



Northeastern University
College of Engineering

Multidisciplinary Graduate Engineering Course Syllabus

Course Information

Course Title: Agile Software Development

Course Number: INFO 7245

Credit Hour: 4

Course Description/Prerequisite

Offers students an opportunity to achieve a high level of practical understanding of software development life cycle (SDLC) with emphasis on agile and adaptive incremental methodologies. Examines techniques for the management and evolution of software systems, including project planning from requirements gathering, analysis, estimation, and releasing using a hands-on approach to implement agile methodologies. Also covers maintainability, including software risk analysis, project retrospectives, and process models such as capability maturity model, configuration management, and their practical implementation.

Student Learning/Course Outcomes (SLOs)

By the end of the course, students will be able to:

Understand the history, benefits and tenets of agile project management

Apply the Principles of Agile Project Management

Implement Agile and how to apply Agile methods effectively including life cycle selection, creating and delivering an agile environment, organizational consideration

Conduct a technology vendor assessment

Understand the tools and methodologies for Agile project management and quality control

Articulate the importance of Scaling Agile Projects including scaling methods and building agile team

Adopt Agile Principles and be an informed and strong team member on an Agile team (Developer, Scrum Master, etc.)

Attendance Policy

Students are expected to complete course readings, participate in class discussions or other learning activities during the unit, and complete written assignments for each unit during the time of that unit. It is understood that there might be one week when active participation in ongoing class conversations and learning activities might be delayed.

Beyond one week time, if there is an absence or lateness in participation (1) faculty must be notified in advance; (2) grades will be adjusted accordingly.

Late Work Policy

Students must submit assignments by the deadline in the time zone noted in the syllabus.

Students must communicate with the faculty prior to the deadline if they anticipate work will be submitted late.

Work submitted late without prior communication with faculty will not be graded.

Approach

The learning methods we'll use are as follows:

Readings. There will be assigned readings (articles and cases) found on Blackboard. These will provide the conceptual framework and background for each topic. Discussion questions will generally be based on the reading materials. For posts on BB, you should incorporate theories and frameworks to your responses to demonstrate your ability to apply the methodologies.

Presentations and discussions. To cover core principles and concepts to be applied toward current industry trends in APM.

Individual and group practical assignments

Case studies – students will have the ability to combine concepts and frameworks with real world use cases to better apply learnings.

In-class and Online Case Discussions and Participation

Discussion posts and in-class participation (25%)

- Good responses help further constructive discussion and learning. Please read initial posts diligently, think about your response to make sure it provides value and substance to the conversation.
- Remember this is a respectful learning environment so all replies should be professional and not personal. You are encouraged to challenge each other but if you disagree with a statement, please use proper judgement.
- Your Initial answer/solution to the discussion question/assignment before 11:59pm on Tuesday following the start date of each week. Initial posts should be between 150 and 200 words (average) and can contain references to the text, the course material and/or outside sources.
- One response to one other student's initial post. Reply posts should be between 100 and 150 words (average).

Individual and group assignments (35%)

- Vendor Assessment Project. (20%)
- "Selling Agile to Clients" group presentation gives students a real-world scenario that many organizations across most industries face today. Students will complete analysis and dig deeper into the benefits but also challenging change management effort this can be present depending on a company culture, industry and geographic location. (15%)

Multiple Choice Exams (35%)

- **Midterm open book online (10%)**
- **Final exam (25%).** All course material and cases may be covered in the exam. Closed book.

Grading/Evaluation Standards

Grade Scale

95-100%	A	87-89.9%	B+	77-79.9%	C+	69.9% or below F
		84-86.9%	B	74-76.9%	C	
90-94.9%	A-	80-83.9%	B-	70-73.9%	C-	

Grade Breakdown:

Category	Component	Percent
1	Class participation, discussion posts	25
2	Industry Trends presentation	5
3	Assignments (individual & group)	35
4	Mid-term Quiz (multiple choice format)	10
5	Final Exam (multiple choice format)	25
Total		100

Course Schedule

[Note: This Topics Schedule is subject to change. Defer to Blackboard Course Materials for the class content and requirements.]

Week One	Topics	Readings / Assignments
9/9		
Getting Oriented	<ul style="list-style-type: none"> ➤ Course Overview ➤ Instructor & student introductions ➤ Review Syllabus, requirements, and expectations 	Syllabus
Week Two	Topics	Readings / Assignments due for this week's class
9/16		
History & Benefits	<ul style="list-style-type: none"> ➤ Overview, History, Benefits and Tenets of APM (advantages, principles) 	
Week Three:	Topics	Readings / Assignments due for this week's class
9/23		
APM Principles	<ul style="list-style-type: none"> ➤ "The Enemy: Big upfront Anything" ➤ Software Development Life Cycle (SDLC) 	Discussion post and response in BB due 9/22 11:59PM EST (7 points)
Implementing Agile	<ul style="list-style-type: none"> ➤ Implementing Agile: How to apply the APM method effectively 	
Week Four:	Topics	Readings / Assignments due for this week's class
9/30		

Agile Roles	➤ Agile roles	Reading in BB
Agile Tools	➤ Agile Principles	
	➤ Tools and Methodologies for Quality Control in APM	
Week Five: 10/7	Topics	Readings / Assignments due for this week's class
Agile Practices	➤ Agile Practices Managerial ➤ Agile Practices Technical	Vendor assessment project due 10/6 11:59pm EST. (20 points)
Week Six 10/14	Topics	Readings / Assignments due for this week's class
Scaling Agile	➤ Class discussion on BB discussion article related to collaboration tools ➤ Scaling Agile Projects	Mid-term quiz available in BB 10/15-10/17
Week Seven 10/21	Topics	Readings / Assignments due for this week's class
APF Cycle	➤ How to Build the Agile Project Framework Cycle	Discussion post in BB due 10/20 11:59PM EST (5 points)
Artifacts	➤ Agile artifacts	
Methods	➤ Agile methods	
Week Eight: 10/16	Topics	Readings / Assignments due for this week's class
Selling Agile to clients	➤ No in-person class this week ➤ Selling Agile to a client assignment (group project)	
Week Nine 10/23	Topics	Readings / Assignments due for this week's class
Class Presentations	➤ Selling Agile to a client presentation	"Selling Agile to a client" or "Sprint and Resource planning" group assignment due 10/23 11:59pm EST (15 points)
Week Ten: 10/30	Topics	Readings / Assignments due for this week's class
Agile Simulation	No physical class this week, see assignment in BB	Agile Simulation instructions & overview

Week Eleven: 11.6	Topics	Readings / Assignments due for this week's class
Software development methodology trends Dealing with Agile Teams	<ul style="list-style-type: none"> ➤ Latest trends in software development methodologies, does it depend on industry and corporate culture? ➤ Dealing with agile teams ➤ Prepare for Agile simulation (select roles, review exercise) 	
Week Twelve 11/13	Topics	Readings / Assignments due for this week's class
Agile Simulation	Agile Simulation	
Week Thirteen 11/27	Topics	Readings / Assignments due for this week's class
No Class thanksgiving break	No Class thanksgiving break	
Week Fourteen: 12/2	Topics	Assignments due for this week's class
Course review	Optional office hours	
Week Fifteen: 12/9	Topics	Assignments due for this week's class
Final Exam	Final Exam	Final Exam will be given during class time 6-930pm EST

Academic Integrity

A commitment to the principles of academic integrity is essential to the mission of Northeastern University. The promotion of independent and original scholarship ensures that students derive the most from their educational experience and their pursuit of knowledge. Academic dishonesty violates the most fundamental values of an intellectual community and undermines the achievements of the entire University.

As members of the academic community, students must become familiar with their rights and responsibilities. In each course, they are responsible for knowing the requirements and restrictions regarding research and writing, examinations of whatever kind, collaborative work, the use of study aids, the appropriateness of assistance, and other issues. Students are responsible for learning the conventions of documentation and acknowledgment of sources in their fields. Northeastern University expects students to complete all examinations, tests, papers, creative projects, and assignments of any kind according to the highest ethical standards, as set forth either explicitly or implicitly in this Code or by the direction of instructors.

Go to <http://www.northeastern.edu/osccr/academic-integrity-policy/> to access the full academic integrity policy.

Student Accommodations

Northeastern University and the Disability Resource Center (DRC) are committed to providing disability services that enable students who qualify under Section 504 of the Rehabilitation Act and the Americans with Disabilities Act Amendments Act (ADAAA) to participate fully in the activities of the university. To receive accommodations through the DRC, students must provide appropriate documentation that demonstrates a current substantially limiting disability.

For more information, visit <http://www.northeastern.edu/drc/getting-started-with-the-drc/>.

Library Services

The Northeastern University Library is at the hub of campus intellectual life. Resources include over 900,000 print volumes, 206,500 e-books, and 70,225 electronic journals.

For more information and for Education specific resources, visit <http://subjectguides.lib.neu.edu/edresearch>.

Diversity and Inclusion

Northeastern University is committed to equal opportunity, affirmative action, diversity and social justice while building a climate of inclusion on and beyond campus. In the classroom, member of the University community work to cultivate an inclusive environment that denounces discrimination through innovation, collaboration and an awareness of global perspectives on social justice.

Please visit <http://www.northeastern.edu/oidi/> for complete information on Diversity and Inclusion

TITLE IX

Title IX of the Education Amendments of 1972 protects individuals from sex or gender-based discrimination, including discrimination based on gender-identity, in educational programs and activities that receive federal financial assistance.

Northeastern's Title IX Policy prohibits Prohibited Offenses, which are defined as sexual harassment, sexual assault, relationship or domestic violence, and stalking. The Title IX Policy applies to the entire community, including male, female, transgender students, faculty and staff.

In case of an emergency, please call 911.

Please visit www.northeastern.edu/titleix for a complete list of reporting options and resources both on- and off-campus.