

CIS\*2750 Software Systems  
Development and Integration  
Winter 2022



School of Computer Science

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## 1 INSTRUCTIONAL SUPPORT

**Section 01-02**

Instructor: Dr. Denis Nikitenko  
Office: TBA  
Email: [cis2750@socs.uoguelph.ca](mailto:cis2750@socs.uoguelph.ca)  
Office hours: By appointment only. Details will be posted on the course website. Note: Weekly hours may vary during the semester to better accommodate student demand and instructor availability.

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

Teaching Assistants:

Jordan Evans  
Indeep Farma  
Nadeem Howlander  
Izabela Savic  
Navdeep Singh

Email:  
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Office Hours: See lab times below

## **Timetable**

### **Lectures:**

Tues, Thur 11:30AM - 12:50PM ROZH, Room 102

Tues, Thur 04:00PM - 05:20PM MCKN, Room 117

While the course is offered online, the lectures will be delivered online as described in Section 2.1 below. Various live interactive activities will also be conducted online during the scheduled class times.

When / if the course is offered in-person, the lectures will be conducted in the rooms listed above.

### **Lab times:**

Tues 07:00PM - 08:50PM THRN, Room 2418

Wed 12:30PM - 02:20PM THRN, Room 2418

Wed 03:30PM - 05:20PM THRN, Room 2418

Wed 07:00PM - 08:50PM THRN, Room 2418

Thur 08:30AM - 10:20AM THRN, Room 2418

Fri 03:30PM - 5:20PM THRN, Room 2418

While the course is offered online, the labs will be delivered online as described in Section 2.2 below. Various live interactive activities will also be conducted online during the scheduled class times.

The lab times will be used for advising and consulting with the Teaching Assistants. Students will be able to schedule one-on-one virtual meetings with the Teaching Assistants. Details will be announced in class and on the course website.

When / if the course is offered in-person, the lectures will be conducted in the rooms listed above.

## **Disclaimer**

Please note that the ongoing COVID-19 pandemic may necessitate a revision of the format of course offerings, changes in classroom protocols, and academic schedules. Any such changes will be announced via Courselink and/or class email.

This includes on-campus scheduling during the semester, mid-terms and final examination schedules. All University-wide decisions will be posted on the COVID-19 website (<https://news.uoguelph.ca/2019-novel-coronavirus-information/>) and circulated by email.

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## 2 LEARNING RESOURCES

### 2.1 Course Website

Course material, news, announcements, and grades will be regularly posted to the CIS\*2750 website which can be found at [courselink.uoguelph.ca](http://courselink.uoguelph.ca). You are responsible for checking the site regularly.

- **Online instruction (while mandated by the University)**
  - The instructor will **lecture live** on **Tuesday/Thursday at 11:30am**, record the lectures, and post them right away. Lecture slides will also be posted.
  - The 11:30am lecture recording will be available to all students in the class, regardless of what section they are in.
  - There will **not** be any live lectures on **Tuesday/Thursday at 4:00pm**, since the recordings will be posted by then. Instead, the 4pm class times will be used solely for Q&A sessions and other similar activities. The 4pm Q&A sessions will also be recorded and posted on the course website for the entire class.
  - All interactive components – Q&As, live demos, bonus iClicker quizzes etc. – will be done live in **all** class periods, so that students from all sections have the same opportunity to participate and ask questions.
  - Any left-over free time after the live 4pm Q&A may be used for additional students meetings.
  - Virtual office hours with the instructor and lab sessions with the TA will be announced on the course website, along with all the information necessary for attending them.
  - Labs will have bookable one-on-one meetings. The booking information for the labs will be posted online.
- **Regular (face-to-face) instruction**
  - Lecture Information: Selected notes will be posted on the course website as instructors have time to make them available. Lectures will not be recorded. 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 GitLab. Assignment submission policies will be discussed in the lectures and in the assignment descriptions.

### 2.2 Recommended Textbook

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

*Learning PHP, MySQL & JavaScript: With jQuery, CSS & HTML5* by Robin Nixon (6<sup>th</sup> Ed.)

### 2.3 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>

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## 3 ASSESSMENT

### 3.1 Dates and Distribution

Assessments
Assignments (4, 100%) <ul style="list-style-type: none"><li>- Assignment 1 - Feb 1 (25%)</li><li>- Assignment 2 - Feb 18 (25%)</li><li>- Assignment 3 - Mar 18 (25%)</li><li>- Assignment 4 - April 1 (25%)</li></ul>
Bonus clicker participation - 5%

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 pass the assignments. Your course grade will be calculated as a weighted sum using the weights above. However, your bonus clicker grade will be added only if you pass the course based on the assignment grades.

So if, for example, you get 70/100 (70%) on the assignments and 4/5 for the clickers, the clicker grade would be applied, and your total course grade will be 74%.

On the other hand, if you get 40/100 (40%) on the assignments, the clicker marks would not be applied, because you have failed 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 on the SoCS Linux servers. 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. All assignments are graded on the SoCS Linux servers, as discussed in class and assignment descriptions.

**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 weather closures. Assignments and midterms in other courses are not grounds for extensions.

**Late Assignments:** All assignments are due at the time/date indicated in the assignment description. Late assignments will be accepted for **12 hours** after the deadline and penalized at **2% per hour**. Assignments that are more than 12 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 compiles with warnings will lose marks. Code **must** compile and run on the SoCS Linux servers, as specified in the assignment descriptions.

**Submission errors:** Failure to submit assignments correctly (e.g., incorrect file names, faulty/missing makefile, incorrect directory structure, incorrect GitLab branch, etc.) will result in a mark penalty.

**Resubmission:** Resubmission of assignments is not normally permitted. In exceptional circumstances the instructor may allow assignment resubmission.

**Regrades:** Students may request a regrade of an assignment if the marker has made an error in grading. The original submission will be entirely regraded and a new mark will be assigned. It is possible for a mark to go down, go up, or remain unchanged as a result of a regrade. Students must request a regrade via the Regrade dropbox on the course website within 5 calendar days of receiving the assessment grade. No other regrade requests will be accepted.

**Missed Assessments:** If you are unable to meet an in-course requirement due to medical, psychological, or compassionate reasons, you must discuss this matter with 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>

**Note: *There are no makeup assessments.*** If you miss an assessment and have documentation to show that you are eligible for Academic Consideration, the weight of the assessment will be moved to other assessments after a discussion with the instructor.

**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.

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## 4 TEACHING AND LEARNING ACTIVITIES

### 4.1 Lecture and Lab Schedule

Please note that the schedule of topics below is approximate and may be updated as necessary to better fit the flow of assignments.

Lectures	Lecture Topics	Deliverables
Week 1	Course Introduction XML	
Week 2	Advanced C concepts and tools	
Week 3	Advanced C concepts and tools	
Week 4	Testing and debugging	Assignment 1 due
Week 5	Standards in computing	
Week 6	Scripting languages; multi-language applications	Assignment 2 due
<b>Break week</b>		
Week 7	Web programming and scripting languages	
Week 8	Web programming and scripting languages	
Week 9	Introduction to database design and SQL	Assignment 3 due
Week 10	Working with databases and SQL	
Week 11	Graphical user interfaces: design and evaluation	Assignment 4 due
Week 12	Special/advanced topics, course wrap-up	

### 4.4 Important Dates

Monday January 10: First day of class

Monday February 21 - Sunday February 27 - NO CLASS

Friday April 8: Last day of class, last day of CIS\*2750

**NOTE:** Friday April 8 is also the last day to drop classes

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## 5 ROLES AND RESPONSIBILITIES

### 5.1 Communication & Email Policy

Please use lectures, lab sessions, and the website discussion forum as your main opportunities to ask questions about the course. Questions that are specific to your particular situation may be emailed to [cis2750@soc.s.uoguelph.ca](mailto:cis2750@soc.s.uoguelph.ca) and will be answered by one of the instructional team. Extremely private communication should be conducted by making an appointment with the course instructor.

Major announcements will be posted to the course website. It is your responsibility to check the course website regularly. As per university regulations, all students are required to check their <[mail.uoguelph.ca](mailto: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.

### 5.5 General course policies

Do not redistribute recorded interactive discussions that involve your classmates. This includes advising times and question and answer sessions with the instructor.

Online activities such as advising times, question and answer sessions, and interactive lectures may be recorded by the instructor or TAs and posted to the course website. By taking this course you are agreeing that your participation in these activities can be used in this manner. If you do not wish to have your image or voice recorded as part of these activities then either do not take this course or do not ask verbal questions during these activities.

A reliable internet connection that is sufficient for online learning is necessary for this course. If you do not have a sufficiently fast and reliable internet connection, then you may not be able to view or download lectures or other course material. It may also not be possible to attend online advising with teaching assistants or the instructor.

This course is offered in the eastern standard time zone (EST). While taking this course then you may be required to attend online activities such as interactive lecture components, advising times, labs, and assignment evaluation sessions between 8:30am and 8:50pm EST. The lectures and labs are an integral part of the course, and you are expected to be available during the scheduled lecture times and lab times for consultation with the instructor and TAs.

Keep copies of assignments which you have submitted. You may be asked to resubmit assignments at a later time.

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## 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".

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## 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](http://www.uoguelph.ca/sas)