CIS3750Fall 2022

Systems Analysis & Design in Application

contact

Dr. Daniel Gillis
Pronouns: he/him/his

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community partner

TBD

where we learn is important

The Dish With One Spoon Covenant speaks to our collective responsibility to steward and sustain the land and environment in which we live and work, so that all peoples, present and future, may benefit from the sustenance it provides. As we continue to strive to strengthen our relationships with and continue to learn from our Indigenous neighbours, we recognize the partnerships and knowledge that have guided the learning and research conducted in and for this class. We acknowledge that the University of Guelph resides in the ancestral and treaty lands of several Indigenous peoples, including the Attawandaron people and the Mississaugas of the Credit, and we recognize and honour our Anishinaabe, Haudenosaunee, and Métis neighbours. We acknowledge that the work we do here occurs on their traditional lands so that we might work to build lasting partnerships that respect, honour, and value the culture, traditions, and wisdom of those who have lived here since time immemorial.

what is this course about?

CIS3750 is an introduction to the issues and techniques encountered in the design and construction of software systems. In this course, we will discuss 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. Want to know more? Check out the Academic Calendar here.

what are we going to learn?

By the end of this course, you should be able to:

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 diagrams to succinctly communicate software requirements to teammates and clients.**
5. **Test a systems solution that addresses the client needs.**

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when are we getting together?

At this point in time the course will likely be delivered face-to-face (with a few exceptions). However, as a class we will discuss our comfort levels and safety in both the class and lab settings - particularly given the ongoing COVID-19 pandemic and the rising number of cases of monkey pox. Importantly, we will do whatever we need to do to ensure the health and wellness of everyone in class (including the teaching team, visitors, and our community partner). With that in mind, it's important for each of us to remain as flexible and patient as possible during the semester in the event that rising case counts necessitate moving to virtual delivery of the course content.

While I want you to attend every class and every lab, I realize that there may be times when this won't be possible. Please discuss any challenges you might have with me, and I'll do my best to help you sort them.

To ensure our time together is productive, I'm going to ask that you do some work in advance of class. This typically involves reading, but might involve sketching, watching videos, or creating interpretive dance routines to demonstrate certain computer science topics.

Lec 01/02/03	**Tuesday/Thursday, 1:30am-2:50pm**	MCKN 117
Lab 01	**Friday, 9:30am-12:20am**	THRN 2420
Lab 02	**Thursday, 2:30pm-4:20pm**	THRN 2420
Lab 03	**Wednesday, 9:30am-11:20am**	THRN 2420

what skills should we have before we take this course?

Students enrolled in CIS3750 are expected to have the skills and knowledge covered in CIS2520, as well as strong writing skills, the ability to work in teams, and strong communication skills.

Prerequisite	**Data Structures**	CIS2520
Prerequisite	**Object Oriented Programming**	CIS2430/ENGG1420

what textbooks will we be reading?

Required	**Course Manual: Systems Analysis & Design In Applications** ***Gillis & Durish***	2019
Suggested	**Head First Software Development** ***Pilone & Miles***	2008
Suggested	**Head First Object Oriented Analysis and Design** ***McLaughlin, Pollice & West***	2007

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where can we find course materials?

There are a lot of things to cover in this course! But never fear - all course material, news, announcements, and grades will be regularly posted on our CIS3750 website. You can find it here. Please be sure to check the website regularly. And while other tools (such as Slack, Discord, Trello, etc.) might be used and are super helpful in their own right, definitely refer to the course website for course information, or ask the teaching team if you are still unsure.

Community Engagement Materials

We are extremely lucky to be working with a fantastic community partner this year. To build a relationship with our community partner, you will find materials describing community-engaged projects and our partner on our website. It's important for all of us to review these materials before we begin working with our community partner. And remember that our community partners are volunteering their time to support us as we learn about software design.

Challenge Materials

In addition to the regular course materials, I will post extra articles or other data about the community partner and the overarching challenge. Please use these materials to bring yourself up to speed with them and their challenge, as this will help you build a better solution as well as rapport with them.

Lecture Materials

Slides and other lecture materials will be made available in advance of class. In the event that we offer a virtual session, it will be recorded and the video will be posted as soon as possible after class. Links to the video will be posted to our course website.

Labs

Lab meetings will allow teams the opportunity to meet with TAs to clarify issues or to receive advice pertaining to their project. Some labs will require that you or your team submit work for grading. While most students will submit these materials by the end of the lab, you will have extra time after the lab to complete and submit the materials should you need it. Lab materials will be made available through the course website.

Assignments

Assignment descriptions and rubrics will be made available on the course website. You should submit all of your assignments through the course website.

Quizzes

Instead of a final exam, the course has several short quizzes. Each quiz will be available on the website until the last day of class (Friday, December 2nd, 2021).

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what types of assessments are there?

The course has been broken down into several deliverables. Some of these will be submitted during the lab (although, as mentioned, you'll have more time than just the lab to get this work done), while others can be done on your own time or with your team. Each deliverable has a due date range instead of a single due date. If you are having difficulty with an assignment, please chat with the teaching team as soon as possible. Additionally, if you need more time to get something done, please chat with me sooner rather than later. I almost always say yes to extensions (so long as it doesn't cause problems for the TAs who have their own schedule of due dates).

Assignments - 35%

1. Due between September 30th at 8:30 am & October 13th at 4:00 pm [10%]
2. Due between October 14th at 8:30 am & October 27th at 4:00 pm [10%]
3. Due by December 2nd at 4:00 pm [15%]

Assignment 1 will be completed individually. All other assignments will include individual and team contributions.

Lab Demos - 30%

1. Paper Prototyping Session occurs Thursday, November 3rd during class [10%]
2. Wireframe Prototyping Session I occurs Thursday, November 17th during class [10%]
3. Wireframe Prototyping Session II occurs Tuesday, November 29th during class [10%]

Lab Demos will be graded as a team.

Quizzes - 15%

1. Due between September 23rd at 8:30 am & December 2nd at 4:00 pm [5%]
2. Due between October 19th at 8:30 am & December 2nd at 4:00 pm [5%]
3. Due between November 4th at 8:30 am & December 2nd at 4:00 pm [5%]

Quizzes will be open until the last day of class (Friday, December 2, 2021) at 4:00 pm. Unless otherwise indicated, quizzes are **not** to be completed as a team.

Labs - 20%

1. Due between September 19th at 2:30 pm & September 30th at 4:00 pm [5%]
2. Due between October 3rd at 2:30 pm & October 14th at 4:00 pm [5%]
3. Due between October 17th at 2:30 pm & October 28th at 4:00 pm [5%]
4. Due between November 7th at 2:30 pm & November 18th at 4:00 pm [5%]

While there are 7 labs, you will be graded on only 4 of them. Some of the labs will be completed by you and your team, others will be completed by you.

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what happens if something is missed or late?

Missed Labs: if you are going to miss a lab, please let your team know (and if possible - me too). Together we should be able to work around your absence.

Missed Assessments: if you can't complete an assignment or quiz or lab due to medical, psychological, or compassionate reasons, please chat with me.

Accommodation of Religious Obligations: if you are unable to meet an in-course requirement due to religious obligations, please let me know **within two weeks of the start of the semester** to make alternate arrangements.

Late Deliverables: we will begin grading course deliverables shortly after the last moment they are due. If you have not submitted a course deliverable on time, it will be considered late. You may submit any course deliverable late (with the exception of in-class lab demos and quizzes which are open until December 2nd at 4:00pm) however, it may take a bit of time for us to provide feedback as we may need to prioritize other obligations to the course. Preferably, please chat with me before the last due date of a deliverable if you think you might need an extension. I will almost always grant an extension - but this will also depend on the availability of the teaching team to provide feedback. Whatever the case, we will try to work to identify a new due date so that you can be successful in the course. If something comes up suddenly and you are unable to complete a deliverable, please reach out to me as soon as possible so that we can determine options for you to complete the course work.

Regrades: if you feel your assignment has been graded incorrectly, please present your case (via email) 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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what will we learn during lectures?

WEEK	TOPICS (order/content may vary)	Course Manual	HFSD	Learning Outcome
Intro	Introduction to CIS3750	1.1-1.4	1	
Week 1	Meet the Client CES, Good Software	2.1-2.3 3.1-3.2	2	1
Week 2	User Stories & Requirements Categorizing Requirements	3.3-3.6	3,4	1
Week 3	Prioritizing Requirements Logical Flow	3.7-3.8		1
Week 4	Time Estimates Timelines	3.9, 4.1		2
Week 5	Use Cases	5.2	5,6	3
Week 6	Task & Burn Down Charts Prototype	4.2, 4.4, 4.5 5.1, 5.3		2,3
Week 7	Paper Prototype Wireframe	5.4, 5.5	8	3
Week 8	Lab Demo 1			4
Week 9	UML Diagrams Class Diagrams	5.6 5.7, 5.8	7, 8, 11	4 4
Week 10	Sequence Diagrams Lab Demo 2			4
Week 11	CRC Session Testing	5.9		4
Week 12	Lab Demo 3 Reflection			5

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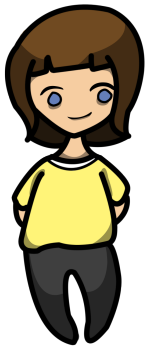

what will we learn during labs?

WEEK	TOPICS (order/content may vary)	Course Manual	Graded	Learning Outcome
Intro	**No lab**			
Week 1	**Lab 1: Rubrics & Audience Analysis**	**6.1**	**No**	
Week 2	**Lab 2: Instruction & Requirements**	**6.2**	**Yes**	**1**
Week 3	**Lab 3: Ethics & Do No Harm**	**6.**	**No**	**1**
Week 4	**Lab 4: Accessibility & Privacy**	**6.**	**Yes**	**1**
Week 5	**No lab**			
Week 6	**Lab 5: Use Cases**	**6.5**	**Yes**	**3**
Week 7	**Lab 6: Storyboarding & Prototyping**	**6.6-6.8**	**No**	**3**
Week 8	**No lab**			
Week 9	**Lab 7: UML Diagrams**		**Yes**	**4**
Week 10	**No lab**			
Week 11	**No lab**			
Week 12	**No lab**			

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what if we aren't feeling well?

While health and wellness is always important, it is particularly important this semester. As previously stated, I want you to put yourself first this semester. We need to do whatever we can to support each other, as well as our family, friends, and community. With that in mind, we need to work together, practice patience and empathy, and remain honest about our needs. Only then can we foster and promote a safe, supportive environment, as well as good physical, emotional, spiritual, cultural, and mental health and wellness for everyone.

> **If you are sick, heartbroken, or exhausted, get rest, reach out to someone, take whatever steps necessary to get well. Work is not more important than your health.** -Dr. Max Liboiron
>
> **If you are experiencing any challenges, please do not hesitate to contact me, 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 Wellness, 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
- Campus Safety Office, 24/7, x2000, Trent Building
- Good2Talk, 1.866.925.5454
- Here 24/7, 1.844.437.3427