

Computer Science Capstone II (CMP_SC 4980)

Location: Lafferre Hall W0010; **Meeting Time:** Th 3:30 – 4:45; **Instructor:** Dr. Jianlin Cheng; **Office:** EBW109; **Phone:** 882-7306; **Email:** chengji@missouri.edu; **Office Hours:** Th 2:30 – 3:30

Objectives

Learn how to use practical software engineering techniques to design and develop software to solve a real-world problem. By working on a group project proposed in Capstone I, students will gain hands-on experience of designing, implementing, testing, deploying, and documenting software. Useful software development methods such as Universal Modeling Language (UML), Object-Oriented Analysis and Design, and Extreme Programming will be practiced by students under the direction of the instructor.

Text Book and Reading Materials

No text book is required. Online reading materials about software development process, extreme programming, UML, object oriented analysis and design, unit testing, and coding standard are provided at the course web site (<http://www.cs.missouri.edu/~chengji/cs4980>).

Class Schedule

| Date | Topic | Homework Assignment |
|-------|--|---|
| 8/26 | Introduction and software development process (extreme programming) | Prepare presentations of the project (due 9/1); Read extreme programming materials |
| 9/2 | Presentation and discussion of the project (15 minutes per group) | Make a software development plan (features, tasks, platform, programming language, milestones, schedule) (due 9/15) |
| 9/9 | Presentation and discussion of project (continued) | |
| 9/16 | Review of the development plan | Revise the software development plan (due 9/22) |
| 9/23 | Object oriented design and UML | Read OOD and UML materials; Make a software design plan (due 9/29) |
| 9/30 | Discussion of software design plan | Revise the software design plan (due 10/6) <i>Peer-Review Form</i> (due 10/6) |
| 10/7 | Software construction and coding standard (rules and discussions) | Read coding standard rules; Start implementation of software units |
| 10/14 | Unit testing and debugging of software modules (rules and discussions) | Reading software testing materials; Making a unit test plan (due 10/20) |
| 10/21 | Unit testing (demo and discussion, 15 mutes per group) | Coding / testing |
| 10/28 | Unit testing (continued) | Coding / testing |
| 11/4 | Software integration | Mid-term design-coding-testing progress report and make an integration test plan (due 11/10) |
| 11/11 | Integration testing and discussion | Prepare test cases for acceptance test, due 11/17 |
| 11/18 | Software demo and acceptance test (8 | Prepare slides for final presentation (12/2) |

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| | minutest per group) | |
| 12/2 | Presentation and final demo (15 minutes per group) | Project report and <i>Peer Review Form</i> (due 12/13) |
| 12/? (to determined) | Presentation and final demo (continued) | |

Grading

Students are graded based on both instructor's and peer's evaluation. Class discussion (individual, 10%), presentation of the project (group, 5%), software development plan (group, 5%), software design plan (group, 15%), unit testing plan (group, 10%), unit demo (group, 5%), mid-term progress report (5%), integration testing plan (group, 10%), software demo (group, 10%), final software package and user manual (group, 10%), final presentation (group, 10%), final report (group, 5%). The score of a group component is $0.8 * \text{instructor's evaluation} + 0.2 * \text{peer's evaluation}$. Grading Scale:

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|----|------|----|-----|----|-----|---|-------|
| A+ | 100% | B | 80% | C- | 60% | F | < 45% |
| A | 95% | B- | 75% | D+ | 55% | | |
| A- | 90% | C+ | 70% | D | 50% | | |
| B+ | 85% | C | 65% | D- | 45% | | |

Academic Dishonesty

Academic integrity is fundamental to the activities and principles of a university. All members of the academic community must be confident that each person's work has been responsibly and honorably acquired, developed, and presented. Any effort to gain an advantage not given to all students is dishonest whether or not the effort is successful. The academic community regards breaches of the academic integrity rules as extremely serious matters. Sanctions for such a breach may include academic sanctions from the instructor, including failing the course for any violation, to disciplinary sanctions ranging from probation to expulsion. When in doubt about plagiarism, paraphrasing, quoting, collaboration, or any other form of cheating, consult the course instructor.

ADA

If you need accommodations because of a disability, if you have emergency medical information to share with me, or if you need special arrangements in case the building must be evacuated, please inform me immediately. Please see me privately after class, or at my office.

Office location: _____ Office hours: _____

To request academic accommodations (for example, a notetaker or extended time on exams), students must also register with the Office of Disability Services, (<http://disabilityservices.missouri.edu>), S5 Memorial Union, 882-4696. It is the campus office responsible for reviewing documentation provided by students requesting academic accommodations, and for accommodations planning in cooperation with students and instructors, as needed and consistent with course requirements. For other MU resources for students with disabilities, click on "Disability Resources" on the MU homepage.

Intellectual Pluralism

The University community welcomes intellectual diversity and respects student rights. Students who have questions or concerns regarding the atmosphere in this class (including respect for diverse opinions) may contact the Departmental Chair or Divisional Director; the Director of the Office of Students Rights and Responsibilities (<http://osrr.missouri.edu/>); or the MU Equity Office (<http://equity.missouri.edu/>), or by email at equity@missouri.edu. All students will have the opportunity to submit an anonymous evaluation of the instructor(s) at the end of the course.