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By Appointment

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teaching team
Nic Durish
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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.

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.

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.**

lecture, lab & final exam times

You are expected to attend every class and every lab. You are also expected to come to class having reviewed certain topics so that classroom time can be spent applying what you've learned to your course project.

Lec 01/02	**Tuesday/Thursday, 11:30am-12:50pm**	MAC149
Lab 01	**Wednesday, 9:30am-11:20am**	MAC149
Lab 02	**Thursday, 7:00pm-8:50pm**	MAC149
Exam	**Monday, December 4, 2017, 8:30am-10:30am**	TBD

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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**	CIS2750
Restrictions	**Systems Analysis & Design in Applications**	CIS3430

course website

Course material, news, announcements, and grades will be regularly posted to the CIS3750 website which can be found here. You are responsible for checking the website regularly.

Community Engagement Materials
You will be spending the entire semester working on a project for a local Not For Profit organization. As such, materials describing community-engaged projects and partners will be provided. It is your responsibility to review these materials before interacting with the client.

Challenge Materials
Articles and other supporting data about the client and their overarching challenge will be provided on the website. It is your responsibility to review these materials before interacting with the client.

Lecture Materials
Selected notes will be posted on the course website as the instructor and TAs 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**	2008
	Pilone, and Miles	
Suggested	**Head First Object Oriented Analysis and Design**	2007
	McLaughlin, Pollice, and West	

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grading scheme

The following grading scheme will be used to assess your progress in the course. Your assignments should be submitted in PDF format unless otherwise stated by the instructor. If you are having difficulty with an assignment, please discuss this with the instructor in advance of the due date. Do not wait until the last day to do so.

Assignment 1	**Due September 29, 11:00pm**	10%
	Topics: Your Team, Your Client, Requirements, and User Stories	
Assignment 2	**Due October 13, 11:00pm**	10%
	Topics: Use Cases, Time Estimations, and Tasks	
Demo 1	**In Lab Demo 1 - October 25/October 26**	20%
	Topics: Paper Prototype, Lab Demo Report Due 1 Week Following Lab Demo, 11:00pm	
Demo 2	**In Lab Demo 2 - November 8/November 9**	15%
	Topics: Wireframe Prototype, Lab Demo Report Due 1 Week Following Lab Demo, 11:00pm	
Demo 3	**In Lab Demo 3 - November 22/November 23**	10%
	Topics: Final Prototype	
Project	**Final Project Report - December 1**	15%
	Topics: Final Project Report.	
Exam	**Final Exam - December 4**	20%
	Topics: All Course Content	

Missed Labs: if you miss a lab, you are affecting your team's ability to complete the final project. If you are going to miss a lab, please discuss this with your team first. You must then present to the instructor a plan for how you and your team will deal with your absence.

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 here for specific details and consult the undergraduate calendar for information on regulations and procedures for Academic Consideration.

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

Late Assigments/Lab Demos: there are no extensions for assignments, reports, lab demos, or the final exam. Submit whatever you have completed by the due date. Failure to submit will result in an automatic grade of 0 being assigned. Late submissions will automatically receive a grade of 0.

Regrades: if you feel your assignment has been graded incorrectly, you must, in writing, present your case to the instructor. Be specific about what you believe was graded incorrectly. All regraded material will be *completely* regraded. This could result in your grade being reduced.

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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.

- **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 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.

- **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.

CIS3750Fall 2017
Systems Analysis & Design in Application

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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, and community partners)[1].

- **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

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[1] This code of conduct is based on the citizen code of conduct available here, and is distributed under a Creative Commons Attribution-ShareAlike licence (see here for details)

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 here.

- **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: 1) Associate Director, Undergraduate (click here to email), 2) Director of the School (click here to email), 3) Associate Dean, Academic (click here to email), 4) Office of Diversity and Human Rights (click here to email, or ext 53000), or 5) Campus Community Police (ext 52245).

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class rules

- If/when you send an email to the instructor or the TA, you must include the course code CIS3750 in the subject line. Emails that do not include the course code will not be prioritized.

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

- The assignments, lab demos, and the final project will include group ($\sim$75%) and individual work ($\sim$25%). Each member will initially receive the same grade for the group portion. The grade will be modified based on assessments from you and your group members.

- Lab demos are mandatory, and will include feedback from the client. Lab demos will be graded based on your performance with the client, their feedback, as well as with a post-mortem report. If you miss a lab demo, you will receive a grade of 0 for the lab demo and the post-mortem.

- 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 assignment/post-mortem report is automatically assigned a grade of 0 for all team members.** If your team submits the assignment/post-mortem on time, but you have not submitted your *individual* portion of the assignment/post-mortem, you will receive a 0 on your individual portion, but this will not affect the team portion of the grade.

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

- The final project is due by 11pm December 1, 2017. The final project will be uploaded to the course website. **A late final project is automatically assigned a grade of 0.** If your team submits the report on time, but you have not submitted your *individual* portion of the report, you will receive a 0 on your individual portion, but this will not affect the team portion of the grade.

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

- The final exam will be cumulative.

- **You must achieve a passing grade on the final exam to pass the course. If you do not achieve a passing grade on the final exam, your final grade will be your final exam grade.**

- 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.

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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 here.
- The SOCS Academic Integrity Unit is here. 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 here.

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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?* Please see the Mental Health Resources page here.

Other sources of help can be found at the following links:

- Student Health Services, Monday to Friday, 8:30am-4:30pm, x52131, J.T. Powell Building
- Couselling 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
- Good2Talk, 1.866.925.5454
- Here 24/7, 1.844.437.3427

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topics by date

WEEK	TOPICS COVERED	HFSD	OOAD
Intro	**Introductions, Project & CES**	1	
△Week 1*	**Community Engaged Scholarship** **Meet the Client**	2	1,2
Week 2	**Software Development** **User Stories & Requirements**	3,4	
‡Week 3*	**Requirements & MuSCoW** **Prioritization, Logic & Timing**		
Week 4*	**Iterations & Timelines**		
‡Week 5*	**Use Cases** **Task & Burn Down Charts**	5,6	4
Week 6*	**Software Prototypes**		5
△‡Week 7*	**Prototyping & AODA** **UML Diagrams**		8
Week 8*	**Class Diagrams** **Sequence Diagrams**		
△‡Week 9*	**CRC Sessions**	7,8,11	
Week 10*	**Testing**		
△‡Week 11*	**Design Patterns**		10
Week 12	**Software Process** **Review & Final Comments**		

order or content may vary
‡*course deliverable due this week*
△*client/guest visiting*
lab week