CSCI 462 1 & 2   Software Engineering Practicum   Spring 2015
Syllabus

Instructor:
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Office hours: TWR: 10:00 – 11:00 or by appointment

Class place and time:
Classroom: HWEast, Room 301 Times: TR (2) 8:30-9:45 and (1)11:20-12:35
Websites: Section-1 and Section-2

Catalog description:
CSCI 462 Software Engineering Practicum - This course provides hands-on experience in the practice of group-based software development. Student teams utilize development tools and techniques to implement software solutions to moderately complex problems. This project-based component provides a framework in which students gain both understanding and insight into the application of software engineering principles.
Prerequisites: CSCI 230 and either CSCI 360 or CSCI 362

Detailed Course Description with Course Outcomes
Full document is attached to this syllabus, and includes these course outcomes:
Upon successful completion of the course, students will:

1. Gain in-depth experience from learning to participate in and successfully contribute to a FOSS/HFOSS project by designing and building bug fixes as prescribed by the project community.
2. Work in teams to design software and/or software patches for the FOSS/HFOSS project.
3. Apply modern unit-testing techniques.
4. Produce a professional-grade blog detailing their learning experiences.
5. Work with team to produce online documentation of the process and artifacts used and produced during the open source development effort.
6. Attend POSSCON with the requirements of meeting targeted presenters and of blogging about the experience.
7. Write and present orally reports of project progress.
8. Gain expertise in IRC, electronic mail lists, newsgroups, Subversion, Git, building code from repositories, bug trackers, etc.
9. Describe the ethical issues associated with software development and re-use with a focus on intellectual property issues.

Required text:
> Software Development. Allen Tucker et. al. CRC Press 2011
> Teaching Open-Source (free online). TeachingOpenSource.org 2010

Optional text:
> Practical Software Development Techniques. Edward Crookshanks

Required Conference:
> POSSCON all day on either or both of 14, 15 April 2015
> an alternative written assignment will be provided for those who cannot attend

Electronic Resources:
1) Software Engineering Body of Knowledge (SWEBOK)
2) Google Scholar; Google Documents: http://docs.google.com ;
3) The College of Charleston Libraries supply free full access to the ACM Digital library and the IEEE Computer Society Journals.
4) CofC: Career Center, Cistern Online, Center for Student Learning

Professional Development:
I highly recommend that you join the Association for Computing Machinery (ACM = $19 for a student) or the Institute of Electrical and Electronics Engineers (IEEE) Computer Society. Join our student ACM for free! A great way to advance your career is to become an active member of at least one of these professional organizations.

Attendance, class participation, online presence, and oral presentations:

> **ATTENDANCE IS MANDATORY.**
> **Each absence after 3 has a penalty of 5 of 100 final points.**

Your active participation in class will lead to your success and your team's success. You are required to maintain a professional-grade personal blog and a team wiki where you record your progress and work artifacts, and that will be used to evaluate your work. I expect you in class on time and well-prepared by having read the assigned readings, performed the assigned tasks, and updated your personal blogs and team wikis. Each student will give oral presentations on demand during the semester and an oral presentation as part of their team's final report.

Please do not attend class if you are sick or believe you are becoming ill. It is best to document your absence through an absence report in Undergraduate Academic Services.

Homework and assignment policy:
All individual and team assignments are due when specified per the class website. I will also specify how you must name and submit each assignment as appropriate. Each assignment must be professional in content and appearance. Your blogs and wikis are on-going assignments that you organize and maintain in a professional manner. Please use the blog subject lines provided on the class website.

Team projects:
Students will form into teams in the first days of class. Various team projects will be assigned during the semester. Teams will arrange to work outside of class.

Disabilities:
If you have a documented disability and approval to receive accommodations through SNAP Services, please contact me during my office hours or by appointment.

Student Conduct:
I expect you to abide by The College of Charleston Student Handbook, which includes sections on conduct and the Honor Code. If you have a question about how to interpret the Honor Code, ask before acting! I encourage collaboration on assignments and projects, but you must document the collaboration with the names of your collaborators on the assignment.

Evaluation Scheme:
      10% : Class preparation and participation
      40% : Personal Professional Blog
      40% : Team project including wiki, contributions, and presentations
      10% : One test

Grading scale: (Each absence after 3 is a penalty of 5 of these 100 points)
      Exceptional: A (90+) perform all work on time with good quality PLUS initiative
      Adequate: B (80-89) perform all work on time with good quality
      Poor: C (70-79) consistently miss deadlines and/or poor quality
      Else: F

The official Course Description for ABET accreditation follows.

Course Description
Computer Science Department, College of Charleston

Course Number: **CSCI 462**
Course Title: **Software Engineering Practicum**
Course Coordinator: **Bowring**

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Prerequisites by Topic
    OO Programming: Java or C#
    Software Analysis, Design, and Engineering
    Writing skills for design documentation
    Oral communication skills
    Teamwork experience and skills in software projects

Major Topics Covered in the Course (Required Topics)
1) Documentation: continuous and agile
2) Ethical issues including IP issues
3) Teamwork
4) Open source FOSS and HFOSS
5) Blogs and Wikis as community and communication tools
6) POSSCON (Palmetto Open-Source Conference)
7) IRC, electronic mail lists, newsgroups as collaboration tools
8) Subversion
9) Building code from repositories: dependencies and make files
10) Bug trackers and debugging the code
11) Testing and unit-testing
12) Fixing the code per the standards of the OS community
13) Release early and often

Course Narrative
The principal objective of this course is to prepare students for careers as software engineers and/or software architects by providing practical experience as team-based contributors to existing open source development projects. Other objectives include the exploration and understanding of intellectual property issues, an understanding of the dynamics of team-based development, and the development of an awareness of the ethical and cultural issues inherent in software development.

Term Team Projects
Students will work on a term team project to contribute in a concrete way to an existing open-source project of their choice. The approach is agile and iterative, so all work is "live" and continuously improved.

Course Outcomes
Upon successful completion of the course, students will:

Course Outcomes	Program Outcome Linkage			
	BS CSCI	BA CSCI	BS INFS	BS DISC
1. Gain in-depth experience from learning to participate in and successfully contribute to a FOSS/HFOSS project by designing and building bug fixes as prescribed by the project community.	a, b, c, d, e, f, i, j, k			
2. Work in teams to design software and/or software patches for the FOSS/HFOSS project.	a, b, c, d, f, i, j, k			
3. Apply modern unit-testing techniques.	b, i, j, k			
4. Produce a professional-grade blog detailing their learning experiences.	f, h, i			
5. Work with team to produce online documentation of the process and artifacts used and produced during the open source development effort.	d, f, g, h, i			
6. Attend POSSCON with the requirements of meeting targeted presenters and of blogging about the experience.	e, f, g, h, i			
7. Write and present orally reports of project progress.	d, f			
8. Gain expertise in IRC, electronic mail lists, newsgroups, Subversion, building code from repositories, bug trackers, etc.	d, i			
9. Describe the ethical issues associated with software development and re-use with a focus on intellectual property issues.	e			

Oral and Written Communications
Every student is required to maintain a professional-grade blog and to submit one blog entry per class of typically 500 words and to make two oral presentations of five minute's duration. Material is graded for grammar, spelling, style, technical content, completeness, and accuracy.

Notes
N/A