Carnegie Mellon University
Heinz College of Information Systems and Public Policy
School of Information Systems and Management

95874 AGILE METHODS

Course Information for Fall 2021 Semester

Introduction
We are living in an era of digital disruption, where the creation of new digital applications, product, services, and innovations are critical to ensure continuous success of enterprises. Navigating the imperatives of digital disruption requires organizations to become more Agile, to embrace continuous change and to deliver a continuous flow of values with quality at a rapid pace to the customers. This explains the wide adoption of Agile Methods in enterprises worldwide. Started in software development, Agile Methods have spread to other industries, such as hardware development, services, marketing, etc.

In this course, we learn the history of Agile Methods, Agile Manifesto, the principles and how to apply in workplace or daily life. The course covers Scrum framework, roles, events, artifacts, Kanban and key practices used across industries. Case studies and workshops are included to impress learning. The knowledge and understanding would enable you to have a great advantage when you start or continue your career in any organization!

Who this course benefits:
Agile Methods is the perfect course for students or professionals having career aspirations within any departmental functions (such as Product Management, Product Development, Human Resources, Sales & Marketing, Finance, Supply Chain, etc.) and wanting to learn through practical application how organizations deliver continuous value and embrace continuous change.

Prerequisites
Not required.

Course Learning Objectives

1. Students will gain hands-on skills and experience applying Agile Values and Principles, Agile Frameworks as they engage in using Scrum and Kanban during this course - both are popular Agile methodologies in high demand with today's employers!

2. Students will gain good understanding and application of Scrum framework, Scrum roles, Scrum events, and artifacts. Case studies will be used to impress learning.

3. Students will be able to demonstrate critical thinking and applied problem-solving against a complex holistic system of agile values, principles and practices, and challenges.

4. Students will learn the strategic business drivers and benefits of Agile Methods, and the inherent complexities companies experience while adopting and scaling agile to the enterprise.

Optional: Upon completing the course, students can attempt at earning the Professional Scrum Master I (PSM I) certification through Scrum.org. The additional cost required is USD 150 per attempt. For those that like to do so, please let me know and I shall provide further information on this.

Course Structure

This course provides students with a good understanding of Agile Manifesto, its principles, and application. The Scrum framework is to be described in detail, and case studies are being used to provide students with greater understanding. Scrum roles, events, and artifacts will be discussed in length.

In addition, Kanban methodology is included and used within the Scrum framework. Scaling with multiple Agile teams within an enterprise will also be discussed.

The course is divided into 6 weeks of lectures with case study workshops. Various quizzes are used for students to test their understanding of the topic. In addition, a Group Assignment is included for students to work as a team and apply the learning.

Schedule of Course (subject to change if necessary)

Week	Topics	Assessments
1	Lesson 1: Digital Disruption, Agile overview, Agile Manifesto and principles	NA
2	Lesson 2: Scrum framework, Scrum team roles and responsibilities, Scrum Master, Product Owner, and Development Team, self-organizing team, case study initiated to prepare Product Backlog with Features. (team forming for Group Assignment work)	NA
3	Lesson 3: Scrum events and details, Sprint, Sprint Planning, Daily Scrum, Sprint Review and Retrospective, Planning Poker, team velocity, features and user stories, case study continues	Quiz 1 at the end of Lesson 3
4	Lesson 4: Scrum artifacts, Product Backlog, Burn-down chart, other common industry practices case studies continue, discussion and guidance about the Group Assignment	
5	Lesson 5: Kanban, Scaling to multiple Agile teams, discussion and guidance about the Group Assignment	Quiz 2 at the end of Lesson 5
6	Lesson 6: Presentation of Group Assignment, application to work and daily life	Presentation of Group Assignments at the end of Lesson 6.
7	No class.	Written Report for Group Assignment due Saturday 11:00pm. (to submit online)

* The above schedule is tentative and subject to changes, if necessary
* If class coincide with a public holiday, a replacement class will be announced.
* Attendances to all classes are required, and it carries scores to your grade

Course Instructor and Contact Details

Mail to: William Tan,

Carnegie Mellon University
220 Victoria Square
Adelaide SA 5000 Australia
Office Tel:
E-mail: wooimint@andrew.cmu.edu
Consultation hours: Friday 2pm to 4pm (Week 1 to Week 6)

Teaching Assistants: TBD

Key References:
Agile Manifesto and principles, Scrum Guide and Scaled Agile framework.

Lecture Notes:
Weekly notes are available during the class and PowerPoint file on Canvas. Other reading materials may be distributed during the class sessions.

Please be informed that you are **not allowed** to take pictures, video record, or audio tape during class without the explicit written consent from the instructor. Please do not use a laptop or cell phone during the class as well.

Course Assessments:
There is NO final exam. The assessments are based on quizzes in some of the sessions as tabulated above and a Group Assignment Presentation and Report. Attendance and participation during classes and case studies carry points towards your grade. Bonus points are available for those who assist and support others during the case studies.

Please be informed that **any late submission** of your work will be subjected to a penalty of five marks per day, unless you have obtained prior approval from the instructor.

Table below shows the distribution of marks across the assessments:

Assessments	Marks	Due dates
Attendance and participation (2 marks per session)	12	Each of the 6 Lessons
Quiz 1 (30 mins)	20	During Class (Week 3)
Quiz 2 (30 mins)	20	During Class (Week 5)
Group Assignment Presentation (5 mins per person, 4 to 6 persons per group)	10	During Class (Week 6)
Group Assignment Report	38	Group Assignment due Week 7, Saturday 11:00pm. (to submit online)
TOTAL	**100**	

Guideline for Grading Scale and Score Range:

Grade	Description	Points	Score Range (in marks)
A+	Exceptional	4.33	97 to 100
A	Excellent	4.00	93 to 96
A-	Very Good	3.67	90 to 92
B+	Good	3.33	86 to 89
B	Acceptable	3.00	80 to 85
B-	Fair	2.67	76 to 79
C+	Poor	2.33	70 to 75
C	Very Poor	2.00	66 to 69
C-	Minimal Passing	1.67	60 to 65
R	Fail	0.00	0 to 59

Please note that there is no rounding up of your marks. The following descriptive statements are guidelines used to grade your assessment components:

- **Grade A+** (Exceptional) Extraordinary piece of work for a graduate student. Work at this level is distinctively outstanding, ultra-high level of critical thinking, innovative ideas, crystal clear yet precise explanations with solid justifications and references, very sophisticated methodologies with professional level of writing and communication skills. Work is extraordinary; attain the highest academic and professional quality.

- **Grade A** (Excellent) Excellent work of a graduate student. Work at this level is unusually thorough, very high-level of critical thinking, innovative, superior explanations/justifications;

sophisticated methodologies, well written and superb presentation. Work is of outstanding, professional quality.

- **Grade A-** (Very Good) Strong work for a graduate student. Work at this level shows a high-level of critical thinking, some signs of creativity, is thorough and well-reasoned, good presentation, indicates a strong understanding of appropriate methodological or analytical approaches, and meet the professional standard.

- **Grade B+** (Good) Competent and sound work for a graduate student; well-reasoned and thorough, good presentation, a reasonable level of critical thinking, methodologically sound, but not especially creative or insightful or technically sophisticated. This is the graduate student grade that indicates the student has accomplished the objectives of the course, with an acceptable professional standard.

- **Grade B** (Acceptable) Fair work for a graduate student. Moderately thorough, some level of critical thinking, well-reasoned, demonstrating competency in the key course objectives but showing some indications that understanding of some key issues is less than complete. Methodologically or analytical approaches used are adequate but the student has shown one or more weaknesses or limitations.

- **Grade B-** (Fair) Basic work for a graduate student. Meets the basic expectations for a graduate student in the course; low level of critical thinking, understanding of salient issues is somewhat incomplete, methodological or analytical work performed in the course is basic, although adequate.
- **Grade C+** (Poor) Inadequate work for a graduate student; barely meets the basic expectations for a graduate student in the course. Work is inadequately developed or flawed by some errors and misunderstanding of important issues. Methodological or analytical work performed is deficient and barely demonstrates the knowledge or technical competence expected of graduate students.

- **Grade C** (Very Poor) Weak work for a graduate student; hardly meet the basic expectations for a graduate student in the course. Work is very poorly developed or flawed by numerous errors and lack of understanding of important issues. Methodological or analytical work performed is very weak and fails to demonstrate the knowledge or technical competence expected of graduate students.

- **Grade C-** (Minimal Passing) Very weak work for a graduate student; hardly meet the minimal expectations for a graduate student in the course. Work is carelessly developed or full of errors and missing important issues. Methodological or analytical work performed is mostly wrong and fails to demonstrate the knowledge or technical competence expected of graduate students.

- **Grade R** (Fail) Work fails to meet even minimal expectations for course credit for a graduate student. Performance has been consistently weak in methodology and understanding, with serious limits in many areas. Weaknesses or limits are pervasive.

- **Grade I** (Incomplete)

Academic Integrity

Heinz College takes very seriously its mission to produce graduates who are committed to ethical behavior in all phases of their professional lives. In this regard, the college views any cheating and plagiarism as serious offences. You are required to review thoroughly the material on academic integrity presented in master's program handbooks at: (https://www.australia.cmu.edu/student-experience/current-students) and to monitor your own actions carefully to prevent even the appearance of violations of academic integrity guidelines. Any violations of academic integrity in this class will have the following consequences: (a) zero mark for assignments or exams; and (b) in more serious offences, failing the class.

You are, however, allowed to form small study groups to "brain-storm" on assignments and case studies. Group collaboration is defined as "group discussions or brain-storming on the issues of an assignment or a case, followed by submission of independent work". It is wrong for you to submit an assignment in which one or more answers represent the work of other classmates.

Course Web Page

This course has set up the following URL: http://cmu.edu/canvas which represents an entrance point to an integrated course management system called Canvas.

All students who are registered may log in using their Andrew ID and passwords. After log-in, you will enter a Canvas "homepage" with links to all CMU courses (such as this one) that have developed custom Web pages using Canvas LMS technology. Click on "Agile Methods", and you will be transferred to a Canvas web site for this course.

The site allows you to access a number of resources, including:

- Course syllabus
- Lecture notes in a PowerPoint file
- Course updates and announcements
- Threaded discussion sections for all course-related issues
- Links to other Internet resources

You should form a habit to check the course web page at least twice a week to stay current with course issues. Please use the online help to familiarize yourself with Canvas features.

Accommodations for Students with Disabilities:

If you have a disability and are registered with the Office of Disability Resources, I encourage you to use their online system to notify me of your accommodations and discuss your needs with me as early in the semester as possible. I will work with you to ensure that accommodations are provided as appropriate. If you suspect that you may have a disability and would benefit from accommodations but are not yet registered with the Office of Disability Resources, I encourage you to contact them at access@andrew.cmu.edu.

Statement of Support for Students' Health & Well-being

Please take good care of yourself. Do your best to maintain a healthy lifestyle this semester by eating well, exercising, avoiding drugs and alcohol, getting enough sleep and taking some time to relax. This will help you achieve your goals and cope with stress.

If you or anyone you know experiences any academic stress, difficult life events, or feelings like anxiety or depression, we strongly encourage you to seek advice and support from professional Counselling and Psychological Services (CaPS). You are strongly encouraged to make a private appointment with the Director of Program or Academic Advisor to seek help and also visit http://www.cmu.edu/counseling/. You may also consider reaching out to a friend, faculty or family member you trust for help getting connected to the support that can help.