CMPT 276 - D100 Introduction to Software Engineering

Instructor(s): Brian Fraser

Calendar Objective/Description:
An overview of various techniques used for software development and software project management. Major tasks and phases in modern software development, including requirements, analysis, documentation, design, implementation, testing, and maintenance. Project management issues are also introduced. Students complete a team project using an iterative development process.

Instructor’s Objectives:
The theory and practice of software development are introduced using the Android operating system as a target device. Students will learn the standard methodologies underlying software development, plus gain experience using a number of software development tools and a revision control system. Assignments will cover learning basic Java, introductory Android, and effective use of development tools to produce small applications using established development techniques. The half term team project focuses on an Agile team experience developing an Android application. The focus of the course is on preparing students to be effective members of a software development team.

Requirements for completing the online course:
- access to a computer capable of running Android Studio, or with sufficient bandwidth to connect to SFU’s CSIL computers to run Android Studio graphically.
- internet access for participating in lectures (live streamed or pre-recorded), office hours, and quizzes and/or exams.

Prerequisites:
One W course, CMPT 225, (MACM 101 or (ENSC 251 and ENSC 252)) and (MATH 151 or MATH 150). MATH 154 or MATH 157 with at least a B+ may be substituted for MATH 151 or MATH 150. Students with credit for CMPT 275 may not take this course for further credit.

Topics:
- Requirements: system analysis and modeling, requirements specification
- High-level Design: UML, architectural, design patterns
- Implementation: coding style, code review, pair programming
- Quality assurance: unit & integration testing
- Development tools such as IDE, debugger, and revision control (Git/GitLab).
- Android application development and debugging
- Diversity and ethics of software development

Grading:
Some combination of online bi-weekly quizzes (during lecture), assignments, team project, and exams (midterm and/or final). Details to be announced first week of class.
Students must attain an overall passing grade on the weighted average of exams in the course in order to obtain a clear pass (C- or better).
Recommended Books:

Academic Honesty Statement::
Academic honesty plays a key role in our efforts to maintain a high standard of academic excellence and integrity. Students are advised that ALL acts of intellectual dishonesty will be handled in accordance with the SFU Academic Honesty and Student Conduct Policies (http://www.sfu.ca/policies/gazette/student.html).