



Agile Software Development (40-475)

Dr. Raman Ramsin

Undergraduate Course, 3 Units, Elective (Computer Engineering)

Prerequisite: Systems Analysis and Design (40-418)

Overview

The aim of this course is to familiarize undergraduate students of Computer Engineering with the concepts, principles, and methods of agile software development. After a review of agile concepts and principles, students will gain knowledge on the DAD and DSDM methodologies, and will use them, along with agile practices, to develop a software system.

Topics and Schedule

- 1) Introduction to the Course Syllabus, and the History, Concepts, Manifesto, Principles, and Limitations of Agile Development (4 sessions – each session is 90 minutes in duration)
- 2) DAD Methodology (Disciplined Agile Delivery)
 - Framework (3 sessions)
 - Process (4 sessions)
 - Roles (3 sessions)
- 3) Agile Practices: Refactoring, Team Management, Design and Kanban (8 sessions)
- 4) DSDM Methodology (Dynamic Systems Development Method)
 - Framework, Principles and Rules (2 sessions)
 - Roles (2 sessions)
 - Sequential Phases (2 session)
 - Iterative Phases (2 sessions)
 - Practices (2 sessions)

Exams and Course Project

- Two exams (Midterm and Final) – Comprising 60% of the total grade.
- One or two assignments – Comprising 10% of the total grade.
- Course project – Comprising 30% of the total grade.
 - Project activities will be assigned and completed throughout the semester.

Main References

- S.W. Ambler, M. Lines, *Choose Your WoW: A Disciplined Agile Delivery Handbook for Optimizing Your Way of Working*. Project Management Institute, 2020.
- DSDM Consortium, *The DSDM Project Framework Handbook*. Agile Business Consortium, Published online at: <https://www.agilebusiness.org/dsdm-project-framework.html>, 2014 (visited: 14 September 2024).
- Agile Alliance, *Agile 101: Subway Map to Agile Practices*. Published online at: <https://www.agilealliance.org/agile101/subway-map-to-agile-practices/>, 2015 (visited: 14 September 2024).
- M. Fowler, *Refactoring: Improving the Design of Existing Code*, 2nd ed. Addison-Wesley, 2019.