Northeastern
College of Engineering

INFO Agile Software Development

Course Information
Course Title: Agile Software Development
Course Number: INFO 7245
Term and Year: Fall 2024
Credit Hour: 4
CRN: 17300
Course Format: Live webcast all campus locations (Boston, Seattle, SV). Thursday 4-730pm ET unless otherwise notedor communicated.

Instructor Information
Full Name: Jake Housman
Email Address: jhousman@northeastern.edu

Teaching Assistant Information
Refer to the course canvas homepage

Course Prerequisites
Pre-reqs/program restrictions associated with the course.

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*

Required Tools and Course Textbooks.

Agile! The Good, the Hype and the Ugly (required)
Bertrand Meyer
This book provides a guide to learn Agile Project Management and Understanding Methodologies for Control Quality.

Adaptive Project Framework: Managing Complexity in the Face of Uncertainty
(Recommended / Optional)
Robert K. Wysocki
This book provides a framework to address software development projects according to their complexity and uncertainty using not only Agile but also indicating when it is still possible to use traditional waterfall models.

Course Schedule/Topics Covered

Grading Scale

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

Grade Breakdown:

Category	Component	Percent
1	Class participation, discussion posts	20
2	Industry Trends presentation	7
3	Assignments (individual & group)	33
4	Mid-term Quiz (multiple choice format)	10
5	Final Exam (multiple choice format)	25
6	Agile Simulation	5
Total		100

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 into 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 20% and in-class participation 5%

- 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 judgment
- Your Initial answer/solution to the discussion question/assignment before 11:59 pm on Friday 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)
- Agile simulation participation (5%)

Individual and group assignments (40%)
- Assignment 1: Case study (11%)
- Assignment 2: Vendor Assessment Project (11%)
- Assignment 3: Change Management (11%)
- Individual innovation presentation (7%)

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/Late Work Policy

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's 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.

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

Week	Date	Topic	Reading/Assignments
1	Sep 5	**Getting Oriented:** ➢ Course Overview ➢ Instructor & student introductions ➢ Review Syllabus, requirements, and expectations. ➢ Presentations, Debate, Simulation, Case studies	
2	Sep 12	**History & Benefits:** ➢ Overview, History, Benefits and Tenets of APM (advantages, principles) ➢ Break Out Rooms – Discuss the article and submit a small summary of the discussion	➢ Reading Material 1 - Here's The Best Leadership Training Technique That You're Not Using ➢ Prepare for individual innovation presentations
3	Sep 19	**No live class. Prepare for innovation presentations and discussion post case study.**	
4	Sep 26	**Individual Innovation Presentations**	➢ Individual innovation presentations due ➢ Discussion post 1 Due

5	Oct 3	**APM Principles, Implementing Agile:** ➢ "The Enemy: Big upfront Anything**"** ➢ Software Development Life Cycle (SDLC) ➢ Implementing Agile: How to apply the APM method effectively **Case Study – Market Study**	➢ <u>Reading Material 2</u> – The Next Frontierin Employee Experience ➢ Discussion post 2 Due
6	Oct 10	Break Out Rooms – Discuss the article and submit a small summary of the discussion **Agile Roles, Agile Tools:** ➢ Agile roles ➢ Agile Principles ➢ Tools and Methodologies for Quality Control in APM	➢ <u>Group Assignment 1</u> – Case StudyQuestions ➢ <u>Reading Material 3</u> - **If we are all so busy why aren't you getting things** ➢ Three collaborative interactions: Decision making, Creative Solution and Information sharing.
7	Oct 17	Break Out Rooms – Discuss the article and submit a small summary of the discussion **Agile Practices:** ➢ Agile Practices Managerial ➢ Agile Practices Technical	➢ **Assignment 1 due** ➢ Select role for Agile simulation ➢ **Group Assignment 2:** Vendor Assessment
8	Oct 24	**Scaled Agile:** ➢ Mid-term Quiz(in-class) ➢ Scaling Agile Projects	➢ **Group Assignment 2 due** ➢ Mid- term quiz during class (10 points,10%) ➢ Agile Debate Instructions
9	Oct 31	**How to Build the Agile Project Framework Cycle** ➢ Agile artifacts ➢ Agile methods ➢ Agile simulation preparation (Nov 7) ➢ Agile debate preparation (Nov 14)	➢ *class most likely be rescheduled to Oct 30 this week* ➢ **Discussion post 3 due** ➢ Agile simulation preparation (Nov 7) ➢ Agile debate preparation (Nov 14)

10	Nov 7	**Agile Simulation(4 Sprints)**	<u>Reading Material 4:</u> 4 Keys to Protecting Your Team's Productive Capacity
11	Nov 14	**Agile Debate** **Prepare for Assignment 3**	➢ **Discussion post 4 due** ➢ **Review Assignment 3**
12	Nov 21	Break Out Rooms – Discuss the article and submit a small summary of the discussion. Agile Simulation Presentation	➢ Agile Simulation Presentation due ➢ **Group Assignment 3: Why Change is so difficult?** We provide hypothetical organization to prepare an analysis
13	Nov 28	**No class – US thanksgiving break**	_____
14	Dec 5	**Software development methodology trends and** **Dealing with Agile Teams:** ➢ Latest trends in software development methodologies, does it depend on industry and corporate culture? ➢ Dealing with agile teams	**Group Assignment 3 due**
15	Dec 12	**Final Exam**	**Final Exam will be given during class time.**

End-of-Course Evaluation Surveys
Your feedback regarding your educational experience in this class is particularly 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 Husky Mail 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.

University Health and Counseling Services

As a student enrolled in this course, you are fully responsible for assignments, work, and course materials as outlinedin this syllabus and in the classroom. Over the course of the semester if you experience any health issues, please contact UHCS.

For more information, visit https://www.northeastern.edu/uhcs

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 https://drc.sites.northeastern.edu

Library Services

The Northeastern University Library is 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 https://library.northeastern.edu

24/7 Canvas Technical Help

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

Canvas Faculty Resources: https://canvas.northeastern.edu/faculty-resources/

Canvas Student Resources: https://canvas.northeastern.edu/student-resources/

For assistance with my Northeastern e-mail, and basic technical support:
Visit ITS at https://its.northeastern.edu
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, members 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, and transgender students, faculty, and staff.

In case of an emergency, please call 911.

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