

## What is it?

This course introduces students to techniques to work in groups on software projects, do collaborative design in which students will identify, evaluate and refine important aspects of existing and new designs in the context of discussed problems.

## Skills



Mind Map of Group Work + Programming,

Communication, Understanding Data,

Software Tools and Design Analysis

## Instructor

Dr. A. Hamilton-Wright  
**instruct2250@**  
socs.uoguelph.ca

## Courselink

[courselink.uoguelph.ca](https://courselink.uoguelph.ca)

## Meetings

Class: 8:30-9:20am  
M/W/F

Labs (2hr): Mon @ 7pm  
or Tue @ 7pm

**Labs are held online.**  
**You must attend your assigned lab section.**

# CIS\*2250

## Software Design II -- Winter 2022

## Land Acknowledgement and Obligation

The University of Guelph occupies Anishnaabe territory. This is treaty land.

The Between the Lakes Purchase (Treaty No. 3 of 1792) from the Mississaugas of the Credit gave this land to Haudenosaunee who lost their homes fighting for the Crown. The University of Guelph now occupies part of this treaty land.

All of us who use this land, regardless of how we came to be here, have a responsibility to protect and share that which is here and defines this place. This has not been the history of the use of this land. We recognize and acknowledge the injustice of the occupation and our responsibility to address it. These words do not provide remedy: we have an obligation to work hard to find a fairer future.

This land is governed by the ancient Treaty of the Dish with One Spoon, an agreement made in the time of Hiawatha and the Great Peacemaker and handed down to us to guide our use of this land. This ancient treaty states the responsibilities we take on by coming here. By coming together in this place: we must protect its abundance; we must share all resources; we must respect each other. Our use of this place requires us to work here with all our hands: together, and for all.

## Caregiving while Learning

Caregiving is a community task. We recognize that members of the class may be caring for others, and we support each other in these tasks. We acknowledge that children and dependants of classmates may have needs that must be met during class time. Parenting activities to care for infants and young children, such as nursing or other feeding, changing and communication are necessary and important community activities and we celebrate these as part of the foundation of our community.

## Course Safety

This course is being held during a worldwide emergency. There are clear and regular calls by healthcare workers and medical officers worldwide to take action to limit our contacts, ensure that we only meet where there is good airflow, and to take significant action to manage the COVID-19 pandemic.

The core decision makers at the University (the President, Provost and their core team) have repeatedly announced that they do not use any actual evidence or indeed science-informed planning at all—relying instead purely on directives from political leaders.

It is therefore impossible to conjecture what decisions may be made by this group during the term. The President in particular has made it clear that her main agenda is to force as much face-to-face activity as possible, presumably in order to increase campus revenues.

At the moment, it appears that Dr. Hamilton-Wright will be obligated to attend our classroom for at least some of our class meetings after Jan 24 – but **YOU** do not.

As **your safety** cannot be assured under these circumstances, **no students** will be required to meet in person at **any point** during the term. This means that:

- all *class meetings* will either be **fully remote**, or have a **remote attendance option**;
- all *lab* activities will be fully remote throughout the semester;
- all *project* based collaboration activities held outside of class time are expected to be performed completely through remote collaboration;
- all *office hours* will be held remotely.

If face-to-face classes are held, information will be posted in CourseLink.

## Learning Outcomes

Students successfully completing this course will be able to:

- critically assess design ideas found in contemporary everyday use;
- critically assess the utility and implementation of design ideas; within the context of simple programs, tabular and record based data, and human interface examples;
- create and critique software designs for file based data analysis tasks
- select appropriate software tools for a variety of data-driven tasks;
- cooperate and contribute to team-driven software projects;
- establish a professional working relationship based around team-based design;
- evaluate, manage and push forward common projects towards a team-based goal;
- analyze, critically evaluate and iteratively improve their own and their team-members participation in group-based work; and
- evaluate program code produced by themselves and others.

## Course Format

The main focus of this course is **collaborative design** through **group activities**. For first half of the course we will engage in **pair-programming**. For the second half of the course students we will design and build a substantial software system in project groups.

During the classroom activities we will discuss and review course tools provided in our Online Textbook on Mondays and Wednesdays, and on Fridays we will have **Design Challenges** in which we examine a case study. During these we will examine a situation to which we can apply our design skills – a scenario in which the success of a resolution of the underlying issues is related to how well design strategies were applied, or can be applied.

The full course schedule is available in the CourseLink document “Activities By Week”.

You can contact all the teaching staff via [cis2250@socs.uoguelph.ca](mailto:cis2250@socs.uoguelph.ca), or if you wish to contact the instructor about more personal matters, please write to [instruct2250@socs.uoguelph.ca](mailto:instruct2250@socs.uoguelph.ca).

**Please** use these email addresses to contact the course staff—emails directly to the instructor commonly get lost. (I get far too much email in that account.) Emailing the course accounts ensure that we will see it, and be able to respond quickly.

## Grading Breakdown

Assignments:			±	31 %
Lab	Weeks 1-6 (begins Jan 10) :	20 %		
Team	Feb 9 (in Week 5) :	± 11 %		
Report		: 10 %		
Peer		: 1 %		
Team Project: (due during your lab slot)			±	34 %
Milestone I	Week 8 (March 7/8) :	± 7 %		
Report		: 7 %		
Milestone II	Week 9 (March 14/15) :	± 9 %		
Report		: 8 %		
Peer		: 1 %		
Milestone III	Week 11 (March 28/29) :	± 18 %		
Demo		: 8 %		
Report – due two days after demo		: 7 %		
Peer – due two days after demo		: 3 %		
Examinations:			±	35 %
Quizzes (10 @ 1.5 %)	Jan 21,28; Feb 4,11,18; :			
	Mar 4,11,18,25; Apr 1 :	10 %		
Take-Home Final	Due by April 20 @ 5pm :	25 %		

A student must attempt all three major course elements (Assignments, Team Project and Examination) and achieve a passing grade (50%) in each element. If > 50% is achieved in all elements, the final grade assigned will be the weighted average of all grades as per the table above. Otherwise, the final grade will be the lesser of the weighted average above and the minimum grade in any failing element.

Your grade for all team based elements will depend on group effort. **If a member does not collaborate, you must let the instructors know.**

- It is your responsibility to **support and invite collaboration**;
- It is **NOT** your responsibility to carry the weight for members who do not collaborate.

For peer grading, 50% of the score is assigned based on the quality of constructive feedback you give your peers, and 50% based on the score your peers give you on your work.

The spring break occurs between weeks 6 and 7.

## Inclusion and Accessibility

We are committed to an open and inclusive environment in this course.

Students with accessibility needs are invited to discuss how your needs may best be met with the instructor. This complements any discussion or accommodation presented through Student Accessibility Services ([uoguelph.ca/sas](mailto:uoguelph.ca/sas)).

In particular, anyone who finds barriers to inclusion in the classroom, regardless of the reason, are invited to discuss the situation with the instructor or other teaching staff.

## Pre-Requisites

CIS\*1250, CIS\*1300

## Restrictions

Restricted to BCOMP.SENG majors

## Final Exam

The final exam will be a “take home” final. This means that you will be presented with questions that you will consider in depth, and write a well thought out answer over a period of some days.

The final submission is due at the deadline given above. You will have at minimum one week to work on this exam after being provided the questions, so both time zone and any time based accommodation considerations are accounted for with this format.

## Deadlines and Submitting Work

All assignments will be submitted electronically through Courselink. **All deadlines fall at the beginning of class** on the day indicated in the case of submitted material. Demonstrations are due during your lab time.

Materials are not accepted after the indicated date and time unless an extension has been agreed upon with the course instructor **before** the indicated due date.

## Books

- |   |  |      |
|---|--|------|
| T. Brown                                      | <b>Change by Design, Revised and Updated: How Design Thinking Transforms Organizations and Inspires Innovation</b> | 2019 |
|   | Harper Business. ISBN: 978-0-062-33738-2   |      |
| C. Rudder                                     | <b>Dataclysm</b>   | 2015 |
|   | Broadway Books. ISBN: 978-0-385-34739-6  |      |
| A. Hamilton-Wright, K. Raymond, & D.A. Stacey | <b>Collaborative Design Fundamentals For Software Engineers: Online Textbook for CIS*2250/2022 Edition</b>         | 2020 |
|   | University of Guelph, School of Computer Science   |      |

We will be doing regular readings from these books, beginning with *Change by Design* and moving to *Dataclysm*. Copies are available via the University Bookstore and other sellers. The *Online Textbook* is provided in the Courselink website.

## Labs

Labs will be organized using the <https://repl.it> tool. Be sure to sign up for an account with this tool using your University email address so that we can identify and grade your work.

Labs prior to the break week will have a graded lab exercise that is expected to be completed in the lab time while working in pairs. Lab time held after the break will be used for the group project, both as assessment time, and to provide you time during which help is available from teaching staff to assist you in your project work.

A final grade for the project is assigned based on milestones presented by the group during labs in week 8, 9 and 11, with the final demonstration of the completed project in week 11, and a final report due 48 hours after the completion of your demo.

## If You Witness or Are Subject to Unacceptable Behaviour

If you are subject to or witness unacceptable behaviour, or have any other concerns, please notify the course instructor as soon as possible.

If you feel that the course instructor cannot or will not provide remedy for the situation, please contact any of these alternate resources:

Associate Director  
(Undergraduate)  
**ugraddir@**  
socs.uoguelph.ca

Director of the School  
**director@**  
socs.uoguelph.ca

Associate Dean  
(Academic)  
**cpesada@**  
uoguelph.ca

Office of Diversity and  
Human Rights  
**dhrinfo@**  
uoguelph.ca  
or extension **53000**

Sexual Violence  
Support and Education  
Coordinator  
**svinfo@**  
uoguelph.ca  
or extension **53020**

Campus Community  
Police at extension  
**52245**

## Code of Conduct

Our learning environment must be a friendly, safe and welcoming environment for all, regardless of ethnicity, gender, sexual orientation, age, ability, socioeconomic status, and religion (or lack thereof). As we wish to facilitate and encourage the fullest participation from everyone, this code of conduct outlines the expectations for all participants (including the instructor and other staff). This policy is aligned with the larger *University policy on Non-Academic Misconduct*.<sup>3</sup>

### Expected Behaviour

Participate in an authentic and active way. In doing so, you contribute to the health and value of this community.

Exercise consideration and respect in your speech and actions.

Attempt collaboration before conflict.

Refrain from demeaning, discriminatory, or harassing behaviour and speech.

Be mindful of your surroundings and of your fellow participants.

Alert community leaders (e.g., teaching staff) if you notice a dangerous situation, someone in distress, or violations of this Code of Conduct, even if they seem inconsequential.

### Citizenship and Participation

Communities mirror the societies in which they exist and positive action is essential to counteract the many forms of inequality and abuses of power that exist in society.

If you see someone who is **making an extra effort** to ensure our community is welcoming, friendly, and encourages all participants to contribute to the fullest extent, **we want to know!**

### Unacceptable Behaviour

Unacceptable behaviours include: intimidating, harassing, abusive, discriminatory, derogatory or demeaning speech or actions by any participant in our community, either in person, online, at any related events, or in one-on-one communications carried out in the context of community business.

Harassment includes: harmful or prejudicial verbal or written comments related to race, religion, disability, sex, gender, sexual orientation; inappropriate use of nudity and/or sexual images in public spaces (including computer labs and presentation slides); deliberate intimidation, stalking or following; harassing photography or recording; posting (or threatening to post) other people's personally identifying information (a.k.a.: "doxing"); sustained disruption of talks or other events; inappropriate physical contact, and unwelcome sexual attention.

### Consequences of Unacceptable Behaviour

Unacceptable behaviour from any community member, including the course instructor and those members with decision-making authority, will not be tolerated.

**Anyone asked to stop unacceptable behaviour is expected to comply immediately.**

If a community member engages in unacceptable behaviour, action will be taken to ensure that such behaviour ends, beginning with action on the part of the course instructor, and escalating if necessary.

Additional information on University policy regarding harassment, conduct and human rights is available at the *University Human Rights Office* or the *Sexual Violence Support Centre*.

This Code of Conduct does not limit the right of any community member to seek additional support or redress for unacceptable or dangerous behaviour.

<sup>3</sup>This code of conduct is based upon the citizen code of conduct available via <http://citizencodeofconduct.org/>, and is distributed under a Creative Commons Attribution-ShareAlike license (CC BY-SA 3.0)

## Anti-plagiarism Tools

Please note that all materials submitted for grading will be evaluated using "MOSS" (Measure of Software Similarity) and "TurnItIn" tools, which detect plagiarism, illicit collaboration and reuse of materials, all of which constitute academic misconduct.

## Inclusion and Accessibility

We are committed to an open and inclusive environment in this course.

Students with accessibility needs are invited to discuss how your needs may best be met with the instructor.

This does not replace, but instead complements any discussion or accommodation presented through Student Accessibility Services ([uoguelph.ca/sas](http://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.

In particular, **it is your responsibility** to accurately and clearly indicate the work of any and all contributing people, including yourself, in all presented and submitted materials.

By handing in any work for this (or any) course, unless you have specifically identified any other authorship, **you are claiming that the sole authorship is your own.**

Including work from any other person **without** directly indicating the source of such work constitutes academic fraud of some type.

As long as the **true authorship of all materials is clearly indicated**, you will never have a problem with plagiarism.

The consequences of any type of academic fraud at the University are significant, and all cases that arise are submitted to the Dean's office for judicial review.

**Please do not participate in plagiarism or any other type of academic fraud. It wastes valuable time and resources, which steals energy from the class.**

If you have any questions about what academic fraud such as plagiarism entails, or about any other forms of academic misconduct, please ask your course instructor, the library, or any other faculty. We will be very happy to help you understand this important concept.

# University Wide Course Outline Information

University of Guelph

January 1, 2022

## Abstract

The text below has been provided by the University of Guelph central administration, and is required to be distributed with course outlines provided for course guidance.

The information in this document is common to ALL courses offered by the University of Guelph. It has been collected here to make these common features of all courses distinct from the course specific instructions that have been given in the previous pages, and ensure that you can distinguish between that material authored by your course instructor, as separate from that required as part of University regulations.

- Graduate Calendar - Grounds for Academic Consideration
- Associate Diploma Calendar - Academic Consideration, Appeals and Petitions

## 3 Drop Date

Students will have until the last day of classes to drop courses without academic penalty. The deadline to drop two-semester courses will be the last day of classes in the second semester. This applies to all students (undergraduate, graduate and diploma) except for Doctor of Veterinary Medicine and Associate Diploma in Veterinary Technology (conventional and alternative delivery) students. The regulations and procedures for course registration are available in their respective Academic Calendars.

- Undergraduate Calendar - Dropping Courses
- Graduate Calendar - Registration Changes
- Associate Diploma Calendar - Dropping Courses

## 1 Email Communication

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

## 2 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. The grounds for Academic Consideration are detailed in the Undergraduate and Graduate Calendars.

- Undergraduate Calendar - Academic Consideration and Appeals

## 4 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 re-submit work at any time.

## 5 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.

- For Guelph students, information can be found on the SAS website  
<https://www.uoguelph.ca/sas>
- For Ridgeway students, information can be found on the Ridgeway SAS website

## 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 encourages academic integrity. 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.

- Undergraduate Calendar - Academic Misconduct

- Graduate Calendar - Academic Misconduct

## 7 Recording of Materials

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

## 8 Resources

The Academic Calendars are the source of information about the University of Guelph’s procedures, policies, and regulations that apply to undergraduate, graduate, and diploma programs.

- Academic Calendars  
<https://www.uoguelph.ca/academics/calendars>

## 9 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.

## 10 Illness

Medical notes will not normally be required for singular instances of academic consideration, although students may be required to provide supporting documentation for multiple missed assessments or when involving a large part of a course (e.g., final exam or major assignment).

## 11 Further Information

For information on current safety protocols, follow these links:

- <https://news.uoguelph.ca/return-to-campus/how-u-of-g-is-preparing-for-your-safe-return/>
- <https://news.uoguelph.ca/return-to-campus/spaces/#ClassroomSpaces>

Please note, these guidelines may be updated as required in response to evolving University, Public Health or government directives.