% to the final grade.

Course Schedule/Outline

Week	Description	Date Wednesday
1	Basic Concepts	JAN 10, 2023
2	Processor Architecture	JAN 17, 2023
3	Assemble Language Fundamentals	JAN 24, 2023
4	Data Transfer Addressing, and Arithmetic	JAN 31, 2023
5	Procedures	FEB 7, 2023
6	Conditional Processing	FEB 14, 2023
7	Study Week – No Classes	FEB 21, 2023
8	Midterm Exam	FEB 28, 2023
9	Integer Arithmetic	MAR 7, 2023
10	Advanced Procedures	MAR 14, 2023
11	Process Management	MAR 21, 2023
12	Processes and	MAR 28, 2023
13	Threads	APR 4, 2023
	Review and Problem Solving	APR 11, 2023

Course Policies

- behavioral standards (this could be a reference to the Student Code of Conduct - Academic Integrity)
- attendance,
- safety regulations (e.g. completion of WHMIS training for lab work, PPE, etc.)
- netiquette (e.g. set guidelines about how students should communicate with you including hours of availability, reasonable response time, subject headings, salutation, etc.),

Academic Integrity Statement (Exam/Assignment Integrity)**:**
I understand and agree that:

(1) Unless otherwise allowed by the course instructor, I must complete the assignments in this course without the assistance of anyone else.

(2) Unless otherwise allowed by the course instructor, I must not access any sources or materials (in print, online, or in any other way) to complete any course exam.

I further understand and agree that, if I violate either of these two rules, or if I provide any false or misleading information about my completion of course assignments or exams, I may be prosecuted under the Lakehead University Student Code of Conduct – Academic

Integrity, which requires students to act ethically and with integrity in academic matters and to demonstrate behaviours that support the University's academic values.

Copyright
Students should be aware that all instructional, reference, and administrative materials prepared for this course are protected in their entirety by copyright. Students are expected to comply with this copyright by only accessing and using the course materials for personal educational use related to the course, and that the materials cannot be shared in any way, without the written authorization of the course instructor. If this copyright is infringed in anyway, students may be prosecuted under the Lakehead University Student Code of Conduct – Academic Integrity, which requires students to act ethically and with integrity in academic matters and to demonstrate behaviours that support the University's academic values.

Copyright Compliance (D2L):
I understand and agree that all instructional, reference, and administrative materials to which I am given access in this course (the "course materials"), whether they consist of text, still or kinetic images, or sound, whether they are in digital or hard copy formats, and in whatever media they are offered, are protected in their entirety by copyright, and that to comply with this copyright and the law

(1) I may access and download the course materials only for my own personal and non-commercial use for this course; and

(2) I am not permitted to download, copy, or store (in any medium) any text, image, or sound component of the course materials for any other purpose whatsoever, or to forward or share, transmit, broadcast, show, post or play in public, adapt, or change in any way any text, image, or sound component of the course materials, except as expressly authorized, and only to the extent authorized, in writing, by the course instructor."

I further understand and agree that, if I infringe the copyright of the course materials in any way, I may be prosecuted under the Lakehead University Student Code of Conduct – Academic Integrity, which requires students to act ethically and with integrity in academic matters and to demonstrate behaviours that support the University's academic values.

Regulations
It is the responsibility of each student registered at Lakehead University to be familiar with, and comply with all the terms, requirements, regulations, policies and conditions in the Lakehead University Academic Calendar. This includes, but is not limited to, Academic Program Requirements, Academic Schedule of Dates, University and Faculty/School Policies and Regulations and the Fees and Refund Policies and Schedules (Lakehead University Regulations webpage, 2020-21).

Academic Integrity
A breach of Academic Integrity is a serious offence. The principle of Academic Integrity, particularly of doing one's own work, documenting properly (including use of quotation

marks, appropriate paraphrasing and referencing/citation), collaborating appropriately, and avoiding misrepresentation, is a core principle in university study. Students should view the Student Code of Conduct - Academic Integrity for a full description of academic offences, procedures when Academic Integrity breaches are suspected and sanctions for breaches of Academic Integrity.

Supports for Students – there are many resources available to support students. These include but are not limited to:

- Health and Wellness
- Student Success Centre
- Student Accessibility Centre
- Library
- Lakehead International
- Indigenous Initiatives

Lakehead University is committed to achieving full accessibility for persons with disabilities. Part of this commitment includes arranging academic accommodations for students with disabilities and/or medical conditions to ensure they have an equitable opportunity to participate in all of their academic activities. If you are a student with a disability and think you may need accommodations, you are strongly encouraged to contact Student Accessibility Services (SAS) and register as early as possible. For more information, please contact Student Accessibility Services (SC0003, 343-8047 or sas@lakeheadu.ca