CIS*3750 - Systems Analysis & Design in Application

F18 – 0.75 Credits (3-2)

course description

An introduction to the issues and techniques encountered in the design and construction of software systems. 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.

This is a 0.75 credit course, so you should expect to a greater weekly time commitment. From the calendar, *"Under the credit system, credit weight reflects student workload rather than contact hours. Students should note that 10 to 12 hours of academic time and effort per week (including classes) are expected for a 0.50 credit course."* Therefore, you should expect to spend 15 to 18 hours per week on this course. See https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-aload.shtml

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. You can find more information here: https://www.uoguelph.ca/registrar/calendars/undergraduate/2018-2019/c12/c12cis.shtml

learning outcomes

1) Collect and critically evaluate client needs to develop software requirements that are specific, measurable, and categorized.
2) Estimate a timeline for software development by identifying dependencies in, establishing a prioritized list of, and estimating production time for the software requirements.
3) Improve system design by collecting and synthesizing client feedback provided during prototyping sessions.
4) Create design artifacts to succinctly communicate software requirements to teammates and clients.
5) Implement and test a systems solution that addresses the client needs.

prerequisites & restrictions

Students enrolled in CIS3750 are expected to have the skills and knowledge covered in CIS2750, as well as strong writing skills, the ability to work in teams, and strong communication skills.

Prerequisite	Software Systems Development and Integration	CIS*2750
Restrictions	Systems Analysis & Design in Applications	CIS*3430

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Schedule, Due Dates and Grade Weights

Instruction

You are expected to attend each class and every lab (for your own registered section). Lab attendance is particularly important because your project group will expected to submit work by the end of some labs. For class, readings will occasionally need to be reviewed before the next class, some of this material and related class instruction will appear in your mid-term and final exams.

Lectures	Tue/Thu 11:30AM – 12:50PM	ALEX, Room 100
Lab Section 01	Wed 09:30AM – 11:20AM	THRN, Room 2420
Lab 02	Fri 09:30AM – 11:20AM	THRN, Room 2420
Lab 03	Wed 07:00PM – 08:50PM	THRN, Room 2420
Lab 04	Wed 03:30PM – 05:20PM	THRN, Room 2420
Wrap-up & Review Lectures	Tue/Thu Nov 27th & 29th	ALEX, Room 100

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Course submissions and weights

		Due Date	Grade Weight
Project Deliverables			**Total: 60%**
Checkpoints	1: Kick-off and Design Thinking-lite	Mon Sept 17th, 12:00pm	10 %
	1b: User Stories	Weekly Lab	-
	2: Requirements Document	Mon Oct 1st, 12:00pm	10 %
	2b: Feature Summary	Weekly Lab	
	3: Functional Specifications	Mon Oct 15th, 12:00pm	10 %
	3b: Proofs of Concept	Weekly Lab	-
	4: Design Document	Mon Nov 5th, 12:00pm	10 %
	4b: Preview Demonstrations, if applicable	Weekly Lab	-
	5: Major Development Complete	Mon Nov 19th, 12:00pm	*
Demo	Project Demonstrations	Weekly Lab	20 %
Exams			**Total: 40%**
	Midterm #1	Thu Oct 4th in class ALEX, Room 100	10 %
	Midterm #2	Thu Oct 25th in class ALEX, Room 100	10 %
	Final Exam	Mon Dec. 3rd 08:30AM – 10:30AM To Be Announced	20 %

* The grade for Checkpoint 5 is included with your group's final project demonstration.

Important: The project component of this course is worth 60% and the exam component is worth 40%. A failing total in either of these components will result in a final grade equal to the total of the failed component, up to a maximum of 45%. If a passing grade is achieved in neither component, your grade will be equal to the combined total, up to a max of 45%.

For example, if a student achieved a total project grade of 50/60 and a total exam grade of 18/40, then their final grade would be 45% (50 + 18 = 68, but 18/40 is < 50%).

If another student achieved a project grade of 29/60 and an exam total of 15/40, then their final grade would be 44% (29 + 15 = 44)

Missing any exams or project components will make it a lot harder to pass the course.

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course website

Course material, news, announcements, and grades will be regularly posted to the CIS*3750 website which can be found on courselink (http://courselink.uoguelph.ca). You are responsible for checking this website regularly for marks and any urgent communications.

Lecture Materials

Selected notes will be posted on the course website as the instructor and TA's have time to make them available. You are expected to take your own notes during class and lab times.

Assignments & Lab Demos

Assignment and Lab Demo descriptions and rubrics will be made available on the course website. Assignments and Lab Demos are to be submitted via the course website, and following the rules listed with each assignment/lab demo outline. Failure to follow the strict submission rules will result in a grade of 0 being assigned.

Texts

Required	**Head First Software Development** *Pilone, and Miles*	**2008**
Suggested*	Head First Object Oriented Analysis and Design *McLaughlin, Pollice, and West*	2007
Suggested*	Spring Into Technical Writing for Engineers and Scientists *Rosenberg*	2005
Suggested*	The Mythical Man-Month: Essays on Software Engineering, 2nd ed. *Brooks*	1995
Suggested*	Peopleware: Productive Projects and Teams, 3rd ed. *DeMarco, & Lister*	1987
Suggested*	Managing Humans: Biting and Humorous Tales of a Software Engineering Manager, 3rd ed. *Lopp* *2nd ed.:https://books.scholarsportal.info/uri/ebooks/ebooks2/springer/2013-02-14/1/9781430243151*	2016
Suggested*	• Refactoring: Improving the Design of Existing Code 1st or 2nd ed. • http://martinfowler.com *Fowler*	Various

*Unfortunately, you're unlikely to find the suggested titles at either campus bookstore but they are readily available from your favourite online bookseller. I have placed copies on reserve at the library where the title is available in their collection.

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Teaching Assistants

- Nicolas Durish
- Fanny Susillo
- Tamizhselvan Venkatesan

Instructor's Office Hours

Tuesday and Thursday, 1-2:00pm, or if necessary by appointment

Reynolds Room 2206

IMPORTANT: See the following **Communication & Email Policy** for information on how to contact the TA's and Instructor for help.

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roles and responsibilities

• **Communication & Email Policy** 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 e-mail account regularly; e-mail is the official route of communication between the University and its students. *Questions and requests must be directed to cis3750@socs.uoguelph.ca , communications sent through other means will not be given priority. If you have a sensitive request, you should speak to the instructor in person.*

• **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 in writing, with your name, id#, e-mail contact and a description of how the accommodation you're requesting will affect your other studies (re scheduling, etc). See the Undergraduate Calendar for information on regulations and procedures for Academic Consideration.

• **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.

• **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.

• **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 standalone. 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.

• **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 extracurricular 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. If you have an SAS accommodation, please consider speaking to the instructor about it in private well in advance of any submissions or exams, this will allow us to make better arrangements for you.

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code of conduct

Because this class needs to be a participatory community if students are to fulfill their potential for learning, people who disrupt the community by their words or actions disrupt that community. Rude, sarcastic, obscene, or disrespectful speech and disruptive behaviour have a negative impact on everyone's learning. Aggressive behaviour, bullying, abusive language, sexism, agism, ablism, racism, homophobia, transphobia, islamophobia, etc. will not be tolerated. We are all entitled to ask questions and hold opinions, but these must be presented in a respectful manner. All discussions must be respectful, regardless of how much you disagree with another person or group in the classroom. We will refer to and address our peers using their preferred names and preferred gender pronouns. We will work towards a space where everyone has a voice, where everyone can be heard, and where everyone is accepted and welcomed.

Our learning environment must be a friendly, safe and welcoming environment for all, regardless of ethnicity, gender, sexual orientation, 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, other staff, etc). See http://citizencodeofconduct.org/

• **Expected Behaviour:** Members of our community are expected to 1) participate in an authentic and active way, and in doing so, contribute to the health and value of our community, 2) exercise consideration and respect in their speech and actions, 3) attempt collaboration before conflict, 4) refrain from demeaning, discriminatory, or harassing behaviour and speech, and 5) be mindful of your surroundings and your fellow participants, and alert community leaders (e.g. your instructor) if you notice a dangerous situation, someone in distress, or violation of this Code of Conduct, even if they seem inconsequential.

• **Citizenship & 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, 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; 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.

• **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

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Resources:

1) Associate Director, Undergraduate ugraddir@socs.uoguelph.ca,

2) Director of the School director@socs.uoguelph.ca

3) Associate Dean, Academic kgordon@uoguelph.ca

4) Office of Diversity and Human Rights dhrinfo@uoguelph.ca, or ext 53000), or 5) Campus Community Police (ext 52245, for emergencies use ext 2000).

class rules

- All assignments and project materials should include the course code CIS3750, and where applicable – your name and your group's name.

- Lab demos are mandatory, and will include feedback from the client (in this case the instructor). Lab demos will be graded based on your performance with the client (i.e. the instructor). If you miss a lab demo, you will receive a grade of 0 for the component.

- Assignments and post-mortem reports are to be uploaded to the course website, and are due by 11pm as indicated on the assignment/report description sheets. The final lab demo's post mortem will be part of the final report.

- A late project submission is automatically assigned a grade of 0 for all team members.

- You are expected to take excellent notes during classes and labs. You will need them for your midterm and final exams, as a large portion of the questions will come directly from classroom discussion.

- You are expected to show up to every class, and to every lab. There are 24 classes and 10 labs.

- If you miss the final exam, you must talk with your academic counsellor and follow University of Guelph policies on this matter. The instructor can not do anything in this situation.

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.

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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 here: https://www.uoguelph.ca/registrar/calendars/undergraduate/2017-2018/c08/c08-amisconduct.shtml

• The SOCS Academic Integrity Unit is here: https://moodle.socs.uoguelph.ca/course/view.php?id=2 Login with your central login credentials. The key to use is "imhonest".

accessibility

The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment. Students requiring service or accommodation, whether due to an identified, ongoing disability, or for a short-term disability should contact Student Accessibility Services (SAS) as soon as possible.

For more information, contact SAS at 1.519.824.4120 ext 56208 or email csd@uoguelph.ca or see the website https://wellness.uoguelph.ca/accessibility/ .

health & wellness

All members of campus play a role in fostering and promoting a safe, supportive environment, as well as good physical, emotional, spiritual, cultural, and mental health and wellness.

If you are sick, heartbroken, or exhausted, go home. Work is not more important than your health. -Dr. Max Liboiron

If you are experiencing any challenges, please do not hesitate to contact the instructor, and know that there are resources on campus set up to help you out.

Medical concerns? Student Health Services at x52131

Threats of violence, personal safety? Campus police at x2000 Psychological or emotional concerns? Counselling services at x53244 Accessibility concerns? SAS at x56208

Sexual assault? Campus police at x2000, or counselling services at x53244 Mental Health concerns?

Other sources are:

• Student Health Services, Monday to Friday, 8:30am-4:30pm, x52131, J.T. Powell Building

• Counselling Services, Monday to Friday, 8:15am-4:15pm, x53244, Level 3, University Centre

• Wellness Education Centre, Monday to Friday, 8:30am-4:30pm, x53327, J.T. Powell Building

• Student Support Network, Monday to Friday, 12:00pm-10:00pm, Raithby House

• Campus Community Police, 24/7, x2000, Trent Building

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• Good2Talk, 1.866.925.5454

• Here 24/7, 1.844.437.3427