CSE 435 Software Engineering

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Office: 3110 Engineering Building
Office Hours: Mondays and Wednesdays 2 PM - 3 PM and by appointment

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Helproom Hours: Wednesdays 2-4 PM

Credits: 3

Course web: http://www.cse.msu.edu/~cse435

Description: Software lifecycle including specification, design, coding, testing, and verification of a software product. Stepwise refinement and traceability. Software maintenance and documentation.

Time and location:
Mondays and Wednesdays 12:40 PM - 2:00 PM
204 Natural Sciences Bldg

Prerequisites:
- CSE 331 Algorithms and Data Structures
- CSE 335 Object-oriented Software Design

Required Text:
An Introduction to Software Engineering, Laurie A. Williams (2013)

Recommended Text:
UML Bible, Tom Pender (2003)

Course Objectives
This course is designed to present students with an overview of Software Engineering. Students will be exposed to and apply current technology used to develop software. Both the theoretical and practical aspects of software engineering will be presented and applied in the course. Students will apply software engineering techniques to homework assignments and software project elements throughout the course. The objective of the laboratory portion of the course is to expose students to commonly used tools for software engineering. Students will have opportunities to develop and / or improve their technical writing and software development skills during the course of the term, with particular analysis placed on analysis and design.

Topics to be covered
- Software process and project planning
- Requirements engineering
- Design strategies
- Informal and formal specification and analysis techniques
- Model-driven development
- Testing techniques
- Software product lines
- Prototyping and presentation

Graded work:
Grades will be posted on D2L (d2l.msu.edu). Graded assignments will be divided into the following four categories.
- Homework (15%)
- Exams (40%)
- Project (40%)
- Class Participation (5%)

Grading:
The final grades will be assigned based on the following scale. The instructor reserves the right to make changes to the grading scale. Specifically, the score required to obtain each mark may be lowered.

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<thead>
<tr>
<th>Score</th>
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<tbody>
<tr>
<td>4.0</td>
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<td>3.5</td>
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<td>3.0</td>
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<td>2.5</td>
<td>75%</td>
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<td>2.0</td>
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Project
Not turning in one of the project deliverables on the due date may result in the student receiving a 0 for the project component of their respective grades. After each deliverable, each team member will be completing peer review forms to assess the contributions of each team member, including self-assessment.

Examinations
Two exams will be given. The exams will contain questions covering material in the text, required reading, homework (including laboratory exercises, project assignments, in-class discussions, and lectures).

Make-up Exams
No make-up exams will be given except for documented illness or personal emergency. To be eligible for a make-up, you must notify the instructor or the department office prior to the time of the exam and provide documentation for the situation when arranging the makeup. A student not taking an exam will receive a grade of 0.

Policy about late work
All assignments (homework and project related assignments) are due at the beginning of class unless otherwise noted by the instructor. Late work is not accepted without prior approval.

In the case of a documented crisis, such as an illness, the student should submit an official document to arrange for alternate grading. Advance notification is required for late submission unless this is impossible.

In-class exercises
In-class exercises will be distributed and collected in most classes. The class participation score will be decided based on the number of submitted in-class exercises. You may miss up to three in-class exercises without penalty.

Academic Integrity
Article 2.3.3 of the Academic Freedom Report states: The student shares with the faculty the responsibility for maintaining the integrity of scholarship, grades, and professional standards. In addition, CSE adheres to the policies on academic honesty specified in General Student Regulation 1.0, Protection of Scholarship and Grades; the all-University Policy on Integrity of Scholarship and Grades; and Ordinance 17.00, Examinations. (See Spartan Life: Student Handbook and Resource Guide and/or the MSU Web site.)

You are expected to develop original work for this course. Therefore you may not submit course work you completed for another course to satisfy requirements for this course. Students who violate MSU rules may receive a penalty grade, including but not limited to a failing grade on the assignment or in the course. Contact the instructor if you are unsure about the appropriateness of your course work. (See also https://ombud.msu.edu/academic-integrity/student-faq.html)

Changes
This syllabus is subject to change. The changes will be announced in class and then reflected in this document.

Acknowledgments
Parts of this syllabus, the lectures, and assignments are based on works from the MSU CSE faculty.