Boston University Metropolitan College

Software Engineering

MET CS-673 A1
On Campus

Instructor Name: Ronald Czik
Instructor Email: rec@bu.edu
Office hours: by appointment
Location and time: Wednesday – CAS B18, 6:00 pm – 8:45 pm
Assistant: Behdad Shahossini, behdad@bu.edu

Course Description
Overview of techniques and tools to develop high quality software. Topics include software development life cycle such as Agile and DevOps, requirements analysis, software design, programming techniques, refactoring, testing, as well as software management issues. This course features a semester-long group project where students will design and develop a real-world software system in groups using Agile methodology and various SE tools, including project management tools, programming frameworks, unit and system testing tools , integration tools and version control tools.

This is a capstone course to be taken after at least two programming intensive courses toward the end of a program of study. A solid understanding of Object-Oriented design concepts and proficiency in at least one high-level programming language is required. Familiarity with web or mobile application development preferred. This is a programming intensive course; everyone will be required to develop and debug code. No exceptions.

Books

- *Engineering Software Products - An Introduction to Modern Software Engineering* by Ian Sommerville – REQUIRED
- *Software Engineering* by Ian Sommerville; tenth edition - OPTIONAL
- *Being Agile* by Mario E. Moreia - OPTIONAL
- Various other references as reviewed in class

Courseware
Course Blackboard site: http://learn.bu.edu (click on the appropriate link to CS673 Software Engineering, which will automatically show in your Blackboard Dashboard).

Discussions will be through Piazza: https://piazza.com/bu/spring2023/cs673

Class Policies

1) **Attendance & Absences** – This is an experiential class; we will work in agile teams with a new scrum master each week. Course participation and collaboration with the instructor and peers is a requirement of the course. Attendance and participation are mandatory.
2) **Assignment Completion & Late Work** – Student performance will be evaluated on complete and timely submission of assignments and the results of quizzes and examinations and participation. Late homework assignments are not accepted. Do not wait until the last minute to begin an assignment. The lowest homework will be dropped. It is understood that students may need to miss a class due to unforeseen circumstances. To be fair to all students, the grading policy is to drop the lowest homework and to excuse one absence.
3) **Academic Conduct Code** – Cheating and plagiarism will not be tolerated in any Metropolitan College course. They will result in no credit for the assignment or examination and may lead to disciplinary actions. Please take the time to review the Student Academic Conduct Code: http://www.bu.edu/met/metropolitan_college_people/student/resources/conduct/code.html.

   This should not be understood as a discouragement for discussing the material or your particular approach to a problem with other students in the class. The purpose of assignments is to ensure students understand material presented in class. It is hoped that you will work with your peers on course assignments (and to prepare for exams). There is no penalty for working together. The goal is to ensure that everyone understands the material. If you choose to collaborate on course assignments, you are required to clearly disclose on the first page of your submission the individual(s) with whom you collaborated.

Grading Criteria

The grade that a student receives in this class will be based on class participation (including status reports and presentations), product artifacts (code, documentation, etc.), and individual work. The grade breakdown is shown below. All percentages are approximate, and the instructor reserves the right to make necessary changes.

Artifact	Weight
Individual contributions, PSRs, class participation	10%
Product Proposal	5%
Mid-semester product submission	25%
Final product submission	30%
Final exam	30%

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Class Meetings, Lectures & Assignments

Lectures, Readings, and Assignments subject to change.

Class	Date	Topics	Readings	Assignments
1	1/25/2023	• Introduction – course outline • Software Products	Ch. 1	• Project assigned
2	2/1/2023	• Agile software engineering • Team project proposals	Ch. 2	
3	2/8/2023	• Features, Scenarios, and Stories	Ch. 3	• Project proposal due • PRS due
4	2/15/2023	• Software Architecture Part 1	Ch. 4	
5	2/22/2023	• Mid semester team presentations		• PSR due
6	3/1/2023	• Cloud-Based Software	Ch. 5	• Mid semester submission
	3/8/2023	• SPRING BREAK		
7	3/15/2023	• Microservices Architecture	Ch. 6	• PRS due
8	3/22/2023	• Security and Privacy	Ch. 7	
9	3/29/2023	• Product review		• PSR due
10	4/5/2023	• Reliable Programming	Ch. 8	
11	4/12/2023	• Testing	Ch. 9	• PSR due
	4/19/2023	• NO CLASS – SUBSTITUTE MONDAY		
12	4/26/2023	• DevOps and Code Management	Ch. 10	• PSR due
13	5/3/2023	• Team final presentations		• Final project due
14	5/10/2023	• Final exam		