CIS*3750 W23 – Software Analysis & Design in Applications
Course Outline

Lecturer: Prof. Mark Wineberg

Office Hours: After class

Email: mwineber@ uoguelph.ca

Lectures: MCLN, rm 102 – Tues, Thurs 1:00 pm to 2:20 pm

Labs:

Section 1: THRN, rm 2420	–	Wed 1:30 pm to 3:20 pm
Section 2: THRN, rm 2420	–	Wed 11:30 am to 1:20 pm
Section 3: THRN, rm 2420	–	Mon 2:30 am to 4:20 pm
Section 4: THRN, rm 2420	–	Mon 11:30 am to 1:20 pm

The lab time will be a mixture of practical tutorials, project meeting times and TA hours

Course Calendar Description

This course is an introduction to the issues and techniques encountered in the design and construction of software systems, focusing on the theory and models of software evolution. Topics include requirements and specifications, prototyping, design principles, object-oriented analysis and design, standards, integration, risk analysis, testing and debugging.

Prerequisites: CIS*2520, (CIS*2430 or ENGG*1420)

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

Textbooks

Recommended

Software Engineering (10th *Ed*)
Ian Sommerville
Addison-Wesley, 2015

Applying UML and Patterns (2/3rd Ed)
Craig Larman
Pearson, 2005

Head First Object-Oriented Design & Analysis
Brett McLaughlin, et.al.
O'Reilly Media, 2011

Head First Software Development
Dan Pilone, Russ Miles
O'Reilly Media, 2008

Course Website

Course material, news, announcements, and grades will be regularly posted to the CIS*3750 Courselink Website, accessible from the uoguelph.ca front page. You are responsible for checking the site regularly.

- *Lecture Information*: The formal class notes will be posted on the course website as soon as the instructor has time to make them available.
- *Labs and Tutorials*: Selected tutorial and lab materials will be posted on the course website as soon as the instructor has time to make them available.
- *Assessments*: Tests, project and descriptions readings material will be distributed through the course website. All assignments project requirements, design, and code will also be submitted through the course website or as described.

Grading

[60%] Group Project

[12%]	M1	Requirements, User Stories	(*document, walkthrough, man-hours*)
[12%]	M2a	Architecture Diagram, Use Case Diagram	(*document, man-hours*)
[12%]	M2b	Use Cases, Entities List	(*document, walkthrough, man-hours*)
[12%]	M3	Class Diagrams, Class List, Sequence Diagrams	(*document, walkthrough, man-hours*)
[12%]	M4	FE Prototype, Implementation	(*prototype, code, walkthrough, man-hours*)

[40%] Tests

[10%]	Q1	Quiz 1	(*take home test*)
[10%]	Q2	Quiz 2	(*take home test*)
[20 %]	F	Final	(*take home test*)

To pass the course, you must achieve a passing grade in both sections: Group Project and Tests
A passing grade for a section is 50%, i.e., you need 30/60 for the Project, and 20/40 for the Tests
A failing grade in either of the sections results in your final grade calculated as: Final Grade = min(Project, Tests)
If you pass both sections, your final grade is the weighted sum of all assessments shown above
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Project Individual Grades

For each milestone of the project, a planned and actual number of man-hours worked by each group member will be submitted by the group

A group grade for the milestone will be awarded by the instructor/TA

An individual grade will be calculated based on the group grade and some metric of effort by the individual (such as the number of man-hours worked, or proportion of the product produced), as submitted by the group.

Submission and Late Policy

Project milestones:

- A project milestone usually will incorporate documentation/code and a walkthrough with the group, either in person, or over a shared Zoom meeting.
- The group will be able to sign-up for the walkthrough on a first come, first serve basis.
- All documentation/code must be submitted at the beginning of the week, or, under extenuating circumstances (discussed ahead of time with the instructor) no later than the time of the walkthrough, or a grade of zero will be awarded for that milestone

Tests:

- Tests (both the quizzes and the final) are written through the Courselink quiz tool
- Quizzes are released on the Monday of the week (9:00am) and closed on Friday by 10:00pm
- The final is released on the Monday of the start of the exam period (9:00am) and closed on the final Friday of the exam period, by 10:00pm
- You can take the midterm / final anytime during the week / exam period
- Once started:
  - you have 36 hours to complete a quiz and 72 hours to complete the final
  - you may enter and exit the test at any time before your 36/72 hours are over, (*unless the final deadline has passed, in which case you will not be allowed back in*)
  - this does not affect the time remaining for completion (*36/72 hours from the time you started*)
- If you do not take the quiz sometime during the week, you will be awarded zero
- If you do not take the final sometime during the exam period, you will be given an INC for the course

Policy on Regrade Request

- Any request to remark a quiz or project milestone must be addressed to *the instructor* by email within one week of the release of the grade, and must include the following:
  i. the subject must be "CIS*3750 Regrade request for <assessment name>
  ii. a clear description of where and why you feel that you were graded in error
  iii. the following statement exactly as it appears here:

  "In requesting a regrade I understand that my score on the test/project could fall as well as rise, including on issues that may be discovered in areas of the submission separate from what was described in the regrade request."

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 Academic Accommodation of Religious Obligations: http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-accomrelig.shtml

If You Cannot Meet a Course Requirement

- If you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the instructor by email, using the subject "CIS*3750 Accommodation request for <assessment name>", along with your name, id# and reason in the message body.
- See the undergraduate calendar for information on regulations and procedures for Academic Consideration: http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml

Class Delivery

Lectures

- All class lectures will be face-to-face, in MCLN, Room 102, as well as simulcasted on Zoom. If the campus is under lockdown for emergency health reasons all lectures will be held remotely only. All Zoom simulcasts will be recorded and posted on Courselink through the Zoom tool.

Labs

- Labs will be a mixture of practical "how-to" lectures, project activities, quiz answers, as well as TA hours. Again, if the campus is under lockdown for emergency health reasons, the labs may either be held through Zoom/Teams sessions during lab times, or cancelled, depending on the week.

Walkthroughs

- Project milestones are graded using walkthroughs with the instructor and/or the TA
- Walkthrough date and time:
  - they take place
    - outside of the lecture and lab times (lab times will be available most weeks as well)
    - during the week the project milestone is due
    - are typically an hour long, depending on the milestone
    - will usually be held using a Zoom/Teams session
      - in person grading can be requested, but will be granted only if the instructor/TA is on-campus and a suitable room can be secured
  - your group will sign up for a single time slot during the week
    - times will be posted and assigned using a first-come first-served basis
    - make sure the slot you sign up for allows all (or at least most) of the group to attend
- The walkthrough Zoom/Teams session, whether in person or remotely held, will be recorded for review by the instructor or TA for the purpose of grading the milestone. The Zoom/Teams recording can be requested by the Group to be shared among the group members but will not be released to anyone outside the group.

Timetable

	Due	Monday (< 9:00 am)	Friday (< 10pm)
09-Jan	W1		
16-Jan	W2		
23-Jan	W3		
30-Jan	W4		
06-Feb	W5	**M1: User Stories, Spec. [walkthrough]**	**Q1**
13-Feb	W6		
reading week →			
27-Feb	W7	**M2a: Arch Diag^{m}, UC Diag^{m}**	
06-Mar	W8	**M2b: Use Cases, Entities List [walkthrough]**	
13-Mar	W9		**Q2**
20-Mar	W10	**M3: Class Diag^{m}, Class List, Seq. Diag^{m} [walkthrough]**	
27-Mar	W11		
03-Apr	W12	**M4: FE Prototype, Impl. [walkthrough]**	
	Ex		**F**

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.

Online Delivery of the Course

- 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 be possible that you would not be able 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, you may be required to attend online activities, such as advising times or labs, between 8:30 and 4:30 EST or optionally in the evening, up to 9pm EST.

Recording of Materials

- Material recorded with permission, including any recorded lecture material provided by the instructor, is restricted for the use of the course, and may not be posted on any public space unless further permission is granted.
- 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 Courselink. 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.

Code of Conduct*

Guiding Principle

- 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.

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 working together 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, some- one 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.

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* This section was developed by Professor A. Hamilton-Wright

† 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 (http://creativecommons.org/licenses/by-sa/3.0/)

Academic Misconduct

Important Rules and Guidelines

- 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.
- 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.

Relevant Websites

- The Academic Misconduct Policy is detailed in the Undergraduate Calendar: http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-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".

Responsibilities

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, labs and group walk-throughs (*scheduled by mutual agreement outside of class/lab times*) will be the principal venue to provide information and general feedback for tests and assignments.

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.