CS 6063 (1081) - Software Engineering I

(Version 1)

Fall 2013

Instructor's name & title

Professor Strauss, CCP

Department of Computer Science Engineering, Polytechnic Institute of NYU

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Office hour (2MT 10.048)	**e-mail**
M 3:00 - 5:00 pm	fstrauss@poly.edu
W3:00 - 5:00 pm (or by appointment)	

Teaching assistants/Grader - TBA

Course Information

Course level	**credits**
Graduate	3.0

Class times and location

W   6:00 pm – 8:25 pm – 2MT 9.009

Prerequisites

Graduate status and CS5403

LEARNING OBJECTIVES

Objectives

To learn software-engineering techniques that can be applied to practical software projects.

> a) ***Understanding of the full*** "software engineering" effort and alternative approaches
> b) ***Technical emphasis*** on requirements, design, development, measurement, and modeling
> c) ***Understanding management*** issues including software cost estimating and project management
> c) ***Understanding process*** applicable to the software development/integration cycle and maintenance
> e) ***Impact of technology changes*** on quality and development activities

Methods of Instruction

The primary method of instruction is lectures supplemented with related assignments, readings, and projects

Weekly Lecture Hours: 3 | Weekly Lab Hours: 0 | Weekly Recitation Hours: 0

General Content

The course emphasizes the full software-engineering approach with alternative approaches. Technical emphasis is on requirements, design, development and modeling. Management issues include software cost estimating and project management. Understanding the processes applicable to the software development/ integration cycle and maintenance along with technology changes on quality and development activities is highlighted.

Project Presentation

Each project team is required to delivery a formal in class presentation describing the technical details and processes (covering the system life cycle from idea generation to requirements elicitation through design documentation). Presentation delivery, format, and content should be based on principle of a professional presentation. Presentation worksheets will be distributed faculty and peer evaluation. All team members are expected to participate in the presentation.

Textbooks, Readings, materials

Textbook

R.S Pressman, **Software Engineering, A Practitioner's Approach,** Seventh Edition, McGraw Hill

Pressman - URL - **http://www.mhhe.com/pressman**

Supplementary readings

Kruchten,Philippe - The Unified Process – An Introduction, Addison Wesley Longman, New York, 1999.

Rubin, Kenneth - Essential Scrum, Addison Wesley, New York, 2013

Cohn, Mike – Succeeding with Agile, Addison Wesley, New York, 2013

Humphrey Watts S., Introduction to the Personal Software Process, SEI Series in Software Engineering, Addison Wesley Longman, New York, 1997.

The instructor may distribute additional material.

POLICIES, SCHEDULE AND ASSIGNMENTS
Course Policies
(Additional Policies posted at my.poly)

Attendance/lateness
Students are expected to attend lectures. Attendance is required. In case of absence, the student is responsible for the material covered during that lecture. Absence from exams will be accepted **only** if the student notified prior to the exam with an acceptable reason. A make-up exam will be given only for the exams not for quizzes.

Class participation
Class participation includes actively engaging in class dialog and discussions and formal oral presentations.

Exams and Assessments

Examinations

A midterm exam and final exam will be given as shown on the schedule. The midterm exam covers material from the beginning of the semester up to the exam. The final exam concentrates on material from the midterm to the end of the course. However, because the foundation for the material covered in the second half of the course is based on the pervious material, the final exam should be viewed as being comprehensive with emphasis on material covered during the second half of the semester. Exam questions are based on material from the text, handouts and lectures.

Systems Project

An essential requirement of this course is the systems project. Virtually all analysis and design activities are carried out in project teams, or groups, in which communication and cooperation are vital to success. The group project is intended to give students experience in performing systems development activities as part of a team.

I will be available for consulting with groups at all stages of the project. **Do NOT fall behind!** The project will be divided into milestones. The milestones will be distributed in a separate handout.

Academic dishonesty

Plagiarism, cheating, sharing of examination answers, submitting work done by others as your own, and all other forms of deception proscribed in University rules are forbidden. For the sake of your own dignity and self-esteem, it is better to get a low grade than to engage in dishonesty.

Grading: Weights and Scales

Grades

Grades are based on the two exams (midterm and final), class participation, and assignments. **All assignments must be turned in to receive a passing grade**. The weighing given to each of these factors is as follows:

Homework will be assigned and marked. Performance on the homework will be used to assess grades for students who are on the**boundary** of a grade. Homework will be discussed in class. Class participation is also considered as part of the grade.

Performance status

During the class lectures, the study material shown in the schedule will be discussed, including the questions at the end of assigned chapters. A portion of the grade will be based on answering these questions

Withdrawal

You must formally withdraw from this course to avoid a failing grade. Failure to attend class or to submit work is not enough. Information about formal withdrawal is contained in the Schedule of Classes. After the last day to withdraw, requests that must be approved by the instructor. They will be approved upon presentation of convincing evidence that unforeseeable conditions beyond the students control prevent him or her from devoting sufficient time to meeting the requirements of the course.

Facilities and Resources

Computers availability & policies

All students are required to have a computer account. The Software Engineering Laboratory is located on the second floor of Rogers Hall.

Course Calendar and Schedule

Week	Date	Chapter	Topics	Assessment (due date)	
				Homework	Project
1	9/4	Introduction 1	Introduction		
2	9/11	2	Processes		
3	9/18	3	Alternative Processes		
4	9/25	5.6	Requirements and Analysis		
5	10/2	7.8 .9. appendix 1	Modeling with UML		
6	10/9	11, 23	Design with UML		
7	10/14	Midterm Examination			
8	10/23	UML	Implement with UML		
9	10/30	17, 18, 19	Testing with Metrics		
10	11/6	Open Sources & COTS	Testing with Metrics		
11	11/13	23, 25, 26	Estimating & Sizing		
12	11/20	27, 28	Scheduling and Risk Managment		
13	11/27	14, 15, 16, 22	Q/A & Configuration Managment		
14	12/4	Software Security	Software Security		
15	12/11	Web Application and Future Trends	Web Application and Future Trends		
	12/18	Final			

<u>You should take the practice quizzes that cover each appropriate chapter (at the above URL)</u>

Course Outcomes:

1) Knowledge of different software development approaches.
2) Knowledge of modeling techniques
3) Knowledge of software development life cycle activities
4) Experience in sizing and costing software intensive systems
5) Major management strategies affecting development
6) Broad knowledge of analysis and design techniques
7) Importance of UML tools in modern systems

Professional Ethics: <u>Collaboration is not acceptable on individual assignments. As a minimum, a zero grade will be assigned to the effort.</u>