CIS*3260 F21 Software Design IV: Course Description
Software Architecture and System Design

Lecturer: Prof. Mark Wineberg

Office Hours: After class, at the end of the scheduled Zoom lecture

Email: mwineber@ uoguelph.ca

Lectures: Zoom sessions – Tues, Thurs 1:00 pm to 2:20 pm

Labs: Zoom sessions (Q&A) – Tues 2:30 pm up to 5:20 pm
Zoom session (Tutorials) – Wed 11:30 am up to 2:20 pm

The tutorial lab time will be a mixture of practical tutorials (e.g. how to code in Ruby), and common project meeting times. As the Lab will be recorded and posted on Courselink, repeating it during the other lab would be redundant. Consequently, the Wednesday lab will be considered as the week's lab and the Tuesday Lab time will be used as a general question and answer period, which will also be recorded and posted on Courselink.

Course Calendar Description

This course is a study of software architectures and system design methodologies. This will include advanced techniques for project management and experience evaluating software tools. The course has an applied focus and will involve software design and development experiences in teams, a literacy component, and the use of software development tools.

Prerequisites: CIS*2750, CIS*3250, CIS*3760

Course Topics

- OO Design (*in depth*)
- Structural UML
- Structural Design Patterns
- Architectural Design
- Distributed Soft. Eng.
- Client-Server Design with MVC
- Component-based Soft. Eng.
- Service-Oriented Arch.

Group Project

This course includes a group project. For this project, you will participate in a group that designs an application (commonly an online two-player game using a client-server model that incorporates WebSocket technology to implement a traditional MVC architecture) which will be implemented by another group. Your group in turn will implement the design you will have obtained from another group.

Through this project you will experience the need to communicate your design clearly to others, support another team through the implementation process of your design, and effectively read and implement a design that you have not created.

Textbooks

Recommended

Head First Design Patterns	*Software Engineering* (10th *Ed*)
Eric Freeman, et.al.	Ian Sommerville
O'Reilly Media, 2004/2014	Addison-Wesley, 2015

Course Website

Course material, news, announcements, and grades will be regularly posted to the CIS*3260 Courselink Website, accessible from the uoguelph.ca front page. You are responsible for checking the site regularly.

- *Lecture Information*: The formal class notes and/or recorded Zoom sessions 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 and/or recorded Zoom sessions will be posted on the course website as soon as the instructor has time to make them available.
- *Assessments*: Assignments, project and descriptions readings material will be distributed through the course website. All assignments will be submitted via the course website. All project designs, and code will also be submitted through the course website

Grading

[45%] Group Project

[8%]	RE	Requirements & Entities Model	(*document, walkthrough, DoE*)
[8%]	DP	Preliminary Design	(*document, walkthrough, DoE*)
[12%]	DD	Detailed Design	(*document, walkthrough, DoE*)
[2%]	DF	Final Design	(*document)*
[15%]	IM	Implementation	(*code, walkthrough, feedback on support & design, personal reflection, DoE*)

[30%] Assignments

[15%]	A1	Ruby	(*code and written answers*)
[15%]	A2	Rails	(*code and written answers*)

[9%] Readings

[3%]	C1	Codeless Code P1	(*written*)
[3%]	C2	Codeless Code P2	(*written*)
[3%]	C3	Codeless Code P3	(*written*)

[16%] Tests

[8%]	Q1	Quiz 1	(*take home test*)
[8%]	Q2	Quiz 2	(*take home test*)

Your final grade is the weighted sum of all assessments shown above.

To pass the course you need *an overall grade of* 50% *or above.*

Submission

Assignments/Codeless-Code Readings:

- Assignments and Readings are submitted through a Courselink dropbox link Mondays by 9:00am

Project milestones:

- A project milestone usually will incorporate documentation/code (submitted through a Courselink dropbox link) and a walkthrough with the group over a shared Zoom meeting.
- The group will be able to sign-up for the Zoom meeting on a first-come/first-serve basis.

Quizzes:

- Quizzes are written through the Courselink quiz tool
- Quizzes are released on the Monday of the week (9:00am) and closed on the Friday by midnight
- You can take the quiz anytime during the week
- Once started:
  - you have 36 hours to complete the quiz
  - you may enter and exit the quiz at any time before your 36 hours are over,
    (*unless Friday at midnight has passed, in which case you will not be allowed back in*)
  - this does not affect the time remaining for completion
    (*36 hours from the time you started*)

Class Delivery

Lectures

- All class lectures will be held through Zoom sessions during class times, where lecture material are presented by the lecturer, and where the class will have the opportunity to ask questions live
- All zoom sessions will be recorded and distributed through Courselink to be able to re-watch for clarification etc. or for those who live in areas with unstable Internet capabilities and thus who are not able to attend live

Labs

- Lab time will be a mixture of practical tutorials (e.g. how to code in Ruby), common project meeting times, and TA hours
- As with lectures, all zoom sessions will be recorded and distributed through Courselink.
  - Consequently, repeating the tutorial during the other lab would be redundant and so the Wednesday lab will be considered as the week's lab, with the Tuesday Lab time being used as a general question and answer period (which will also be recorded and posted on Courselink).
  - Students may attend either or both Zoom sessions, regardless of which lab they are signed up for, if they wish

Walkthroughs

- Walkthroughs (project grading) will take place through Zoom sessions outside of the lecture and lab times during the week the project milestone is due
  - Walkthroughs typically are an hour long
- 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
  - When the group is signing up, make sure it is a time that all (or at least most) of the group can attend