

CIS*2750 Software Systems
Development and Integration
Winter 2018



School of Computer Science

1 INSTRUCTIONAL SUPPORT

Sections 01-02

Instructor: Dr. Denis Nikitenko
Office: MCLN 214
Email: dnikiten@uoguelph.ca
Office hours: Tuesday, Thursday 11:30AM-1:30PM

Pre-requisites: CIS*2430, CIS*2520
Credit Weight: 0.75

Teaching Assistants:
Jake Besworth
Roxanne Liu
Nicholas Macedo
Sijie Chen
Stefan Schneider
Email: ta2750@socs.uoguelph.ca
Office Hours: See lab times below

Timetable

Lectures:
Section 1: Monday, Wednesday, 05:30PM - 06:50PM, MCLN 102
Section 2: Tuesday, Thursday, 10:00AM - 11:20AM, MCKN 120

Lab times:
Section 1:
Tuesday 09:30AM - 11:20AM
Wednesday 07:00PM - 08:50PM
Thursday 07:00PM - 08:50PM

Section 2:
Tuesday 02:30PM - 04:20PM
Tuesday 07:00PM - 08:50PM
Thursday 12:30PM - 02:20PM

All labs are scheduled in THRN, Room 2420

Unless otherwise stated, lab times will be used for advising and consulting with the Teaching Assistants. Students do not have to come to their assigned lab, and may attend any lab if they have questions.

2 LEARNING RESOURCES

2.2 Course Website

Course material, news, announcements, and grades will be regularly posted to the CIS*2750 website which can be found at <https://courselink.uoguelph.ca/>. You are responsible for checking the site regularly.

- Lecture Information: Selected notes will be posted on the course website as instructors have time to make them available. You are expected to take your own notes during lecture.
- Labs and Tutorials: Selected tutorial and lab materials will be available on the course website.
- Assignments: Assignment descriptions are found on the course website. Assignments are submitted via the course website.

2.3 Required Textbook

Beginning Linux Programming, by Richard Stones and Neil Matthew, Wrox Press Ltd.

Programming Python, by Mark Lutz, O'Reilly Media.

2.4 Calendar Description

This course introduces techniques and tools used in the development of large software systems. Students learn methods for organizing and constructing modular systems, manipulating files, introductory interface design, and use of databases. Software tools for managing projects, database connectivity, configuration management, and system application programmer interfaces are also covered.

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: <http://www.uoguelph.ca/registrar/calendars/index.cfm?index>

3 ASSESSMENT

3.1 Dates and Distribution

<i>Assessments</i>
Assignments (5, 45%) <ul style="list-style-type: none">- Assignment 0 - 5%, Jan 12 (Not finalized yet, may be removed)- Assignment 1 - 10%, Jan. 26- Assignment 2 - 10%, Feb. 16- Assignment 3 - 10%, Mar. 9- Assignment 4 - 10%, Mar. 30
Midterm(25%) <i>Section 1:</i> Wednesday February 7, in class <i>Section 2:</i> Thursday February, in class
Final exam (30%) - Friday, April 20, 07:00PM - 09:00PM Room TBA
Bonus clicker participation - 5%

Students found committing **clicker fraud** will be handled according to the policy on academic misconduct, and are liable to forfeit their bonus mark. Possession of multiple clickers will be taken as *prima facie* evidence of fraud involving the actual owners of the clickers.

Assignments are due at 11:55pm on the due date via electronic submission.

Students **must** complete the SOCS Academic Integrity Unit (see Section 6 below) before submitting their first assignment. Assignment submissions will not be graded until a student has completed the SOCS Academic Integrity Unit.

3.1.1 Final grade calculation

In order to pass the course, you must submit your assignments on time and pass **both** the assignment and the test components of the course.

If you fail either the assignment component or the test component, your course grade will be the grade for the failed component. For example, if you get 21/45 (~47%) on the assignments and 30/55 (~54%) on the tests, you fail the course and your course grade is 47. If you fail both the assignment and the test components, your grade will be calculated as usual.

Your clicker grade will be added to the lowest-graded component. So if, you get 21/45 (~47%) on the assignments and 30/55 (~54%) on the tests, as well as full clicker marks (100%, or 5/5) the clicker grade is applied to the assignment. The assignment grade is now $21+5 = 26$, or 58%, and you pass the course.

Please note that the maximum course grade cannot exceed 100%. If the clicker mark results in a grade over 100%, your course grade will be capped at 100%.

3.2 Course Grading Policies

Development environment: Systems and software are provided in the labs for use in assignments. Students who choose to develop their assignments on other systems and/or with other versions of software are fully responsible for ensuring compatibility with the lab systems for marking purposes.

Individual work: Assignments must be carried out by individuals; there are no group projects in this course.

Extensions: Due date extensions are only declared for catastrophic reasons such as server failures and snow closures. Assignments and midterms in other courses are not grounds for extensions.

Late Assignments: All assignments are due at 11:55pm on the due date. Late assignments will be accepted for 48 hours after the deadline and penalized at 2% per hour. For example, assignment due at 11:55pm on Friday will still be accepted at 11:55pm on Sunday. Assignments that are more than 48 hours late will not be accepted, and will automatically receive the grade of **zero** (0). See below for compassionate exceptions.

Compiler errors/warnings: Program code which does not compile will not be accepted for marking and a grade of **zero** (0) will be assigned. Code that does not compile “clean” will lose marks for compiler warnings. Code **must** compile and run on the SoCS servers.

Submission errors: Failure to submit assignments correctly (e.g., incorrect file names, faulty/missing makefile, bungled use of subversion, etc.) will result in a mark penalty.

Regrades: Requests for regrades of assignments/quizzes/midterm must be made within 5 business days of receiving your mark. Regrade requests must be made in person or emailed to TA.

Missed Assessments: If you are unable to meet an in-course requirement due to medical, psychological, or compassionate reasons, please make an appointment to meet your course instructor. Please see below for specific details and consult the undergraduate calendar for information on regulations and procedures for Academic Consideration:

<http://www.uoguelph.ca/registrar/calendars/undergraduate/current/co8/co8-ac.shtml>

Accommodation of Religious Obligations: If you are unable to meet an in-course requirement due to religious obligations, please email the course email address within two weeks of the start of the semester to make alternate arrangements. See the undergraduate calendar for information on regulations and procedures for Academic Accommodation of Religious Obligations:

<http://www.uoguelph.ca/registrar/calendars/undergraduate/current/co8/co8-accomrelig.shtml>

3.3 Course Learning Outcomes

1. Practice effective strategies for learning to use new software frameworks, methodologies, and programming languages.
2. Construct software components that adhere to provided specifications.
3. Integrate software components written in different programming languages to create a software system.
4. Design and implement software libraries.
5. Demonstrate systematic quality assurance and software testing techniques.
6. Employ a database or a file-based back end to implement data storage for an interactive program.
7. Identify and apply appropriate human-computer interaction techniques to the design of a graphical user interface.

4 TEACHING AND LEARNING ACTIVITIES

4.1 Lecture and Lab Schedule

Lectures	Lecture Topics	Tests	Assignments
Week 1	Course Introduction Programming style; advanced programming concepts in C		Assignment 0
Week 2	Using and designing software libraries		
Week 3	Testing and debugging, profiling and optimization		Assignment 1
Week 4	Advanced I/O operations; file I/O in C		
Week 5	Graphical user interfaces: design and evaluation	Midterm 1	
Week 6	Scripting languages: Python and JavaScript		Assignment 2
Break week			
Week 7	GUI tools and scripting languages		
Week 8	Regular expressions and parsing		Assignment 3
Week 9	Introduction to database design and SQL		
Week 10	Working with databases and SQL		
Week 11	Software standards and lifecycle		Assignment 4
Week 12	Special Topics		

4.4 Important Dates

Drop date: Friday, March 9
Final exam: Friday, April 20

5 ROLES AND RESPONSIBILITIES

5.1 Communication & Email Policy

Major announcements will be posted to the course website and the discussion forums. It is your responsibility to check the course website regularly. 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.

5.2 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, classmate or guest lecturer. Material recorded with permission is restricted to use for that course and may not be posted on any public space unless further permission is granted.

5.3 Instructor's Role and Responsibility to Students

The instructor's role is to develop and deliver course material in ways that facilitate learning for a variety of students. Selected notes will be made available to students on the course website but are not intended to be stand-alone. During lectures, the instructor will expand and explain the content of notes and provide example problems that supplement posted notes. Scheduled classes will be the principal venue to provide information and feedback for exams and assignments.

5.4 Students' Learning Responsibilities

Students are expected to take advantage of the learning opportunities provided during lectures, labs and help sessions. Students, especially those having difficulty with the course content, should also make use of other resources recommended by the instructor. Students who fall behind due to illness, work, or extra-curricular activities are advised to keep the instructor informed as early as possible. This will allow the instructor to recommend extra resources in a timely manner and/or provide consideration if appropriate.

6 ACADEMIC INTEGRITY

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. All students who take a SOCS course must pass the **Academic Integrity Self Test**.

For educational purposes, instructors impose conditions on assignments that may limit students' permission to collaborate with others or to utilize external sources (including, but not limited to, software, data, images, text, etc.). Any permitted utilization must be done with proper references. Aiding and abetting is a punishable offence; students must be careful not to help others commit offences by giving out solutions or providing to access computer accounts. Instructors may use automated tools to detect possible cases of academic misconduct.

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.

The Academic Misconduct Policy is detailed in the Undergraduate Calendar:

<http://www.uoguelph.ca/registrar/calendars/undergraduate/current/co8/co8-amisconduct.shtml>

The SOCS Academic Integrity Unit:

<http://moodle.socs.uoguelph.ca/course/view.php?id=2> Login with your central login credentials. The key to use is "imhonest".

7 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