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Boston University | Metropolitan College

MET CS634 Agile Software Development

agility by design

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BOSTON UNIVERSITY

Quick Guide

- Welcome to Agile Software Development!
- Course Objectives
- Course Logistics & Materials
- Course Grading
- Our Journey

Welcome to Agile Software Development!

This course will provide you with a comprehensive overview of the principles, processes, and practices of agile software product management and development. Throughout the class, you'll gain an understanding of the drivers behind agility in software development and learn techniques for initiating, planning and executing on software development projects using agile methodologies. Over the next few weeks, you'll obtain practical knowledge of agile development frameworks and user-centric design.

Our goal is to help you effectively apply and adapt agile tools and techniques in the software development lifecycle from product ideation to deployment, including establishing a product strategy and roadmap, creating agile team environment, and putting agile practices into play with a small web design project.

Whether you're new to agile or are an experienced agile practitioner, you'll uncover ways to help your organization transition to agile or improve and advance agile capabilities.

Let's get started!

agility

Upon successful completion of this course, you will be able to:

Demonstrate an understanding of agile development philosophies and methodologies

- Understand agile development processes and the principles behind the Agile Manifesto
- Learn Scrum, Extreme Programming (XP), and Scaled Agile (SAFe) frameworks
- Develop an understanding of when to use agile methodologies (and when not to) and how to tailor agile practices

Practice human-centric design in agile development

- Develop a product vision, customer journey, and roadmap
- Leverage agile architecture, analysis and design techniques
- Explore customer-focused methods for agile planning, monitoring, and adapting

Evaluate agile team-based practices used to create and deliver products

- Build out a backlog and user stories
- Identify Scrum roles, responsibilities and processes
- Evaluate quality management strategies and tactics

Build out a small team-based web development project using Scrum practices

- Leverage Scrum practices in small teams as you build out a working prototype for your class project
- Incorporate front-end web design (HTML, CSS, JavaScript, etc.) to build out your prototype

Explore advanced and emerging topics in the domain of software development

- Lean, value streams and kanban models
- DevOps and continuous deployment strategies
- Scaling agile processes

Course Logistics & Materials

Two live interactive live lectures will be held each week. Sessions will be recorded for those who are unable to attend. All coursework takes place in our online learning management system.

Textbooks

There is one required text for the course. Other reading materials will be provided separately.

REQUIRED

Rubin, K. (2013). Essential Scrum: A Practical Guide to the Most Popular Agile Process. Upper Saddle River, NJ: Addison-Wesley. ISBN-10: 0137043295 | ISBN-13: 978-0137043293

RECOMMENDED

Robbins, J. (2018). Learning Web Design: A Beginner's Guide to HTML, CSS, JavaScript, and Web Graphics, 5th ed. Sebastopol, CA: O'Reilly Media. ISBN-13: 978-1-491-96020-2

Web Design Labs

In the group project, students will work in teams to create a high-fidelity working prototype off of their wireframe using web design basics, such as HTML, CSS and JavaScript. This course assumes no prior knowledge of web design. Resources will be provided to help students build up basic knowledge to complete the final project.

Course Grading

The course will be conducted by means of a sequence of lectures throughout the term. The class will explore agile software delivery topics through a series a combination of group and individual assignments and a final exam. You'll be able to demonstrate your understanding of agile software development practices through these assignments. In the final week of the course there is a proctored comprehensive final exam.

All students will be expected to demonstrate knowledge of agile software development and relevant techniques. To obtain an exceptional grade you have to exceed expectations in your projects, assignments, and final assessment.

If, for any reason, you are unable to meet any assignment deadline, contact me in advance. All times mentioned in the course (unless otherwise specified) are in Eastern Standard Time. All assignments must be completed and must be turned in by their due dates and due times. Extensions may be granted, though only under mitigating circumstances.

Course Deliverable	Grade Percentage
User research study (individual)	10%
Persona development & vision (individual)	15%
Product backlog and release plan (group)	10%
Wireframe (individual)	15%
Sprint 1 web development (group)	10%
Sprint 2 web development & release (group)	15%
Final exam (individual)	25%

Grading Structure

94> = A

90 - 93 = A-

87 - 89 = B+

84 - 86 = B

80 - 83 = B-

Our Journey

Introduction to Agile	Introduction to Agile Software Development Agile Development Frameworks The Importance of User-Centric Design
User-Centric Design	User Research & Personas Design Thinking
Product Visioning	Crafting a Product Vision Using Lean Canvas
Creating the Product Roadmap	Establishing the Product Backlog Creating the Product Roadmap
The Scrum Framework	Roles & Responsibilities Scrum Processes

Our Journey

Prototypes & Wireframes
Agile Architecture Practices
Business Analysis & User Stories

Agile Architecture & Design

Estimation & Planning
Task Definition
Velocity

Estimation & Planning

Quality Management & Planning
Technical Practices & Standards
Software Testing Approaches

Agile Quality Management & Testing

Continuous Integration, Delivery & Deployment
DevOps

Continuous Delivery & DevOps

Scaling Agile Frameworks

Scaled Agile

Our Journey

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