Syllabus

Please read this sheet carefully, and save it for future reference.

Instructor

<table>
<thead>
<tr>
<th>Name</th>
<th>Office</th>
<th>Phone</th>
<th>Email</th>
<th>Office hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matthew Hertz, Ph.D.</td>
<td>352 Davis</td>
<td>645-4736</td>
<td><a href="mailto:mhertz@buffalo.edu">mhertz@buffalo.edu</a></td>
<td>By appointment</td>
</tr>
</tbody>
</table>

Teaching Assistants

See course website.

Course Information

Credit hours:
- CSE 442 Software Engineering – 4 credits
- CSE 542 Software Engineering Concepts – 3 credits

Lectures:
- TTh at 9:00 – 12:15PM in NSC 216

Course Website:
- [www.cse.buffalo.edu/~mhertz/courses/cse442](http://www.cse.buffalo.edu/~mhertz/courses/cse442)

Course Description

Examines in detail the software development process. Topics include software life-cycle models; architectural and design approaches; various techniques for systematic software testing; coding and documentation strategies; project management; customer relations; the social, ethical, and legal aspects of computing; and the impact of economic, environmental, safety, manufacturability, and sustainability factors on design. Students in this course participate in a real-world project from conception to implementation.

Using a semester-long team-project of the students’ choosing, the class provides a first-hand experience using proper agile processes. Students must stay up-to-date with both the course and the project and do their best to put these topics into practice. While many mistakes are expected, the intent is that students appreciate the important of their software engineering choices and can avoid duplicating these mistakes later in the term and (more important) in their future careers.

The course website contains a detailed, day-by-day schedule of topics to be covered.

Prerequisites

Students enrolled in CSE442 must have passed CSE250 and be a declared Computer Science, Computer Engineering, or Bioinformatics major. Given the intensity of work in this course, no exceptions to these requirements can occur.

Textbook and Materials

There is no required textbook for this course nor any required materials. There will required readings throughout the term, but these readings will be a mix of articles by practicing software engineers and descriptions of how to carry these ideas through. Readings will be available as links on the course website and must be completed for the lecture in which they are listed.
Student Learning Outcomes
This course serves as a capstone course for the computer science major. It covers all 6 student learning outcomes from the ABET Computer accreditation standards. A mapping of the student learning outcomes and instruments used to assess these outcomes are:

<table>
<thead>
<tr>
<th>Upon successful completion of this course a student will be able to...</th>
<th>Assessment Instruments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.</td>
<td>Activities, Final Presentation</td>
</tr>
<tr>
<td>2. Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program’s discipline.</td>
<td>Activities, Course Project</td>
</tr>
<tr>
<td>3. Communicate effectively in a variety of professional contexts.</td>
<td>Course Project, Final Presentation</td>
</tr>
<tr>
<td>4. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.</td>
<td>Activities</td>
</tr>
<tr>
<td>5. Function effectively as a member or leader of a team engaged in activities appropriate to the program’s discipline.</td>
<td>Course Project (Self- and Peer-Assessments)</td>
</tr>
<tr>
<td>6. Apply computer science theory and software development fundamentals to produce computing-based solutions.</td>
<td>Activities, Course Project</td>
</tr>
</tbody>
</table>

Computing Resources
You will be provided with a CSE computing account. You may use the lab facilities in Baldy 19. These facilities are available for use as listed on the course website. They are on card-access - use your UB card to open the door. For your own safety, and to protect the equipment in the lab, do not open or hold the door open in order to allow other people to gain entry to the lab. All students authorized to use the lab have card access.

Befitting the course level, students are expected to be proficient at using the machines in the lab and the Linux operating system. While some support can be provided, teams will need to do whatever learning is required to gain any missing expertise in this environment. A lack of familiarity with your chosen tools is NOT an acceptable excuse for a lack of work. Information about the CSE computing environment can be found at [https://wiki.cse.buffalo.edu/services/](https://wiki.cse.buffalo.edu/services/)
Course Requirements

Lectures
For all but a few lectures, students will have assigned readings. These readings are listed on the course webpage. Lectures will expand and reinforce material from those readings with an assumption students have completed it. The PowerPoint decks will be made available after lectures via the course website.

Lectures will present practical applications of these concepts with the expectation that students incorporate this into their project workflow. Additionally, the class will include occasional activities to provide a chance to reflect and review these concepts. It is important that students remain up-to-date with this material and seek additional help whenever they struggle.

Class attendance is mandatory; this policy discusses enforcement. If you miss a class, you are responsible for talking to your classmates, TAs, or the instructor to find out what happened. If must miss class for an extended period of time, notify your instructor as soon as possible, and see your instructor immediately upon your return in order to determine how to catch up. If you have missed a significant portion of the semester, it may be recommended that you resign from the course.

Time outside of class
Meetings outside of planned office hours are possible, but you will need to talk to the instructor and find a time that is available in their schedule.

New York State Board of Regents regulations specify for every hour of time spent in lecture or recitation, students are expected to spend 2–3 hours on work outside of class. This means that you should expect to spend at least 12 hours each week on readings and working on your project.

Accessibility Resources
25 Capen Hall, Tel: 645-2608, TTY: 645-2616, Fax: 645-3116  www.buffalo.edu/accessibility
If the Accessibility Resources office has determined that you are eligible for class accommodations, such as recruiting note-takers, readers, or extended time on exams or assignments, you must provide the course instructor with written documentation before any accommodation can be provided.

Counseling Center
120 Richmond Quad, Tel: 645-2720, Fax: 645-2175  ub-counseling.buffalo.edu
The Counseling Center staff is trained to help you deal with a wide range of issues, including how to study effectively and how to deal with exam-related stress. Services are free and confidential.

Distractions in the Classroom - Behavioral Expectations – UB Policy
Classroom “etiquette” expectations include:
- Attending classes and paying attention. Do not ask the instructor in class to go over material you missed by skipping a class or not concentrating;
- If you must enter a class late, do so quietly and do not disrupt the class by walking between students and the instructor. Do not leave class unless it is an absolute necessity and then leave by the least disruptive means possible;
- Not talking with other classmates while the instructor or another student is speaking;
- If you have a question or a comment, please raise your hand, rather than starting a conversation about it with your neighbor;
- Turn off your cell phones, pagers, and other noise making devices. If you need to keep the device on, place it in silent/vibrate mode so it will not disturb the class;
- Avoid audible and visible signs of restlessness. These are both rude and disruptive to the rest of the class;
- Focus on class material during class time. Sleeping, talking to others, doing work for another class, reading the newspaper, checking email, and exploring the internet are rude and unacceptable;
- Not packing bookbags or backpacks until the instructor has dismissed class.
Grading Policy

Each student’s grade is computed from a weighted average of the following items:

<table>
<thead>
<tr>
<th>Item</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Sprint 1 Results</td>
<td>20%</td>
</tr>
<tr>
<td>Sprint 2 Results</td>
<td>25%</td>
</tr>
<tr>
<td>Sprint 3 Results</td>
<td>25%</td>
</tr>
<tr>
<td>Sprint 4 Results</td>
<td>20%</td>
</tr>
<tr>
<td>Sales Video</td>
<td>10%</td>
</tr>
</tbody>
</table>

If necessary, the instructor may revise how the final grade will be calculated. In this situation, changes will be announced during lecture and an announcement will be sent via e-mail to each student’s UB e-mail account. Each item within the course grade is described below.

The final letter grade is based upon the following cutoffs:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Cutoff</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>93+</td>
</tr>
<tr>
<td>A-</td>
<td>90-92</td>
</tr>
<tr>
<td>B+</td>
<td>87-89</td>
</tr>
<tr>
<td>B</td>
<td>83-86</td>
</tr>
<tr>
<td>B-</td>
<td>80-82</td>
</tr>
<tr>
<td>C+</td>
<td>77-79</td>
</tr>
<tr>
<td>C</td>
<td>73-76</td>
</tr>
<tr>
<td>C-</td>
<td>70-72</td>
</tr>
<tr>
<td>D+</td>
<td>67-69</td>
</tr>
<tr>
<td>D</td>
<td>60-66</td>
</tr>
<tr>
<td>F</td>
<td>0-59</td>
</tr>
</tbody>
</table>

If necessary, the instructor may revise these cutoffs downward.

**Sprint 1 (20% of total course grade), Sprints 2 & 3 (25% of total course grade each), & Sprint 4 (20% of total course grade)**

Each team will complete their project over a series of 4 sprints. The deadlines for each of these sprints will be:

- Sprint 1 – Jun. 6th
- Sprint 2 – Jun. 13th
- Sprint 3 – Jun. 20th
- Sprint 4 – Jul. 2nd

A detailed rubric used to grade the student work will be made available on the course website. The grading for each sprint will be accomplished by having the team give an end-of-sprint presentation (including a demo of their current release) to the instructor. During this presentation, it is the team’s responsibility to demonstrate that they met each of the criteria from the grading rubric. They will also need to answer questions the grading staff have.

Details about how to sign up for these end-of-sprint presentations and grades will be shared by the team will occur closer to each of the deadlines.

**Sales Video (10% of total course grade)**

Students will create a video in which they demo their project in a style and with content that is appropriate for sending to potential clients. These presentations will be submitted as a video. **All students are required to participate and speak in their group’s video.** A detailed grading rubric for these videos will be available on the course website several weeks before the end of class. These videos will be due on the final day of class.
Academic Integrity

Source: http://www.cse.buffalo.edu/undergrad/policy_academic.php

The academic degrees and the research findings produced by our Department are worth no more than the integrity of the process by which they are gained. If we do not maintain reliably high standards of ethics and integrity in our work and our relationships, we have nothing of value to offer one another or to offer the larger community outside this Department, whether potential employers or fellow scholars.

For this reason, the principles of Academic Integrity have priority over every other consideration in every aspect of our departmental life, and we will defend these principles vigorously. It is essential that every student be fully aware of these principles, what the procedures are by which possible violations are investigated and adjudicated, and what the punishments for these violations are. Wherever they are suspected, potential violations will be investigated and determinations of fact sought. In short, breaches of Academic Integrity will not be tolerated.

Departmental Statement on Academic Integrity in Coding Assignments and Projects
All academic work must be your own. Plagiarism, defined as copying or receiving materials from a source or sources and submitting this material as one's own without acknowledging the particular debts to the source (quotations, paraphrases, basic ideas), or otherwise representing the work of another as one's own, is never allowed. Collaboration, usually evidenced by unjustifiable similarity, is never permitted in individual assignments. Any submitted academic work may be subject to screening by software programs designed to detect evidence of plagiarism or collaboration.

It is your responsibility to maintain the security of your computer accounts and your written work. Do not share passwords with anyone, nor write your password down where it may be seen by others. Do not change permissions to allow others to read your course directories and files. Do not walk away from a workstation without logging out. These are your responsibilities. In groups that collaborate inappropriately, it may be impossible to determine who has offered work to others in the group, who has received work, and who may have inadvertently made their work available to the others by failure to maintain adequate personal security. In such cases, all will be held equally liable.

Departmental Policy on Violations of Academic Integrity
The CSE Department has a zero-tolerance policy for AI violations.

All AI violations will be reported to the department, school, and university, and recorded.

Even a 1st offense will receive an "F" for the course unless the instructor finds there are mitigating factors that make it appropriate to reduce the penalty. Under departmental policy, subsequent AI violations must result in an "F" grade, with no exceptions for the form or course in which the earlier violation occurred.

Course Policy on Violations of Academic Integrity
Reflecting the team-based nature of our industry, almost all of the work you do in this class will be done in your group. Any work submitted for credit can only include work completed by the group members and in the manner the assignment specified. If another group member is attempting to include work that would violate this policy, you are responsible for informing the instructor.

Between instructor office hours, UTA office hours, Piazza, e-mail, and course slides, students have sufficient resources to have their questions answered. There is no reason why students should violate AI policies. While a reduced sanction from this policy is possible, it is extremely unlikely that the instructor will deem it appropriate.