Stevens Institute of Technology
2011-2012 Course Syllabus

SSW540: Fundamentals of Quantitative Software Engineering

Semester taught: Every Term	**Start and end date of the semester:** http://www.stevens.edu/registrar/
Professor Name: Robbie Cohen **Office address:** 505 Babbio Center **Office phone number:** 201 216-8561 **E-mail address:** rcohen2@stevens.edu	Office/Web Hours: on campus TBA and by appointment Course Web Address: Moodle

Overview

This course provides the student with a working knowledge of the terms, principles and methods of Software Engineering, with emphasis on the topics described in the IEEE's Software Engineering Body of Knowledge, http://www.swebok.org/. Where possible, it takes a quantitative, analytic and metrics-based point of view. It also addresses other topics and skills essential for a career in software engineering including risk and project management, embedded software development and component-based software engineering. This course focuses on the basic knowledge necessary to practice software engineering in present-day projects and to pursue further courses in software engineering.

Prerequisites

B.S. degree in Computer Science, Computer Engineering or equivalent familiarity with programming.

Learning Goals

After taking this course, the student will be able to:

- Introduce software engineering methods and best-practices in their software development projects and the software development projects they manage
- Understand the impact requirements and architecture planning have on software development and insist upon the appropriate requirements and architecture plans for future projects
- Evaluate new methods and practices in Software Engineering
- Enroll in advanced courses in Software Engineering and build on the fundamental knowledge established in the course

Pedagogy

The on-campus course includes a weekly lecture/discussion in class, a weekly quiz, online discussion items for student participation and 2 graded assignments during the term. The equivalent activities in the WebCampus course follow this schedule:

1. Monday morning – a set of lecture slides in pdf format will be posted on Moodle covering the week's topics listed on the attached schedule.

2. Tuesday morning – one or more discussion topics will be posted. WebCampus students are expected to participate in at least one online discussion each week.

3. A Wimba evening session, live or pre-recorded at which the Professor will discuss the slides. These sessions will be archived and available for viewing on Moodle throughout the term.

4. Thursday morning – ususally a weekly quiz is made available that must be completed by midnight on Sunday.

Throughout the term of the course, all students (on campus and web-campus) are required to keep a log (a journal) recording their insights on Software Engineering. At the end of the 12th week of class, at least 10 entries in Microsoft Word or ".txt" format should be compiled and submitted as completion of the Logbook Assignment.

Two examinations will be given during the term, a mid-term conducted during the 7th week of class and a comprehensive final examination during the 14th week of class.

Required Text

Sommerville, Ian, Software Engineering, 9th Edition, Addison Wesley, 2010, ISBN-10: 0137035152; ISBN-13: 978-0137035151.

Supplemental Text (recommended, not required)

Brooks, F.P The Mythical Man-month: Essays on Software Engineering, 20th Anniversary Edition, Addison-Wesley, ISBN: 0201835959.

Required Readings

About 50 pages per week are assigned from the textbook, as shown on the accompanying Course Schedule. Additional readings are posted on Moodle as resources in the scheduled week.

Assignments

The course will emphasize understanding the principles and methodologies of software engineering.

1. Quizzes – Quizzes will be posted most weeks and must be taken by the specified date and time.
2. Assignments – Each half of the course includes a 2 week, team problem assignment (a week for organizing the team, a week for getting the problem solution agreed and written).
3. Each week all students are expected to participate in the in-class discussions or online discussion forums. Online participation may be achieved either by responding to a current discussion topic posted by the professor or responding to the postings by other students on the weekly topic.
4. Logbooks with at least 10 entries must be submitted by the end of the twelth week of class. The log entries should be consolidated into one Word or PDF file.
5. Examinations will occur during the seventh and the fourteenth week of class. The dates for the mid-term and the final are found on the Course Schedule.

The assignments and their weights are as shown below:

1. Quizzes, Assignments, Discussion participation	25%
2. Logbook	10%
3. Mid-term exam	25%
4. Final	40%
TOTAL	**100%**

Grading and Criteria for Passing

(1) Take all exams and quizzes, turn in log book and other assignment in a timely fashion.
(2) Final grades will be awarded in accordance with the following scale:

Grade	Average Score
A	93 - 100
A-	90-92
B+	87 - 89
B	83-86
B-	80-82
C+	77-79
C	73 – 76
C-	70-72
F	<70