

Course Syllabus

CIS*3110 Operating Systems W (3-1) [0.50]
School of Computer Science, University of Guelph, Guelph
Winter Semester | 2019

Instructor Information

Instructor Name	Office	Phone	Email
Dr. Xiaodong Lin	Reynolds 2210	X53889	xlin08@uoguelph.ca
Office Hours: Monday/Wednesday, 3:30 pm - 5:00 pm or by appointment			

Course Overview and Objectives

This course gives an introduction to the basic concepts used to structure modern computer operating systems. More specifically, this course will primarily study general purpose, time-shared operating systems. It will introduce the core concepts of operating systems, such as processes and threads, scheduling, synchronization, memory management, file systems, input and output device management and security. At the completion of the course, the student will be able to discuss and evaluate synchronization control techniques, the structure of an operating system, and will additionally have some familiarity with system programming interfaces for synchronization, data sharing and control.

The course will consist of two parts, weekly lectures and a sequence of programming assignments. The goal of the lectures is to introduce the core concepts of Operating System. The goal of the programming assignments is to give students some exposure to operating system code. It offers students practical and theoretical knowledge and understanding of issues related to Operating System. Thus, an important part of the course will be the hands-on experience or programming assignments. For that, you will develop assignments in C on a Linux system to familiarize yourself with OS interfaces, key concepts, and design tradeoffs.

Prerequisite(s): [CIS*2520](#), and ([CIS*2030](#) or [ENGG*2410](#)).

Lectures

Day	Time	Location
Monday/Wednesday/Friday	11:30 am - 12:20 pm	ALEX, Room 200

Labs

Day	Time	Location
Wednesday	01:30PM - 02:20PM	MCKN, Room 238
Thursday	10:30AM - 11:20AM	MCKN, Room 233
Thursday	08:30AM - 09:20AM	MCKN, Room 238
Thursday	04:30PM - 05:20PM	MCKN, Room 238
Friday	01:30PM - 02:20PM	MCKN, Room 238

Textbook

Textbook

- Operating System Concepts, 9th Ed. Silberschatz, Galvin, Gagne, John Wiley & Sons. INC

Reference books

- The Linux Command Line. William Shotts.
Available at: <http://linuxcommand.org/tlcl.php>
- C Programming (Wikibook)
Available at: https://en.wikibooks.org/wiki/C_Programming
- Andrew Tanenbaum. Modern Operating Systems (4th Edition), Prentice Hall.
- Remzi H. Arpaci-Dusseau and Andrea C. Arpaci-Dusseau. Operating Systems: Three Easy Pieces
Available at: <http://pages.cs.wisc.edu/~remzi/OSTEP/>

Course Topics:

Introduction

Processes and inter-process communication and synchronization

CPU scheduling

Concurrency

Memory management

File systems

Deadlock detection and prevention

Protection and Security

Distributed Computing

Course Information

Course information for CIS*3110 Operating Systems is posted on **Courselink**. It is the student's responsibility to check these pages frequently for new information or updates.

Evaluation: In determining the overall grade of the course, the following weights will be used:

- Assignments: 45%, where
- Assignment 1: 15% Due Feb 6
- Assignment 2: 8% Due Feb 15
- Assignment 3: 10% Due March 8
- Assignment 4: 12% Due March 25
- Mid-term Exam: 20% Feb 27
- Final Exam: 35% TBA by Registrar

Important: Mastery of both the theoretical and applied material in this course must be demonstrated. For this reason, you must pass both parts independently to pass the course, including the examination and assignment portions of this course. If you do not pass a part then your total grade cannot exceed the failed portion of your grade.

Assignments

- Note that deadlines for all assignments are provided above. Barring truly exceptional circumstances, submissions after the deadline will not be accepted, unless an extension has been negotiated in advance of the deadline date. Any work that is late without approval will receive zero.
- All assignments will be only be accepted via submission through **Courselink** unless otherwise indicated on the assignment by the instructor.
- Students may request a reassessment of their assignments in writing and specify the reasons for such requests. Their entire assignment will be reassessed and the reassessment may result in raising or lowering of the original marks.
- are to be your own work and collaboration is not permitted. Submission of program code for an assignment that is written by another person, or in collaboration with another person also constitutes Academic Dishonesty. Similarities between assignment submissions are monitored using the program MOSS (Measure of Software Similarity) as well as by manual means.
- More detail will be given in the course web page.

Exams

Course examinations will be based on material discussed in the course lectures. Simply reading the course notes will not be adequate preparation for the exams.

Homework and problem sets will be provided during the course and placed on the course website. Attempting these is one valuable tool for you to reinforce concepts that were taught

in class and assess your understanding of the course material, preparing yourself for exams. Note that these questions are just for your exercises. You don't need to submit your solutions for grading. Solutions are provided for these sets; be sure to try to answer the problems before looking at the solutions.

The exams are closed book and include a mix of multiple-choice, true/false, short answer, and programming questions.

Special Note:

- All cases of academic misconduct are handled by the Dean, in conjunction with the School Director. Successive infractions of misconduct affirmed by this process could have consequences as serious as expulsion from the University. For details please see related pages in the University of Guelph Undergraduate Calendar 2018-2019.
- Requests for academic consideration because of illness or of a compassionate nature must be made in writing and accompanied by certification whenever possible.

Standard Statements

The following are standard statements for inclusion on all course outlines (adapted with permission from the College of Arts). Some departments or colleges may also elect to post this information on a common website and link to such sites in the course outline. However, it is strongly recommended that statements on academic misconduct and links to the academic misconduct section of the academic calendars are included on all course outlines.

E-mail Communication

As per university regulations, all students are required to check their <mail.uoguelph.ca> e-mail account regularly: e-mail is the official route of communication between the University and its students.

When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the course instructor (or designated person, such as a teaching assistant) in writing, with your name, id#, and e-mail contact. [See the undergraduate calendar for information on regulations and procedures for Academic Consideration.](#)

Drop Date

Courses that are one semester long must be dropped by the end of the fortieth class day; two-semester courses must be dropped by the last day of the add period in the second semester. The regulations and procedures for [Dropping Courses](#) are available in the Undergraduate Calendar.

Copies of out-of-class assignments

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

Accessibility

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the student.

When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required, however, interim accommodations may be possible while that process is underway.

Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability.

Use of the SAS Exam Centre requires students to book their exams at least 7 days in advance, and not later than the 40th Class Day. More information: www.uoguelph.ca/sas

Academic Misconduct

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community – faculty, staff, and students – to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it.

Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

[The Academic Misconduct Policy is detailed in the Undergraduate Calendar.](#)

Recording of Materials

Presentations which are made in relation to course work—including lectures—cannot be recorded or copied without the permission of the presenter, whether the instructor, a classmate or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

Resources

The [Academic Calendars](#) are the source of information about the University of Guelph's procedures, policies and regulations which apply to undergraduate, graduate and diploma programs.