



INFO 7245 Agile Software Development

Course Information

Course Title: Agile Software Development

Course Number: INFO 7245-02

Term and Year: Fall 2025

Credit Hour: 4

CRN: 17715

Class Date and Time: Wed 3pm-6pm PST

Course Format: Seattle Traditional

Instructor Information

Full Name: David Fannin

Email Address: d.fannin@northeastern.edu

Office Hours: See Canvas

Instructor Biography

David is a senior software engineering executive from the Cloud, Infrastructure and Big Data domains, with extensive experience in creating, building and managing software development teams, and leading product development efforts. He has held key engineering roles in Silicon Valley companies such as Amazon Web Services, Yahoo, Cisco, Juniper Networks and several startups that you've never heard of. David started his career as a Member of Technical Staff at AT&T Bell Laboratories in New Jersey. In these roles, he has spearheaded major software engineering initiatives, optimized software delivery processes, and transformed teams by driving revitalized software release processes, improving software quality and introducing innovative new integration and deployment processes, including Agile Software Development. David holds a Master's degree in Computer Science and a Bachelor's degree in Engineering, both from California Polytechnic State University, San Luis Obispo.

Teaching/Instructional Assistant Information

Full Name: Wesley Tanoto

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Course Background

Course Prerequisites

INFO 5100 with a minimum grade of B- or INFO 5100 with a minimum grade of B- or CSYE 6200 with a minimum grade of B-

Course Description

The Agile Software Development course is a comprehensive and advanced-level program designed to equip Masters degree-level students in Information Systems with the essential knowledge and skills to succeed in the dynamic and rapidly evolving world of software development. The course emphasizes the principles, practices, and methodologies of Agile software development, which have become indispensable in today's technology-driven organizations.

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.

By the end of the course, students will be well-prepared to lead Agile software development initiatives, effectively manage Agile projects, and contribute to the success of software development teams in a wide range of organizations. The course will empower graduates to drive innovation and adaptability in the ever-changing landscape of Information Systems. Students who successfully meet requirements will be awarded a *Scrum Master Certificate*.

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

Textbook (required): *The Art of Agile Development 2nd Edition* by James Shore and Shane Warden. [ISBN 978-1-4920-8069-5]. Please make sure you acquire the "2nd Edition", as it is a major update/rewrite of the 1st Edition done in 2007.

Learning Outcomes for Agile Systems Development course:

- Explore the key principles and philosophies of modern software engineering methodologies, including Agile, Scrum, Kanban and Extreme Programming (XP).
- Understand the core principles of Agile development, including customer collaboration, response to change, iterative development and continuous improvement.

- Demonstrate the ability to manage and participate effectively in a software development lifecycle process using agile/scrum methodologies, including topics such as standups, sprint planning, retrospectives and backlog grooming.
- Understand practices for performing level of effort estimates and planning under Agile.
- Explore Strategies for executing system architecture and design in Agile
- Understand the use and scope of Agile software development tools.
- Address the strategies for quality assurance and testing in Agile development lifecycle, including automated testing and continuous integration (CI).
- Explore methods for scaling Agile practices to large and complex projects, such as Scrum of Scrums, Large Scale Scrum (LeSS) and SAFe (Scaled Agile Framework).
- Review the challenges and strategies for adopting Agile practices and leading organizational transformations.

Course Details

Course Activities

1. Homework Assignments - Each week, assignments will be provided to the class for the following week, usually reading assignments from the textbook or other sources.
2. Quizzes and In-Class Discussion Groups - Quizzes will periodically be given at the end of each class that covers the previously discussed course material. The quizzes will be a combination of multiple choice and short answer questions. In-Class team discussions will also be held where the teams will be given a discussion topic to discuss, and the team will document their answers.
3. Midterm and Final Exam - Midterm and Final exams will be held at the midpoint and end of the class, respectively. These exams will be a combination of multiple choice, short answer and case study questions, and will cover the previous course material, including assigned readings.
4. Scrum Team Project - The project allows students to experience the full Scrum process in action over multiple sprints and highlights key agile principles through a set of hands-on exercises. The class will be organized into multiple scrum teams and given a product idea. They will use the Agile/Scrum process over multiple in-class sprint sessions to create a product design and solution (No coding required), which they will then present to the class, along with key learnings and a description of the process used.

Course Schedule

Week	Date (Wed)	Topic/Activities	Type
Week 1	9/3	Introductions Course and Syllabus Overview Module 1: Software Development Lifecycle and Agile	Lecture
Week 2	9/10	Module 2: Agile Principles and Frameworks	Lecture
Week 3	9/17	Module 3: Scrum Framework, Part 1	Lecture + Discussion

		In-class Discussion: Agile Principles	
Week 4	9/24	Module 4: Scrum Framework, Part 2 Scrum Team Introductions	Lecture + Exercise
Week 5	10/1	Module 5: Software Estimation and Planning <i>Scrum Project - Iteration 1</i> Quiz 1	Lecture + Exercise + Quiz
Week 6	10/8	Module 6: Organizing Agile Teams and Managing Releases <i>Scrum Project - Iteration 2</i>	Lecture + Exercise
Week 7	10/15	Module 7: Software Tools for Agile Scrum <i>Scrum Project - Iteration 3</i>	Lecture + Exercise
Week 8	10/22	<i>Scrum Simulation - Iteration 4</i> Mid Term Exam	Exercise + Mid-Term
Week 9	10/29	Module 8: System Architecture and Design in Agile <i>Scrum Project - Iteration 5 (Finalize Report and Presentation)</i>	Lecture + Exercise
Week 10	11/5	Scrum Project - Team Presentations	Presentations
Week 11	11/12	Module 9: Testing and Quality Assurance	Lecture
Week 12	11/19	Module 10: Frameworks for Scaling Agile Projects In-class Discussion: Testing in Agile	Lecture
Week 13	11/26	Module 11: Leading Agile Transformations in Organizations Quiz 2	Lecture + Quiz
Week 14	12/3	Lecture: Special Topics in Agile Final Exam Review Awarding of Scrum Master Certification	Lecture + Review
Week 15	12/10	Final Exam	Final Exam

Scrum Exercise (Team Project)

In the Agile Software Development Class, you will gain a deeper understanding of Agile principles, methodologies and their practical applications in software development projects. To reinforce your learning and demonstrate your proficiency in Agile practices, you will participate in a Scrum team over multiple iterations to design a product. The output of the team will be a product design or

simulated solution , and does NOT require a working solution or prototype.

Overview: Teams of 4-5 students will design a provided product over multiple simulated sprints using key Scrum events and artifacts.

Duration: 5 sprints of 1 week each with backlog grooming, sprint planning, daily standups, sprint review and a retrospective. Teams will document their progress of each event.

Recommended Schedule:
Iteration 1: Team self-organizes and selects roles. Team creates user stories, and performs Backlog Grooming and Sprint Planning events.
Iteration 2: Team performs Daily Scrum, Retrospective and Sprint Review events.
Iteration 3: Team performs Daily Scrum, Retrospective and Sprint Review events.
Iteration 4: Team performs Daily Scrum, Retrospective and Sprint Review events.
Iteration 5: Team finalizes the final report, and presentation.

Roles: Each team member will take on one Scrum role - Product Owner, Scrum Master, or Developer. Roles rotate each sprint iteration.

Sprint Execution: Teams self-organize to complete stories in the sprint backlog during 1 week sprints. Daily standups are held to inspect progress. Teams demonstrate product design features at the sprint review.

Teams will be given the opportunity to present their product and key learnings in a class session. The presentation will focus on a Product Overview, the Scrum Process and Progress, Challenges and Lessons Learned.

Grades will be assigned based on the results of their team project.

Scrum Master Certification

Students that successfully complete the Scrum Exercise and Quizzes/Midterms with a current grade of “C” or higher will be awarded an INFO 7245 ASD Scrum Master Certificate - Foundation Level (SMC-Foundational). This certification will attest to your level of achievement and competency for your knowledge and skills as a Scrum Master.

Grading

Grade Weighting

You will be graded on the following category of activities, using the percent grade weighting.

<i>Category</i>	<i>Component</i>	<i>Percent of Grade</i>
1	Quizzes, In-class Discussions,	25%

	Assignments and Attendance	
2	Scrum Project Exercise	25%
3	Mid-term Exam	25%
4	Final Exam	25%
Total		100%

Grade Scale

Percentage Range	Letter Grade	Grade Point Equivalent
95.0–100.0%	A	4.000
90.0–94.9%	A-	3.667
87.0–89.9%	B+	3.333
84.0–86.9%	B	3.000
80.0–83.9%	B-	2.667
77.0–79.9%	C+	2.333
74.0–76.9%	C	2.000
70.0–73.9%	C-	1.667
69.9% and Below	F	0.000

There will be quizzes and in-class discussions given during the course. Missed quizzes or in-class discussion will count as zero credit, unless you receive prior written approval of the instructor.

Incomplete Grades

An incomplete grade may be reported by the instructor when a student has failed to complete a major component of a required course, such as homework, a quiz or final examination, a term paper, or a laboratory project. Students may make up an incomplete grade by satisfying the requirements of the instructor. Be aware that instructors' policies on the granting of incomplete grades may vary and that the final decision on an incomplete grade is up to the instructor. Instructors may deny requests for an incomplete grade. If the missing assignment(s) have not been submitted to the instructor within 30 days from the end of the term in which the course was offered, or the agreed upon due date, the grade entered will reflect the student's grade in the course for the work completed and the missing assignments receiving no credit toward the final grade.

Attendance/Late Work Policy

Attendance Policy

In each term, students enrolled in on-ground sections are expected to be on campus and attending class beginning with the first day of classes. Students in online sections are expected to log in and participate in class beginning with the first day of classes. Students who join a class after the first day of class during the university add period, or who are approved for late registration by the instructor and the Graduate School of Engineering, are responsible for all coursework missed prior to enrolling. In the interest of students' success, the college does not support the arrival of students to class after the university add deadline. Enrolled students who do not attend class during the first week of a semester risk being dropped from the course.

In cases where an enrolled student cannot arrive on campus by the first day of class due to circumstances beyond their control, it is the student's responsibility to contact the instructor for approval and notify the Graduate School of Engineering.

Students registered in MGEN courses (INFO, CSYE, and DAMG) are **allowed a maximum of 2 absences per course, with 3 or more absences resulting in an 'F' for that course**. Course instructors are not expected to make accommodations and students are expected to inform their instructors of any absences in advance of the class. Should a student anticipate being unable to attend 3 or more classes, they should discuss their situation with their Academic Advisor to explore other types of leave and accommodations in accordance with the University's academic and global entry expectations. Students may be asked to share communications about class absences with their Academic Advisor. If a student is sick long-term or experiences a medical issue that prevents class attendance, it is strongly encouraged that they speak with their Academic Advisor (coe-gradadvising@northeastern.edu) to learn more about the Medical Leave of Absence. International students should review the Office of Global Services webpage to understand their visa compliance requirements.

Teaching Assistants (TAs) or Instructional Assistants (IAs) will be present at each class to collect student attendance.

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 and will not receive credit.

Course Evaluations

Student feedback on their learning experience is valuable and helps improve future courses. We encourage all students to complete the course evaluation surveys when they become available.

Surveys are distributed at both the midterm mark and the end of the term via email and are completely anonymous and confidential. Any questions about the surveys can be directed to mgen-programs@coe.northeastern.edu

MGEN Student Feedback

Students who would like to provide the MGEN unit with anonymous feedback on this particular course, Teaching Assistants, Instructional Assistants, professors, or to provide general feedback regarding their program, may do so using this survey: https://neu.co1.qualtrics.com/jfe/form/SV_cTIAbH7ZRaaW0Ki

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.

The following is a broad overview, but not an all-encompassing definition, of what constitutes a violation of academic integrity:

Cheating: The University defines cheating as using or attempting to use unauthorized materials, information, or study aids in any academic exercise. When completing any academic assignment, a student shall rely on their own mastery of the subject.

Fabrication: The University defines fabrication as falsification, misrepresentation, or invention of any information, data, or citation in an academic exercise.

Plagiarism: The University defines plagiarism as using as one's own the words, ideas, data, code, or other original academic material of another without providing proper citation or attribution. Plagiarism can apply to any assignment, either final or drafted copies, and it can occur either accidentally or deliberately. Claiming that one has "forgotten" to document ideas or material taken from another source does not exempt one from plagiarizing.

Unauthorized Collaboration: The University defines unauthorized collaboration as instances when students submit individual academic works that are substantially similar to one another. While several students may have the same source material, any analysis, interpretation, or reporting of data required by an assignment must be each individual's independent work unless the instructor has explicitly granted permission for group work.

Participation in Academically Dishonest Activities: The University defines participation in academically dishonest activities as any action taken by a student with the intention of gaining an unfair advantage over other students.

Facilitating Academic Dishonesty: The University defines facilitating academic dishonesty as intentionally or knowingly helping or contributing to the violation of any provision of this policy.

Please visit <https://osccr.sites.northeastern.edu/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 outlined in 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/uhrs>.

Student Accommodations/Disability Access Services (DAS)

Northeastern University and Disability Access Services (DAS) 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 DAS, students must provide documentation of a disability that demonstrates a current substantial limitation. Accommodations are approved based on a review of the information that is submitted and reviews are done on a case-by-case basis.

If the course is conducted in an on-ground (in-person) format, students are expected to attend class physically as scheduled. Professors are not required to provide virtual attendance links unless a student has documented accommodation approved by the Disability Access Services (DAS) office and their Academic Advisor. If a student requires accommodation for remote participation, they must

submit a formal request through the Disability Office and coordinate with their Academic Advisor prior to the course start date. For more information, visit <https://disabilityaccessservices.sites.northeastern.edu/>

Office of Global Services

As an F-1, J-1, or Study Permit student, you must meet certain obligations in order to maintain lawful nonimmigrant status. Maintaining status is necessary in order to retain eligibility for the benefits of F-1 or J-1 status, such as employment authorization and program extension, and can be crucial to a successful application for a change or adjustment of nonimmigrant status in the future. Failure to maintain your nonimmigrant status can result in serious problems with immigration and could lead to deportation from the U.S. or Canada.

Students must maintain on-ground presence throughout the academic term. At Northeastern, there are four different defined instructional methods: Traditional, Hybrid, Live Cast, and Online. Traditional, Hybrid, and Live Cast courses meet the Visas' on-ground presence requirements. Online courses do not meet the Visas' on-ground presence requirements.

Students enrolled in Summer courses should adhere to OGS guidelines on maintaining status during the Summer term.

For more information please visit,
<https://international.northeastern.edu/ogs/current-students/understanding-visa-requirements/guidelines-on-maintaining-status/>

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 <https://library.northeastern.edu> Network Campus Library Services: Northeastern University Library Global Campus Portals

24/7 Canvas Technical Help For immediate technical support for Canvas, call 617-373-4357 or email help@northeastern.edu 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

Outreach, Engagement, Belonging

Northeastern University is committed to fostering a community of belonging, which is essential to the advancement of Northeastern University's mission of teaching and research. Our university is stronger as a result of the varied backgrounds, experiences, and perspectives that all members of our global community bring to the pursuit of knowledge. Embracing this pluralism is not the work of one office, department, or academic unit. It is a shared responsibility that spans disciplines and boundaries. By harnessing the power of our differences, we will continue to light the path to bold new ideas and life-changing discoveries.

It is my intention that students from all backgrounds and perspectives will be well served by this course, and that the diverse experiences that students bring to this class will be viewed as an asset. I welcome individuals of all ages, backgrounds, beliefs, ethnicities, genders, gender identities, gender expressions, national origins, religious affiliations, sexual orientations, socioeconomic background, family education level, ability – and other visible and nonvisible differences. All members of this class are expected to contribute to a respectful, welcoming and belonging environment for every other member of the class. Your suggestions are encouraged and appreciated. Please visit Belonging at Northeastern – Northeastern Provost for complete information.

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.

The Office for University Equity and Compliance (OUEC) leads Northeastern University's efforts in maintaining compliance with all federal, state, and provincial civil rights laws and prohibits discrimination within any of its programs, activities, and services. Please visit <https://ouec.northeastern.edu/> for more information and for the link to file a report