CSC 493 Senior Projects Fall 2012 Syllabus

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Course Description

Students apply modern software engineering approaches to the development of an original, well-documented, industry-strength software product. The product deliverables will include a product proposal, a specifications and requirements document, an architecture and design document, a test plan document, project status reports, and the code base implementation with quality documentation. Students will demonstrate their understanding by presenting and demonstrating the structure and applied elements of their project. Students will need to apply technical, organizational, and communication skills to this project. Successful completion of this course will meet Berea's Computer and Information Science major capstone requirement. Prerequisite: Senior Standing and permission.

Course Goals

- Plan and schedule the work of designing and implementing a larger software project.
- Follow a formal development process including the evaluation of design alternatives.
- Write a design requirements document, a specification document, and a test plan document.
- Write concise formal project status reports.
- Implement a larger software project, which is deadline-driven and based on the design requirements and specification documents.
- Test the project based on a test plan document.
- Communicate technical concepts and material effectively both orally and in written reports.
- Produce and publish a final video presentation on the project and its use.
- Create and present a final poster presentation on the project and its use.
- Develop a formal written final report describing the project.

Course website

Our course web site is located at http://faculty.berea.edu/pearcej/CSC493/. Use this site as a resource to find this syllabus, course readings, homework, labs, and other course-related information.

Text(s) and Software:

No common text or software package is required. However, students should expect to the equivalent of a typical textbook in purchasing texts and software which are appropriate to their project.

The Class Atmosphere

The members of this class constitute a learning community while modeling the business world. Learning in such a community best takes place in an atmosphere in which instructor and the students treat everyone else with mutual respect. If at any time you have thoughts, comments, or suggestions about how the class atmosphere could be improved or made into one which is more supportive of your learning, please come by or drop me a note about it. I welcome such suggestions.

Course Policies

Much of the work in this course will require use of the computer, so these policies are designed to help students better understand how to function effectively in a technology-rich environment.

- **Business Model:** This course is designed to model the workplace found in the business world, so the structure and policies are modeled with the workplace in mind. In general, if something is not acceptable in a typical workplace, it is not acceptable in class, and if something is expected in a typical workplace, it is expected in class.

- **Instructional Model:** In the workplace, most people have a supervisor, and some people have a mentor who might or might not also be their supervisor. In this course, I will try to fill both rolls. As your supervisor, I will expect weekly reports, but you will be considered a responsible worker and should expect less direct supervision in this course than in other undergraduate courses. To simulate real world situations which are typical in developing software systems, the instructor acts as the supervising project director for all projects. It is important to understand that the project director is NOT your project leader or a member of your programming team, but a senior level executive who is overseeing numerous projects. You are the project leader and will be responsible for your own time management, and you will be expected to meet the supervisor's deadlines. As your mentor, I will be there to help you to help you to find answers to your questions and to give you both guidance and support, but the primary responsibility for the successful completion of your project will rest with you.

- **Grading:** For the benefit of the students in the class, all course grade computations are continually updated, so students may check frequently on their in-progress course grade during the term.

- **Laptop and Tools:** Each student is required to bring his or her appropriately equipped laptop and any other needed software development tools to class every day.

- **Unapproved Technology:** Just as in the workplace, the in-class use of technology which is not directly related to the work of this class will not be tolerated. This typically includes programs such as Twitter, Facebook, games, e-mail, and instant messaging programs, which must all be disabled before class. Likewise, cellular phones and pagers must be disabled before class. To help students to appreciate the gravity of this policy, each and every in-class use of unapproved technology will result in a 5% reduction of the student's class participation grade.

- **Backups**: All students are expected to back-up their work, with vigilant regularity. The best way to do this is to store a copy of all work on a DVD, CD, flash drive, or some other media, and **not in another location on their laptop**. In the workplace, a supervisor is unlikely to be comfortable paying a worker twice to do the same work after a loss which occurred because the worker was negligent in following the company's back-up procedure. Thus, the normally understanding instructor will not be at all sympathetic to loss of electronic work and such will not constitute an acceptable excuse for late work, so it is the student's responsibility to protect his/her work from such heartbreaking loss.

- **Email and Web**: Electronic communication programs are useful when used appropriately, so each student is required to use the course web page to access the course schedule and to use a Berea College e-mail account to facilitate electronic communication outside of class.

- **Late work**: In general, late work will be accepted. However, the instructor recognizes that late submissions give an unfair advantage over peers in terms of time available to complete the deliverables, so the grade for each deliverable will be reduced by 10% per day late, unless other arrangements have been made with the instructor. Exceptions to this policy will be noted on the schedule. However, some items such as the practice presentation, the final video presentation and the poster session will be not accepted late--see the schedule for more details. In addition, no late work will be accepted after the last day of regular classes, Friday, December 9.

- **Citation, Academic Honesty, and Plagiarism:** In the preparation and presentation of any assigned work-including coding, reports, and presentation materials, every student shall conform to a strict standard of academic honesty. Any attempt to pass-off the ideas or work of others as your original work or to help another student to do so will be considered a violation of this standard. Thus, in all assignments, students must formally acknowledge the words and/or ideas of others taken from other students or from any print source or any electronic media, whether a direct quotation such as a cut-and paste or a paraphrase, and any omission of this standard, however minor, is dishonest and is called plagiarism. i.e. ***Plagiarism is defined as the use of anyone else's work or ideas without adequate citation.*** In the real-word, plagiarism is considered theft. In the workplace, such theft can lead to lawsuits which cost the company time, money, and prestige. In practice, in this course, this means that in everything you submit, you must clearly document what is your own original work and what is the work of others. It is certainly acceptable to use short quotes or code from others when you give accompanying adequate citation, but to omit this citation is plagiarism, which is a very serious offense, regardless of whether the plagiarism is due to intended fraudulence or simple neglect. Academic dishonesty also includes presenting fabricated data as authentic. At the first instance of plagiarism or academic dishonesty, assuming I see it as a minor one, the student will receive an "F" for that assignment.

  At the second minor offense, or any such offense I see as major, the student will "be fired" and will receive an "F" in the course. I do take this quite seriously, though it deeply saddens me each time, students have failed courses of mine because of plagiarism. In addition, ALL offenses of plagiarism, including the any minor ones, will be reported to the Associate Provost for Academic Services as detailed in the Berea College *Student Handbook*.

- **Attendance:** In the typical workplace, absences without explanation or notification are not tolerated, so attendance is expected at each class meeting unless there is a well-documented excuse (e.g. medical, legal reason). Class lectures, discussions, peer-review, and in-class project work are considered to be a vital key to success in this course. Students who come late, leave early, or fail to fully participate during the class meetings will be considered absent for that portion of the period, and such partial absences will accumulate. It is the responsibility of the student to speak to the instructor about each absence from class. If you are sick with flu-like symptoms, the Center for Disease Control (CDC) recommends that you stay home for at least 24 hours after your fever is gone except to get medical care or for other necessities. Therefore, please do not come to class if you show flu-like symptoms. Instead, e-mail me from your room and go to health services immediately. When you return to class, bring paperwork showing that you sought medical attention that day and your absence will be excused. This should be done as soon as possible and if at all possible before the absence occurs. Students who miss class are held responsible for all of the material covered, assigned, and collected during their absence. Each unexcused absence will reduce the course grade by one full letter, and any student who misses more than two classes without being excused will be "fired," and will automatically receive an "F" in the course.

- **Disabilities:** Any student who has a disability that may prevent him/her from fully demonstrating his/her abilities should contact Cindy Reed, the Disability Services Coordinator at (859) 985-3212 to discuss accommodations necessary to ensure his/her full participation in this course. If you have a physical, emotional, or mental condition which you see as hindering your full participation in this course and which may require accommodations under the law, I urge you to contact the Disability Services Coordinator. It is the student's responsibility to seek and secure such accommodations in a timely fashion, and it would be unfair to other students for me to make special accommodations for you without proper documentation, so please do not ask me to do so. After you receive a letter documenting the appropriate accommodations, please see me so I can work with you to implement them.

- **Exceptions**: Exceptions to any of the above policies will be considered on an individual case-by-case basis but will only be granted under extremely unusual circumstances.

Grading Scale

Grade ≥ 93 % A
90% ≤ Grade < 93 % A-
87% ≤ Grade < 90 % B+
83% ≤ Grade < 87 % B
80% ≤ Grade < 83 % B-
77% ≤ Grade < 80 % C+
73% ≤ Grade < 77 % C
70% ≤ Grade < 73 % C-
67% ≤ Grade < 70 % D+
63% ≤ Grade < 67 % D
60% ≤ Grade < 63 % D-
Grade < 60 % F

Grading Components

- Project Reports and Presentations (35%: graded progressively)
  - Weekly Status Reports: 15%
  - Final Video Demo 10%
  - Final Project Poster and Poster Session: 10%
- Class participation (10%: graded progressively)
  - attendance, mini-presentations, discussion, engagement, & peer-review
- Project Deliverables (55%: graded on final submission with progressive comments)
  - Overall Final Written Project Report: 5%
  - Project Concept, Vision and Scope Documents: 5%
  - Requirement Specifications Documents: 5%
  - Architecture and Design Documents: 5%
  - Test Plan and Testing Documentation: 5%
  - Codebase and Code Documentation: 5%
  - Final Project Usability and Quality: 25%

Important Minimal Standards Policy

Because the College's Capstone Requirement demands that every student meet both written and oral components standards in his or her major, any student who fails to submit a working copy of the project Codebase, the Final Written Report, the Final Video Demo or to participate in the Public Poster session will automatically fail the course.