Computing Science Course Outlines

CMPT 276 - D100 Introduction to Software Engineering

Instructor(s): Steve Pearce

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. Students will learn the standard methodologies underlying software development, plus gain experience using a number of software development tools such as the Ruby on Rails development environment and a revision control system. Assignments will cover learning to effectively use development tools and producing small web applications using established development techniques. The focus of the course is on preparing students to be effective members of a software development team. Accordingly, basic group psychology is essential to the curriculum of this course. Although students are expected to participate in group projects, the emphasis will be more theoretical.

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: Ruby on Rails, revision control
- Ethics of software development
- Fundamental theories on group psychology

Grading:
To be discussed in the 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).

Reference Books:
Software Engineering, Ian Sommerville, Addison Wesley, 2015, 9780133943030, 10th Edition

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).