# CSC/CPE 406 Software Deployment
# Spring 2010

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## Course Description
This is the third in a three-course (academic year long) sequence. It is generally assumed that the student plans to take all three courses in the sequence in one year. The primary objective of the year-long sequence is to develop a software system for an outside customer. The primary outcome of this course is to work with a customer in teams to deploy, maintain, and enhance a software product that fulfills customer requirements.

The catalog describes this course as follows:

> *Deployment of a sizeable software product by a student team. Software maintenance and deployment economic issues. Management of deployed software: version control, defect tracking and technical support.*

## Objectives
- To learn skills required to deploy, maintain, and enhance a high-quality software product
- To know and execute principles and concepts of software deployment
- To know and execute principles and concepts of software maintenance
- To know and execute principles and concepts of software quality assurance
- To work effectively as a member of a team to meet project milestones
- To understand and apply a software process
- To understand and apply software metrics
- To learn how to estimate software project work
- To effectively write and speak about software engineering
- To understand software marketing principles
- To understand software licensing and vendor partnership issues

## Prerequisites
CSC/CPE 405

## Texts
1. Feathers, Working Effectively with Legacy Code, Prentice Hall, 2005
2. Andrews & Whittaker, How to Break Web Software, Addison Wesley, 2006 (recommended)
3. Gold Fibre Design: Project Planner Notebook No. 20-817 to be used for your status reports

## 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 10:10 to noon in 14-256. Students are expected to attend all course meetings. Typically the first hour will include instructor and student presentations and discussions. The second hour will usually be spent on project activities, some prescribed and some delegated to team discretion. Fridays will generally include a remote or face-to-face meeting with the project customer. 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 as noted in the schedule.

**Furlough Days**
All CSU faculty are required to take six furlough days each quarter during the 2009-2010 academic year. Class activities may still be planned on required furlough days.

**Communication**
The best place to discuss the course is during lecture and laboratory times. The main communication tool for the class will be the online course schedule and a wiki. Students will be expected to check both on a daily basis. Posts to the wiki should never criticize people. Constructive criticism of artifacts and ideas is acceptable. All assignments will be placed on the course web site and/or 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. All students are expected to have their calpoly.edu email accounts forward to wherever they will read email at least daily. You may email the instructor regarding personal issues only. If you use email, put CSC 406 on the subject line to get the best response time. Leaving phone voicemails should be a last resort.

**Classroom Etiquette**
To ensure a professional learning environment, the following rules will be enforced in the lecture and lab classrooms:
- 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. Midterm Exams (2 x 7.5% = 15%)
2. Student Presentations (7% for 10 min, and 3% for 5 min = 10%)
3. Class Participation/Discussion (10 x 1% = 10%)
4. Iteration Task/Time entries (4 x 0.5% = 2%)
5. Individual Journals/Status Reports (4 x 0.5% = 2%)
6. Self/Peer Evaluations (2 x 1.5% = 3%)
7. Article Summaries (2 x 1% = 2%)
8. Guest Speaker Reports (2 x 1.5% = 3%)
9. Project Activities, Artifacts, and Presentation (53%)

Letter grades will be assigned based on the expectation that an 'A' is earned with excellent work on all aspects of the course, sustained throughout the course. A 'B' is earned with very good work, perhaps excellent at times. A 'C' is earned with average work, perhaps very good at times but poor at other times. A 'D' is earned with consistently poor work.

**Examinations**
Two midterm exams will be given. Each exam is worth 7.5% of the final grade. The midterm exams will be given on May 3 and 28 from 10:10 to 11am. No early, late or makeup exam will be given except in an extreme circumstance (e.g. severe illness).

**Presentations**
Students are expected give two presentations based on material in the course textbook: one ten minute presentation from their assigned readings, and one five minute presentation on a dependency-breaking technique. Presentations must include electronic slides. Presentation resources must be posted to the course wiki within two days of giving the presentation.

**Classroom Participation**
Students are expected to take an active role in their own learning and the learning of their peers. Students will receive 1% credit for each week of acceptable participation. Acceptable participation is earned by attending, arriving on-time, participating in discussions and activities, and being prepared for all lecture and lab sessions, including reading all assigned sections prior to class. Students should make it a habit of adding meaningfully to discussions and asking relevant questions without dominating discussions. Up to three absences will be acceptable provided the student provides a valid reason, notifies the instructor by email, and receives an acknowledgement prior to class. More than three absences, for whatever reason, will result in a zero for the course participation grade.

**Iteration Task Time**
Students must track the time they spend on the group project. Each team may select a tool (e.g. Rally or Pivotal) for tracking tasks, and estimated/actual time. Students must enter all tasks, time estimates, and actual times for each iteration. At the end of each iteration, a detailed report should be printed to a pdf and posted on each team's wiki by 10:10am on the Wednesday following completion of the iteration. Task/time entries will be graded pass/fail.

**Individual Journal**
Each student must keep a course journal. Every entry in the notebook must be dated and clearly labeled and should follow the template provided. The journal must contain, at a minimum:
- Your name and team logo on the notebook cover
- Weekly entries including:
  - Log of time spent on the course / project (optional)
  - List of assigned action items
  - Notes on action item activities
  - Personal and group problems encountered

Journal entries are due on Wednesdays at 10:10am for the previous two weeks (Sunday through Saturday), and will be assigned a grade of 0 (inadequate), 1 (adequate), or 2 (excellent).

**Self/Peer Evaluations**
Each student will complete two self/peer evaluations.  As part of the final evaluation, students should create a page on their team wiki that details their individual contributions to the project. The page should identify any particular roles the individual fulfilled (e.g. recorder, team lead, quality assurance), and when they fulfilled that role (e.g. all quarter, weeks 3-5).  The page should also identify all significant contributions to artifacts. Identify what role you took on the artifact (e.g. author, editor, reviewer).  Finally, any significant tasks completed on the course project should be identified.

**Article Summaries**
Each student will complete two written summaries of technical articles from the International Conference on Software Testing 2008-2010.  The summaries should be posted to www.evidencebasedse.com and follow the prescribed format. Summaries will be graded based on the quality of writing (e.g. grammar and spelling) and content.

**Guest Speaker Reports**
Each student will attend two relevant talks outside of class and write a one page summary report. A list of approved talks will be provided.  Suggestions for additional talks are welcome, but must be approved prior to submitting the report.

**Group Project**
All of the work in CSC406 is connected to a three term (one year) project. 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 and the customer.  The project is the cornerstone of this course and is the largest basis of your course grade. Teams of approximately five 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.  Teams are expected to meet in person outside of class at least once per week.

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 possibly 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 your group project.***  You must perform as part of a team.  This is paramount.

The following is a general guideline used in determining the individual grades on the group project:

- A: volunteered for and completed significant tasks in every iteration, demonstrated strong leadership on at least two significant team deliverables, worked effectively with teammates and customer, received high praise from teammates in self/peer evaluation
- B: volunteered for and completed tasks in every iteration, many of which were significant, demonstrated leadership on at least one significant team deliverable, worked effectively with teammates and customer, received praise from teammates in self/peer evaluation
- C: volunteered for and completed tasks in every iteration, worked effectively with teammates and customer, received praise from teammates in self/peer evaluation, or at least no significant complaints
- D: volunteered for and completed tasks in some, but not all iterations, worked with teammates and customer, although perhaps communicated poorly or was unreliable, received significant complaints from teammates in self/peer evaluation
- F: failure to participate consistently on the team project

**Team Website**

Each team must maintain a project website that is kept up-to-date on a weekly basis. The team website will consist of the team's Trac wiki, and must contain the current version of all significant project artifacts including, at a minimum:

- Your team name, team logo, and team member names and contact information
- Lists of iterations, user stories, assigned action items, estimate times, and actual times for the entire team
- Project artifacts such as source code, tests, configuration files, metrics, designs, requirements traceability matrix, and deployment plan

**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; this advice applies to the workplace as well as any college class.

Project deliverables must be turned in on time, even if incomplete. If a significant part of a deliverable is missing, the individual responsible will be penalized 3 grades (e.g. A to B). Unacceptable deliverables may be resubmitted, without penalty, up to one week later. Failure to resubmit work or subsequent resubmittals will be penalized one grade per week or partial week. 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 other groups. Just cite sources of anything you have copied, summarized or discussed directly with another. 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 other 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.