Swe 574: Software Development as a Team

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Prerequisites Knowledge about programming and software project development (covered in Swe573)

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Office Hours: M 14:00-15:00 and by appointment
Office: BM 35

Class Room: BM A2
Class Hours: Mondays 19:00-21:00

Course Description

This course focuses on the important practices and effective use of tools and techniques for successfully managing the lifecycle of developing a software product. Students will engage in the entire lifecycle of developing a software product as a team. This is a hands-on course including weekly meetings and periodic milestone presentations to track the progress of project development.

Course Objectives

1. To experience the application of software development techniques and methodologies throughout various stages of the software development lifecycle including planning, requirements gathering, design, implementation, testing, deployment, and delivery.
2. To acquire team-based software development skills such as communication, planning and time-management.
3. To gain communication skills required to interact with customers and the project team members.
4. To develop skills in planning and managing software development projects.
5. To gain the ability to use software development tools, techniques, environments and methodologies for effective and productive software development.
6. To apply various Computer Engineering knowledge and algorithms, as learnt in earlier courses, to software development.

Course Structure

Class Structure

Each student will have been assigned to a software project team that is expected to implement and deploy the project at the end of this semester. The documentation, issues, and code of the project are maintained and tracked on a code repository.

Each week we will be discussing software development issues in the context of your team projects. We will reflect and brainstorm about the issues that emerge during the process.

The main activities will involve the requirements, design, configuration, implementation, planning, testing, documentation, user experiences, and deployment.

There will be 3 main milestones (1^{st}, 2^{nd}, and final) that include presentations, which will be graded. These are very important checkpoints! Each team will have further milestones to track their progress, which will be part of the discussions during the weekly meetings.

The expected milestones will be around 5^{th} and 10^{th} week of the semester. The final milestone will be at the end of the semester.

Weekly meeting goals

Each week we will be visiting issues related to your team projects. Your team will make many decisions regarding the implementation of your project that will shape our interactions.

Every week you are expected to articulate the development of your project in terms of your personal contribution as well as the overall project status. You will be planning and tracking your project with the tools that support the software development process. In specific, you will be expected to answer what the current status is, what work was done in the last week, the differences (if any) between the planned and actual status, and any mid-course actions that you plan to take to remedy any shortcomings.

You will always be expected to demonstrate your work on your git repository, which should be kept up-to-date and reflect the current status.

The most important thing to remember is that this course is about teamwork. Your actions have an impact on your teammates. This makes it very important to *manage* your time and communicate effectively.

Communication

All communication about this course will be carried in class, on discord, and your git repository. Also, general announcements may be made via the registration system or Moodle.

It is your responsibility to keep up with the messages, notifications, and content shared here.

Grading Policy

You will be evaluated based on communication (oral and written), effective software development practices and use of tools, managing the software development tasks (requirements, design, coding, testings), and with respect to the execution of the development plan of your project.

During this course you are expected to express yourselves clearly in terms of software engineering terminology, techniques, and concepts. This includes requirements, design documents, issue management, and code.

The above factors will be considering during the evaluation of your personal and team work:

Criteria	Percent
Milestone 1	10%
Milestone 2	30%
Final Milestone	40%
Final Exam	20

The final exam is comprehensive and is specific to your team project where you are expected to formulate your answers in accordance with software engineering terminology and concepts.

IMPORTANT Note: **In order to take the final exam you must have accumulated 40% of course grades.**

Course Policies

During Class

This course requires active engagement with computers, however please refrain from using computers for anything other than activities related to the class. Also, do not use your phones except when you are demonstrating the mobile application.

Attendance Policy

Attendance is expected. Valid excuses for absence will be accepted before class. In extenuating circumstances, valid excuses with proof will be accepted after class. **Students who miss more than 3 classes will fail this course.**

You are responsible for following everything covered in class.

Academic Integrity and Collaboration

As computer engineers and software developers adhere to professional code of conduct. Please review the ACM Code of Ethics and Professional Conduct at: https://ethics.acm.org.

Complex software development is a team effort, which calls for collaboration. Peer learning and collaboration is welcome in team projects. But, taking credit for work that is not performed by yourself is never acceptable. For example, if you copy and paste chunks of code (from sources like Stackoverflow or Github) without understanding it, you're taking credit for others' work. Likewise, if you copy answers on a quiz or exam from your classmates or from external resources (online or otherwise) you are taking credit for others' work. If you are not clear about doubt what is acceptable as collaboration, please ask us.

If it is discovered that you have not done your own work, you will fail this course and may be reported for academic disciplinary action.