



INFO 7245 Agile Software Development

Course Information

Course Title: Agile Software Development

Course Number: INFO 7245

Term and Year: Spring 2024

Credit Hour: 4

Course Format:

Instructor Information

Full Name: Jacob Housman

Email Address: j.housman@northeastern.edu

Course Prerequisites

Undergraduate level INFO 5100 Minimum Grade of D- or Graduate level INFO 5100 Minimum Grade of C- or Graduate level CSYE 6200 Minimum Grade of C-

Course Description

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.

Standard Learning Outcomes

Learning outcomes common to all College of Engineering Graduate programs:

1. *An ability to identify, formulate, and solve complex engineering problems.*
2. *An ability to explain and apply engineering design principles, as appropriate to the program's educational objectives.*
3. *An ability to produce solutions that meet specified end-user needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.*

The Information Systems Program accepts students of different engineering backgrounds with minimum programming skills and produces first class Information Systems engineers that operate at the intersection of real-world complexity, software development, and IT management. Graduating students will be able to construct end-to-end advanced software applications that meet business needs.

Specific Learning Outcomes for the Information Systems program:

1. *Create a strong technical foundation through diverse, high-level courses*
2. *Built crucial interpersonal skills needed to succeed in any industry*

3. *Foster a deep level of applied learning through project based case studies*

Course Outcomes and Assessment Standards

Technical/Course Materials Requirements

Required

Agile! The Good, the Hype and the Ugly

Bertrand Meyer

This book provides a guide to learn Agile Project Management and Understanding Methodologies for Control Quality.

Recommended / Optional

Adaptive Project Framework: Managing Complexity in the Face of Uncertainty

Robert K. Wysocki

This book provides a framework to address software development projects according to their complexity and uncertainty using not only Agile but indicating when it is still possible to use traditional waterfall models.

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.)

Approach

The learning methods we'll use are as follows:

Readings. There will be assigned readings (articles and cases) found on Canvas. These will provide the conceptual framework and background for each topic. Discussion questions will generally be based on the reading materials. For posts on Canvas, 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 (15%)
- "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 (20%)

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

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.

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 Canvas Course Materials for the class content and requirements.]

Week One 7/7	Topics	Readings / Assignments
Getting Oriented	<ul style="list-style-type: none">➤ Course Overview➤ Instructor & student introductions➤ Review Syllabus, requirements, and expectations	Syllabus
Week Two Session II 7/12	Topics	Readings / Assignments due for this week's class
History & Benefits	<ul style="list-style-type: none">➤ Overview, History, Benefits and Tenets of APM (advantages, principles)	
Week Two Session II 7/14	Topics	Readings / Assignments due for this week's class

APM Principles Implementing Agile	<ul style="list-style-type: none"> ➤ “The Enemy: Big upfront Anything” ➤ Software Development Life Cycle (SDLC) ➤ Implementing Agile: How to apply the APM method effectively 	Discussion post and response on Canvas due 2/2 11:59pm ET (7 points)
Week Three Session I 7/19	Topics	Readings / Assignments due for this week’s class
	<ul style="list-style-type: none"> ➤ Agile roles 	Reading on Canvas
Agile Roles Agile Tools	<ul style="list-style-type: none"> ➤ Agile Principles ➤ Tools and Methodologies for Quality Control in APM 	
Week Three session II 7/21	Topics	Readings / Assignments due for this week’s class
Agile Practices	<ul style="list-style-type: none"> ➤ Agile Practices Managerial ➤ Agile Practices Technical 	Vendor assessment project due 2/16 11:59pm ET. (20 points)
Week Four Session I 7/26	Topics	Readings / Assignments due for this week’s class
Scaled Agile	<ul style="list-style-type: none"> ➤ Class discussion on Canvas iscusson article related to collaboration tools ➤ Scaling Agile Projects 	Read article “Agile Is Not Just a Method, It’s a Mindset” Mid term quiz
Week Four Session II 7/28	Topics	Readings / Assignments due for this week’s class
APF Cycle Artifacts Methods	<ul style="list-style-type: none"> ➤ How to Build the Agile Project Framework Cycle ➤ Agile artifacts ➤ Agile methods 	Discussion post on Canvas due 3/2 11:59PM ET (5 points) Mid term quiz
Week Five Session I 8/2	Topics	Readings / Assignments due for this week’s class
Agile Debate	Individual Innovation Presentations	Individual Innovation Presentations
Week Five Session II 8/4	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 Six Session I 8/9	Topics	Readings / Assignments due for this week's class
Agile Simulation	Agile Simulation	Agile simulation instructions Select role for Agile simulation
Week Six Session II 8/11	Topics	Readings / Assignments due for this week's class
Presentation	➤ 'Selling Agile to a client' presentations	"Selling Agile to a client" or "Sprint and Resource planning" group assignment due 4/13 11:59pm ET (15 points)
Week Seven Sssion I 8/16	Topics	Assignments due for this week's class
Course review	Optional office hours	
Week Seven Session II 8/18	Topics	Assignments due for this week's class
Final Exam	Final Exam	Final Exam will be given during class time 5:30-9pm ET

End-of-Course Evaluation Surveys

Your feedback regarding your educational experience in this class is very important to the College of Professional Studies. Your comments will make a difference in the future planning and presentation of our curriculum.

At the end of this course, please take the time to complete the evaluation survey at <https://neu.evaluationkit.com>. Your survey responses are **completely anonymous and confidential**. For courses 6 weeks in length or shorter, surveys will be open one week prior to the end of the courses; for courses greater than 6 weeks in length, surveys will be open for two weeks. An email will be sent to your HuskyMail account notifying you when surveys are available.

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>.

24/7 Blackboard Technical Help

For immediate technical support for Blackboard, call 617-373-4357 or email help@northeastern.edu

Within Blackboard, open a support case via the red support button on the right side of the screen, click Create Case

myNortheastern, e-mail, and basic technical support

Visit the [Information Technology Services \(ITS\) Support Portal](#)

Email: help@northeastern.edu

ITS Customer Service Desk: 617-373-4357

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.