Syllabus

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

Instructor

<table>
<thead>
<tr>
<th>Name</th>
<th>Office</th>
<th>Email</th>
<th>Office Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matthew Hertz, Ph.D.</td>
<td>352 Davis</td>
<td><a href="mailto:mhertz@buffalo.edu">mhertz@buffalo.edu</a></td>
<td>Mon. 3:00 – 3:55PM in Davis Hall</td>
</tr>
</tbody>
</table>

Course Information

Credit hours:

CSE 404 Software Project Management – 3 credits

https://cse.buffalo.edu/~mhertz/courses/cse404/

Course Description

This course helps students develop the skills needed to oversee the development of software. The course covers tools used at every point in the software lifecycle and the decision-making process necessary to use them effectively. Topics will include requirements gathering, task decomposition, software design and architecture, test development and analysis, tool selection, and leadership. At the end of the term, students will be able to lead teams of developers to complete a successful software project from kick-off through post-delivery support.

Learning Outcomes

Course Learning Outcomes

Students who successfully complete this course will be able to:

1. Create documents which communicate what must be done for the project to be considered a success
2. Create a project development schedule and describe the proper tools which track progress on that schedule
3. Evaluate a software engineering document (i.e., formal requirements, software design, test plan, tool choice, or piece of code) and explain potential weaknesses and how those weaknesses could be addressed
4. Describe how project managers can track the performance each developer on their team
5. Communicate the current status of a software project in a manner appropriate to the profession
6. Use source code management tools appropriately and effectively

Program Outcomes and Competencies

This course is an elective for students completing the BS Computer Science program, accredited by the Computing Accreditation Commission (CAC) of ABET.

The course covers the following CAC student outcomes, for which graduating students must demonstrate:

(CAC-1) Analyze a complex computing problem and apply principles of computing and other relevant disciplines to identify solutions.
(CAC-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.
(CAC-3) Communicate effectively in a variety of professional contexts.
(CAC-4) Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
(CAC-5) Function effectively as a member or leader of a team engaged in activities appropriate to the program’s discipline.
### Student Learning Outcomes mapping

<table>
<thead>
<tr>
<th>Course Learning Outcome</th>
<th>CS ABET Outcome</th>
<th>Sample Assessment Method</th>
<th>Assessment types</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create documents which communicate what must be done for the project to be considered</td>
<td>1,2</td>
<td>Give students real-world problems and have them develop user stories expressing these</td>
<td>In-Class Activity</td>
</tr>
<tr>
<td>a success</td>
<td></td>
<td>requirements in a computing-specific manner</td>
<td>Status Reports</td>
</tr>
<tr>
<td>Create a project development schedule and use the proper tools which track progress on</td>
<td>5</td>
<td>Ask student to explain what a burn down chart is and how it would be used by a team</td>
<td>In-Class Activity</td>
</tr>
<tr>
<td>that schedule</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluate a software engineering document (i.e., formal requirements, software design,</td>
<td>1,2,4</td>
<td>Provide the students with coding sample, ask them to review this code, and then have</td>
<td>In-Class Activity</td>
</tr>
<tr>
<td>test plan, tool choice, or piece of code) and explain potential weaknesses and how those</td>
<td></td>
<td>them explain potential bugs and rank the severity of these bugs</td>
<td></td>
</tr>
<tr>
<td>could be addressed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Describe how project managers can track the performance each developer on their team</td>
<td>4,5</td>
<td>Ask students to describe different ways of meeting with developers they oversee and which</td>
<td>In-Class Activity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>they think is best</td>
<td>Status Reports</td>
</tr>
<tr>
<td>Communicate the current status of a software project in a manner appropriate to the</td>
<td>3</td>
<td>Have students present the results of a project on which they are working</td>
<td>Presentation</td>
</tr>
<tr>
<td>profession</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use source code management tools appropriately and effectively</td>
<td>5</td>
<td>Have students review and evaluate their peers GitHub repos</td>
<td>In-Class Activity</td>
</tr>
</tbody>
</table>

Course support of learning outcomes: 0 – not supported, 1 – introduce, 2 – practice, 3—display mastery

<table>
<thead>
<tr>
<th>CS ABET Outcome</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>0</td>
</tr>
</tbody>
</table>

### Prerequisites

Students either need to have completed CSE442 - Software Engineering or receive instructors’ permission before taking this class.

### Textbook

There is no textbook for the course. All needed materials will be provided via links of online resources that will be posted on the course website.
Computing Resources
You will be provided with a CSE undergraduate computing account. You may use the undergraduate lab facilities in Baldy 21. 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.

Information about the CSE computing environment can be found at,

https://wiki.cse.buffalo.edu/services/

You are expected to use your UB e-mail account for all communications with course staff. Always include your full and an informative subject line for your e-mail. Any communications with course staff (professors and teaching assistants) are expected to be professional.

Course Requirements
While the course only includes a lecture component, students will need to invest significant time outside of class applying these concepts to a real project. If you do not participate fully both in class and in applying these concepts outside of class, you should not expect to do well in the course.

Lectures
The conceptual and theoretical course content will be delivered primarily in the lectures, complemented by the readings posted on the course website. You must review readings prior to attending a lecture, and you are expected to review the readings again, along with any notes you took, after lecture. You must attend only your assigned section unless previous arrangements have been made with the instructor.

Attendance in all lectures is critical to your success in this course. If you are unable to attend a lecture because of sickness or similar reasons, get notes from a classmate. If you are out of class for an extended period of time because of sickness, 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 is recommended that you resign from the course.

Project Manager Meetings
One of the most valuable learning experiences in this course comes from students serving as a Project Manager for two (2) different groups’ semester-long projects in the CSE442 – Software Engineering course. At the end of the 2nd week of the term, students will be assigned a weekly meeting time during which they will meet with each of these groups. These meetings will occur outside of the lecture and will take about 1 hour (so each meeting will be scheduled to take 30 minutes). This will start in the 3rd week of the term and continue through the remainder of the term.

Besides providing you with an opportunity to practice the project management skills being discussed in lecture, these experiences will be the basis of the biweekly status reports and the end-of-semester periodic performance evaluation. There will also be in-class activities that draw upon your work as a project manager. It is critical that these meetings occur each week.

Time outside of class
Office hours offer you the opportunity to ask more individual questions about the course material than can typically be addressed in lecture. The instructor has scheduled office hour and these are held on a first-come first-served drop-in basis. No appointment is necessary to attend office hours.

Individual appointments may be arranged, if needed, as schedules allow.

In this course, as in any course, you are expected to put in additional study time beyond the scheduled class times. Professors generally expect that for each credit hour a class carries a typical student will put in 2 – 3 hours of time each week outside of class. Since this is a 3 credit course that translates into 6 – 9 hours of time outside of lecture times, each week. As a rough guide, you should expect to spend at least the following time working on this course, each week: lectures (3 hours), readings (3 hours), practical practice and individual study (2 hours).
Course Requirements and Grading Policy

The following indicates the grade breakdown which will be used in assigning grades in the course. We reserve the right to make adjustments if we deem them to be necessary. Any changes will be communicated to the class in writing via e-mail to each student’s UB e-mail account.

The course is graded out of 1000 possible points, distributed as follows:

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Quantity</th>
<th>Total points</th>
<th>Details</th>
<th>Date(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-Class Activity</td>
<td>35</td>
<td>350</td>
<td>The last half-hour of most class meetings will have students answering questions applying the content from that day’s reading and lecture</td>
<td>Most class meetings</td>
</tr>
<tr>
<td>Status Reports</td>
<td>6</td>
<td>360</td>
<td>Every other Friday, students will need to submit a status report on their groups' projects. A detailed grading rubric will be shared along with an explanation of these reports the first week of class</td>
<td>Weeks 4, 6, 8, 10, 12, and 14</td>
</tr>
<tr>
<td>Presentation</td>
<td>1</td>
<td>90</td>
<td>Each student will need to present a project on which they worked during the semester</td>
<td>Week 14</td>
</tr>
<tr>
<td>Periodic Performance Evaluation</td>
<td>1</td>
<td>200</td>
<td>This is a private 30-minute presentation taking the form of an annual performance review. During this presentation, students will need to present their group's project and justify their performance. A detailed grading rubric and more details on these presentations will be shared in class.</td>
<td>These will be scheduled after the last day of class and are used in lieu of a final exam</td>
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</tbody>
</table>

Overall course grade

The table below gives the points to letter grade mapping for the course. We reserve the right to adjust the cut-offs. Cut-offs will only be adjusted lower (e.g. the cut-off for an A may be moved from 900 to 899), never higher.

<table>
<thead>
<tr>
<th>Points earned</th>
<th>Letter grade</th>
<th>Points earned</th>
<th>Letter grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>900-1000</td>
<td>A</td>
<td>700-739</td>
<td>C+</td>
</tr>
<tr>
<td>860-899</td>
<td>A-</td>
<td>660-699</td>
<td>C</td>
</tr>
<tr>
<td>820-859</td>
<td>B+</td>
<td>620-659</td>
<td>C-</td>
</tr>
<tr>
<td>780-819</td>
<td>B</td>
<td>600-619</td>
<td>D</td>
</tr>
<tr>
<td>740-779</td>
<td>B-</td>
<td>0-599</td>
<td>F</td>
</tr>
</tbody>
</table>
Incomplete (I) grades
A grade of incomplete ("I") indicates that additional course work is required to fulfill the requirements of a given course. Students may only be given an “I” grade if they have a passing average in coursework that has been completed and have well-defined parameters to complete the course requirements that could result in a grade better than the default grade. An “I” grade may not be assigned to a student who did not attend the course.

Prior to the end of the semester, students must initiate the request for an “I” grade and receive the instructor’s approval. Assignment of an “I” grade is at the discretion of the instructor.

The instructor must specify a default letter grade at the time the “I” grade is submitted. A default grade is the letter grade the student will receive if no additional coursework is completed and/or a grade change form is not filed by the instructor. “I” grades must be completed within 12 months. Individual instructors may set shorter time limits for removing an incomplete than the 12-month time limit. Upon assigning an “I” grade, the instructor shall provide the student specification, in writing or by electronic mail, of the requirements to be fulfilled, and shall file a copy with the appropriate departmental office.

Students must not re-register for courses for which they have received an “I” grade.

The last day to resign the course is Friday, November 8th.

Course Schedule

<table>
<thead>
<tr>
<th>LEC</th>
<th>MWF 4 - 4:50 pm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Clemens 117</td>
</tr>
</tbody>
</table>

Diversity
The UB School of Engineering and Applied Sciences considers the diversity of its students, faculty, and staff to be a strength, critical to our success. We are committed to providing a safe space and a culture of mutual respect and inclusiveness for all. We believe a community of faculty, students, and staff who bring diverse life experiences and perspectives leads to a superior working environment, and we welcome differences in race, ethnicity, gender, age, religion, language, intellectual and physical ability, sexual orientation, gender identity, socioeconomic status, and veteran status.

Accessibility Resources
If you have any disability which requires reasonable accommodations to enable you to participate in this course, please contact the Office of Accessibility Resources in 60 Capen Hall, 716-645-2608 and also the instructor of this course during the first week of class. The office will provide you with information and review appropriate arrangements for reasonable accommodations, which can be found on the web at: http://www.buffalo.edu/studentlife/who-we-are/departments/accessibility.html.

Critical Campus Resources
Sexual Violence
UB is committed to providing a safe learning environment free of all forms of discrimination and sexual harassment, including sexual assault, domestic and dating violence and stalking. If you have experienced gender-based violence (intimate partner violence, attempted or completed sexual assault, harassment, coercion, stalking, etc.), UB has resources to help. This includes academic accommodations, health and counseling services, housing accommodations, helping with legal protective orders, and assistance with reporting the incident to police or other UB officials if you so choose. Please contact UB’s Title IX Coordinator at 716-645-2266 for more information. For confidential assistance, you may also contact a Crisis Services Campus Advocate at 716-796-4399.
Mental Health

As a student you may experience a range of issues that can cause barriers to learning or reduce your ability to participate in daily activities. These might include strained relationships, anxiety, high levels of stress, alcohol/drug problems, feeling down, health concerns, or unwanted sexual experiences. Counseling, Health Services, and Health Promotion are here to help with these or other issues you may experience. You can learn more about these programs and services by contacting:

**Counseling Services:**
- 120 Richmond Quad (North Campus), 716-645-2720
- 202 Michael Hall (South Campus), 716-829-5800

**Health Services:**
- Michael Hall (South Campus), 716-829-3316

**Health Promotion:**
- 114 Student Union (North Campus), 716-645-2837

Classroom Decorum

To prevent and respond to distracting behavior faculty should clarify standards for the conduct of class, either in the syllabus, or by referencing the expectations cited in the Student Conduct Regulations. Classroom "etiquette" expectations should include:

- Attending classes and paying attention. Do not ask an instructor in class to go over material you missed by skipping a class or not concentrating.
- Not coming to class late or leaving early. If you must enter a class late, do so quietly and do not disrupt the class by walking between the class and the instructor. Do not leave class unless it is an absolute necessity.
- 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.
- Showing respect and concern for others by not monopolizing class discussion. Allow others time to give their input and ask questions. Do not stray from the topic of class discussion.
- Not eating and drinking during class time.
- Turning off the electronics: cell phones, pagers, and beeper watches.
- Avoiding audible and visible signs of restlessness. These are both rude and disruptive to the rest of the class.
- Focusing 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 unacceptable and can be disruptive.
- Not packing bookbags or backpacks to leave until the instructor has dismissed class.

Academic Integrity

Academic integrity is a fundamental university value. Through the honest completion of academic work, students sustain the integrity of the university while facilitating the university's imperative for the transmission of knowledge and culture based upon the generation of new and innovative ideas. Please refer to the university Undergraduate Academic Integrity Policy ([https://catalog.buffalo.edu/policies/academic_integrity_2019-20.html](https://catalog.buffalo.edu/policies/academic_integrity_2019-20.html)) for additional information.

As an engineer or computer scientist, you have special ethical obligations. As per the NSPE Code of Ethics, “engineers shall avoid deceptive acts” and “shall conduct themselves honorably, responsibly, ethically, and lawfully so as to enhance the honor, reputation, and usefulness of the profession ([https://www.nspe.org/resources/ethics/code-ethics](https://www.nspe.org/resources/ethics/code-ethics)). Similar sentiments of honesty, integrity, fairness, and responsibility are fundamental to the ACM Code of Ethics ([https://www.acm.org/code-of-ethics](https://www.acm.org/code-of-ethics)).

A violation in this class generally results in an F for the entire course. The Computer Science and Engineering department's policy on academic integrity can be found here:

[https://engineering.buffalo.edu/computer-science-engineering/information-for-students/policies/academic-integrity.html](https://engineering.buffalo.edu/computer-science-engineering/information-for-students/policies/academic-integrity.html)

The syllabus is subject to change based on the needs of the course and will be communicated with you as appropriate.