CSC/CPE 307 Introduction to Software Engineering
Spring 2008

Instructor David Janzen
Website http://www.csc.calpoly.edu/~djanzen/courses/307S08/
Email djanzen@calpoly.edu
Office 14-212
Phone (805)756-2929
Office Hours Monday, Wednesday, Friday 11:10am-noon; Tuesday 1:10-3pm

Course Description

This course introduces the field of software engineering through lecture, discussion, reading, individual assignments, and a quarter-long team project.

The catalog describes this course as follows:

> *Requirements, specification, design, implementation, testing and verification of large software systems. Study and use of the software process and software engineering methodologies; working in project teams.*

Objectives

- To learn skills required to produce and maintain a high-quality software product on time and within budget
- To know and execute principles and concepts of software requirements engineering, architecture, design, construction, testing, and maintenance
- To work effectively as a member of a team to meet project milestones
- To understand the software development lifecycle and apply a software process
- To understand and apply software metrics
- To gain experience with software configuration management
- To gain experience documenting a software-intensive system
- To effectively write and speak about software engineering

Prerequisites

CSC/CPE 103 with a grade of C- or better, and CSC/CPE 357. Not open to students with credit in CSC/CPE 308.

Required Texts

Guide to the Software Engineering Body of Knowledge: 2004 Version, IEEE, 2005; available in pdf, html, and print versions at http://www.swebok.org

Additional Reading

Periodically, additional articles will be passed out or assigned for you to find and read.

Schedule
This course will meet Monday, Wednesday, and Friday from 2:10 to 4pm in 14-256. Students are expected to attend all course meetings.

Typically the first hour will include instructor presentations and discussions. The remaining time will usually be spent on project activities, some prescribed and some delegated to team discretion.

A tentative schedule of topics and activities is attached. This schedule is subject and likely to change. All reading assignments should be completed prior to class on the day noted in the schedule.

Communication
The best place to discuss the course is during lecture and laboratory times. The second best venue is during office hours. All assignments will be placed on the course web site and announced in lecture. Most class materials are available on the course web site; be sure to check regularly.

Email will only be used for special circumstances, such as communicating time sensitive information. If you use email, put CSC 307 on the subject line to get the best response time. All students are expected to use a calpoly.edu account. Leaving phone voicemails should be a last resort.

Classroom Etiquette
To ensure a professional learning environment, the following rules will be enforced in the classroom:

- Do not eat except when food is provided for the entire class
- Do not use electronic devices that make sounds (e.g. cell phones, ipods)
- Do not use computers for anything besides presenting or taking notes when anyone is presenting

Grading
The course grade will be determined on the following factors:

1. Examinations (20%)
2. Class Participation/Discussion and Quizzes (10%)
3. Individual Assignments/Presentations/Weekly Timesheets (30%)
4. Project Artifacts, Activities, and Presentation (40%)

Examinations
Written midterm and final exams will be given. Each exam is worth 10% of the final grade. The midterm exam will be given on May 9 from 2:10 to 3pm. The final exam will be given on June 9 from 1:10 to 4pm. No late, early, or makeup exams will be given.

Classroom Participation
Students are expected to take an active role in their own learning and the learning of their peers. Students are expected to attend and be prepared for all lecture and lab sessions including reading all assigned sections prior to class. Attendance may be taken on some days and each absence will reduce the overall grade by .5% unless the instructor was notified by email prior to class with a valid, documented excuse. Announced and unannounced quizzes will be given on occasion.

Individual Assignments/Presentations
Individual assignments will be given and collected. The assignments will usually relate to the course project and will often be "turned in" by posting them to the team wiki or checking them in to the course repository. Students will be assigned presentations to be given to their team. Notes and graphics for these presentations are to be posted on the team wiki. The presentations will be graded based on the posted artifacts and the performance of teammates on related quiz questions.

Weekly Time Sheets
Weekly summary time sheets must be submitted to your team time reporter before 2:10pm on Monday for the previous week. Time sheets must use the list of activity codes provided. The team time reporter will post individual and consolidated team time metrics on their team wiki by Wednesday for the previous week. Time sheets will be graded pass/fail. Unacceptable or late timesheets will lower the overall grade by 1% per incidence. Timesheets that are never turned in will lower the overall grade by 3% per incidence.

Group Project
Much of the work in CSC307 is connected to the course project which is described at http://wiki.csc.calpoly.edu/brackets. You will work in a group to carry out each phase of the project. The project itself will have to meet standards of the instructor. Teams of approximately four members will be formed early in the course. Team members will be internally managed to deliver a number of project artifacts. Most significantly the teams will produce a working software product that meets the requirements specifications. Additionally teams will conduct regular reviews of artifacts, and collect and publish metrics. The team will present the working system and metrics to the class. Each member of the team should assume some leadership role.

The project evaluation is done as if you were a corporate employee. The project grade is assigned subjectively on an individual basis. Criteria used in determining the project grade will include action item acceptance and timely completion, quality of artifacts, self and peer evaluations, perceived leadership and teamwork skills, and quality of presentations. ***Coat-tail hanging or non-performance by an individual will result in a course grade of F. You are required to participate fully in every phase of your group project.*** You must perform as part of a team. This is paramount.

Each project deliverable must be completed in a professional way. Work may be rejected until it reaches a professional standard. If substandard work is turned in toward the end of the quarter, all group members will earn a course grade of F.

Late Work Policies
A software engineer has a responsibility to manage time effectively and turn in work on time. Most deadlines are rarely absolute; if you are having a problem, discuss it well in advance of the deadline; this advice applies to the workplace as well as any college class.

For CSC 307, the following nominal late policies apply:

- Individual Assignments
  Individual assignments are due at the beginning of class on the due date. Because your team will often depend on timely completion of assignments, late submissions will be penalized thirty percent and will receive no credit after the subsequent class meeting.
- Project deadlines
  Project deliverables must be turned in on time, even if incomplete. If a significant part of a deliverable is missing, the individual responsible will not receive credit for that deliverable. Unacceptable deliverables may be resubmitted, with a thirty percent penalty up to one week later. Some deliverables may be incomplete but still acceptable (for instance if scope/estimates were poor). Judgment decisions will be made in consultation with Dr. Janzen.
  Note: depending on circumstances, project deliverable penalties are assessed on an individual or group basis. If your group has a non-performer, turn in your deliverables on-time with an accurate credits section. The identity of the non-performer will be clear.

Integrity
All work submitted is to be your own. Cooperative study and mutual aid are healthy learning methods and are strongly encouraged. You are especially encouraged to work with your team members on project activities. However you should never copy any artifact (code, diagram, text) from another team. Cite sources of anything you have copied, summarized or discussed directly with someone else. It is cheating to copy someone's work or allow someone to copy your work. It is cheating to copy material from a publication without giving credit. Plagiarism will result in a course grade of F. When you find good ideas by other people, the best policy is to summarize others' work in your own words and cite their work as the source for the principle you state. Citing resources is not a sign of weakness of your own ideas, it is a sign that you can do research and build on others' work.