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CSCI 426.01: Advanced Programming Theory/ Practice I

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Course Syllabus

Fall 2018

Instructor: Yolanda Reimer

Office location: SS 416

Office hours: Mon & Wed 12-2pm; or by appt

Email: reimer@cs.umt.edu

Text: There is no required textbook for this class. Readings will be assigned from various resources throughout the semester.

Course Description

This class is your senior CS capstone experience. It provides the opportunity for you to coalesce the technical skills you have acquired during your time in our program to develop a software product, but also to develop additional crucial skills like project management, leadership, professionalism, communication, and team building. You will work together with a group of other students to design, develop, implement, and test real-world software. You will work with and report to an actual client throughout the semester in addition to the class instructor. At the end of the semester, you will submit a final report and make a formal presentation of your work.

(ABET) Student Learning Outcomes

Upon successful completion of this class, students should have:

- An ability to apply knowledge of computing and mathematics appropriate to the program's student outcomes and to the discipline
- An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution
- An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs
- An ability to function effectively on teams to accomplish a common goal
- An understanding of professional, ethical, legal, security and social issues and responsibilities
- An ability to communicate effectively with a range of audiences
- Recognition of the need for and an ability to engage in continuing professional development
- An ability to use current techniques, skills, and tools necessary for computing practice

Prerequisites

The prerequisites for this class are CSCI 205, 232, 323 and M 225, or consent of the instructor. I will waive prerequisites only for exceptional circumstances.

Course Evaluation: Your grade for the course will be determined by the following elements. Some of these elements are individually-based, and others are group-based. For group-based items, all team members will receive the same grade unless I learn that some are not contributing equally. In those cases, I reserve the right to downgrade certain team members.

Course Evaluation: Your grade for the course will be determined by the following elements. Some of these elements are individually-based, and others are team-based. For team-based items, all team members will receive the same grade unless I learn that some are not contributing equally. In those cases, I reserve the right to downgrade certain team members.

[team grade] Status reports/updates: (10%)

These will happen frequently throughout the semester. You will meet with the class instructor to present a formal update on team progress. All group members must be present for these status updates. If you are absent, you will receive a zero for that update. In addition, all teams are required to email their clients once a week with an update of progress.

[individual grade] Class attendance: (10%)

While there will be class periods where I present and we discuss topical materials in a more traditional format, there will also be many other periods dedicated to status updates, group work, and client meetings. Students are expected to attend all class periods. Attendance will be taken and it will count substantially towards your final grade. If you are late for class, attendance points will be deducted. You shouldn't be late for, or miss, a meeting with the client, so don't be late for, or miss, a meeting with the class.

[individual grade] Class engagement: (15%)

Your interest and engagement in whatever is going on in-class at any given time will be assessed by me, the instructor, over the course of the semester and will count substantially towards your final grade. Sleeping in class, yawning repeatedly in class, looking at your phone, or engaging in activities other than what the group is doing during meeting time all constitute a low level of class engagement and will detract significantly from your final grade. On the other hand, following along, looking alert, asking questions, offering opinions, contributing to discussions, etc., are all activities that indicate a high level of class engagement and thus will positively impact your final grade.

[team grade] Project Deliverables: (40%)

Throughout the semester, your team will be required to submit various projects deliverables. These will include client contracts, requirements specification and analysis documents, design documents, etc. All such deliverables will be stored and saved in a 3-ring binder.

[team grade] Client Evaluation: (10%)

Two or three times throughout the semester, I will ask your client(s) to evaluate your team.

[individual grade] Peer Evaluation: (5%)

You will both evaluate and be evaluated by your peers in a confidential manner numerous times throughout the semester. How your peers evaluate your individual contributions to the success and progress of the team will count for 5% of your final grade.

[team grade] Final Binder and Formal Presentation: (10%)

At the end of the semester, your team will submit your deliverable binder and give a formal presentation to the rest of the class and others that will be invited to attend. All group members should participate (i.e., talk) during this presentation.

Graduate Increment

If you are a graduate student enrolled in this course, you must additionally satisfy the following requirements:

1. Be willing to accept the role of group project manager if requested by the course instructor. This responsibility involves acting as primary contact between team and client, taking a leading role in work allocation, ensuring completion deadlines are met, and facilitating disagreements that may arise among the team.
2. A teaching demonstration related to a topic germane to the field of Software Engineering and Product Development, and approved beforehand by the instructor. The teaching demonstration will require independent research into the topic and a 30-40 minute presentation to the class that will be scheduled at an appropriate point in the semester.

Late Work Policy

Late work will **NOT** be accepted.

Academic Dishonesty

All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code. The Code is available for review online at

<http://www.umt.edu/vpesa/Dean%20of%20Students/default.php>

Additional class policies and information:

- If you miss a class, you and you alone are responsible for the material covered. This includes handouts, schedule changes, and lecture notes.
- For important dates and deadlines related to classes, visit: <http://catalog.umt.edu/academics/policies-procedures>
- Also in the University catalog, review the policy on **incompletes**. In particular, note that incompletes can only be assigned when the student has “been in attendance and doing passing work up to three weeks before the end of the semester.” Incompletes will not be issued simply to prevent a failing grade.
- Students with disabilities will receive reasonable modifications in this course. Your responsibilities are to request them from me with sufficient advance notice, and to be prepared to provide verification of disability and its impact from Disability Services for Students. Please speak with me after class or during my office hours to discuss the details. For more information, visit the Disability Services for Students website at <http://www.umt.edu/disability>.

Questions? Email reimer@cs.umt.edu