NOTE: the following information is provided for course selection purposes only. A more comprehensive course Syllabus will be provided at the start of the course detailing policies, roles, and responsibilities.

CIS 3250 – Software Design III (Fall 2022), 0.5 credits

Lectures: MWF 8:30am-9:20am, MCKN 121
Laboratories: Section 1: Thu 11:30am-2:20pm, THRN 2420
Section 2: Fri 11:30-2:20pm, THRN 2420

Instructor: Prof. Stacey D. Scott, Associate Professor, School of Computer Science
Office: Reynolds 3308; Email: stacey.scott@uoguelph.ca; Phone: 519-824-4120 ext. 54153
Office Hours: Virtually, TBD (will be based on a poll of students' availability)

Teaching Assistants: TBD
Email: cis3250@socs.uoguelph.ca

Contact: Use cis3250@socs.uoguelph.ca email for all course-related concerns. Use course discussion boards for assignment or lecture content questions. For emergency issues, email Prof. Scott directly.

Course Delivery Notes:
Due to ongoing concerns and potential disruption due to COVID-19, this course will be taught in a mix of in-person (when safe) and virtual formats. **Lectures** and **Labs** will primarily be conducted in-person, with necessary shifts to online/virtual as needed due to COVID disruptions. To accommodate students with health concerns or life complications arising from COVID, course materials will be posted online whenever possible. Also, I've been told live streaming is possible from the assigned classroom, so I will be attempting to livestream, and / or post recorded in-person lectures during the term. Consult CourseLink for more information on accessing these resources. **Office Hours** will be conducted virtually; see CourseLink for connection information.

- **Labs: Participation is mandatory.** Labs will provide a shared time and space for individuals and groups to meet with the instructional team and work on course deliverables. When applicable, groups will meet in person to facilitate group discussions and work sessions, and if necessary, we will shift to virtual synchronous labs where you will work in breakout rooms with your team.
- If you have health issues or life circumstances that that warrant **accommodation**, please contact Student Accessibility Services as soon as possible. Also, if your circumstances warrant complete virtual participation in this course, please contact me as soon as possible to discuss options for completing the course work, especially the teamwork aspects of the course.

Course Website: http://courselink.uoguelph.ca (Login with Central login ID and password)
The course website will be used to provide:

- ***informational materials*** (e.g., videos, lecture notes, assignment handouts, course updates)
- ***electronic drop boxes*** for non-programming course deliverable submissions
- ***course discussion boards*** for asking questions and discussing issues related to course material

Required Text: Steve McConnell (2004). *Code Complete, 2nd ed.*, Microsoft Press.

Course Communications:

1. For ***lecture, assignment, or general course questions***, post to the *"CIS 3250 Course Questions" Discussion board* on the course website. Or talk to Prof. Scott or your TAs during lectures or labs.
2. For ***personal issues***, email Prof. Scott or drop into her (virtual) Office Hours (via Zoom).

Calendar Description:
This course will examine the historical development of design methodologies and working with legacy systems. It will include an examination of programming paradigms and trends in software design from the past and present. 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 2250, CIS 2500

Course Objectives:
CIS 3250 aims to provide students a strong foundation in **project management**, **teamwork**, and **essential design theory**, as well as **software engineering tools**. Achieving this goal requires learning *modern tools* to *manage team-based software projects and group communications.* You will gain experience with these concepts by working with **legacy software** in a **large team context**. By the end of the course, you should be able to:

- *Select* and *Use* effective practices and tools for managing software projects
- *Select and Use* appropriate methods and tools for tracking and controlling changes in software engineering projects (i.e. configuration management)
- *Describe* effective team behaviours and dynamics, and mitigation strategies for team breakdowns
- *Explain* and *Use* effective strategies for team communication and coordination in software projects
- *Explain and Use* effective strategies for programming in a team context
- *Explain* and *Use* effective strategies for generating and evaluating alternative design solutions at different stages of the software engineering process

Course Topics (tentative, subject to change, check CourseLink for updates):

- Course Introduction
- ***Module I – Working in Software Teams***
  - Teamwork Basics
  - Communication and Coordination Skills and Tools
  - Team Diversity and Mutual Respect
  - Collaborative Construction
- ***Module II – Project Management in Software Engineering***
  - Project Management Basics
  - Managing Construction & Configuration Management
  - Project Scheduling and Management Tools
- ***Module III – Managing Complexity and Considering Alternatives in Software Design***
  - Planning, Design Alternatives, and Managing Complexity
  - Alternatives in Software Testing – Testing Basics
  - Alternatives in Programming Languages

Grading Scheme:

- ***Theory:***
  - Tests (2): 30% (15% each)
  - Final Exam: 30%
- ***Practical:***
  - Assignments (individual and team components): 35%
  - Peer Assessments: 5%

Midterm Tests and Final Exam

Midterm Tests

There will be two tests during the term to evaluating learning of concepts throughout the term, roughly after Module I and Module II. Tests will be conducted during regular class time. They will be conducted in-person if the current public health situations allow, otherwise, they will be conducted online via CourseLink. Students with known conflict or requiring accommodation, should contact Prof. Scott as early as possible.

- Test I will be held during regular class time on TBD.
- Test II will be held during regular class time on TBD.

Final Exam

If the public health situation allows, the final exam will be conducted in-person. Otherwise, an online exam will be given via CourseLink.

- Final exam will be held on TBD.

For any exams that are shifted to online delivery:

Written portions of submitted exams may be screened through Turnitin to detect possible plagiarism, unauthorized collaboration or copying. **Also, Prof. Scott reserves the right to conduct oral interviews with students, selected at random or at her discretion, to discuss their exam content. Students who cannot provide satisfactory explanations for their responses may have their Exam marks adjusted accordingly, potentially to 0.**

Estimated Weekly Course Commitment (10-12 hours per week for this 0.5 credit course):

- 2 hours synchronous online lectures
- 4-5 hours independent study (e.g. readings, academic tasks)
- 3 hours synchronous online labs
- 1-2 independent lab preparation (video tutorials, readings, reviewing assignment instructions)

University of Guelph expects students to spend 10-12 hours per week on a 0.5 credit course. This time commitment represents student workload rather than contact hours. In CIS 3250, a key learning vehicle are the course assignments, and related lab activities. The weekly lab times will be primarily used for mini-tutorials, reviewing assignments, TA-mentored time to help individuals and groups complete assignment work. Thus, **LABS ARE MANDATORY. Individual accountability marks** will be given to assess **individual reflection, learning, and contribution to group deliverables**.