Agile Project Management for Engineers and Scientist
EGN 4932

Section APM1 / Class #29449
Class Period / Location: Hybrid; Thursday, Period 5 (11:45 a.m. – 12:35 p.m.) / WERT 370

Academic Term: Spring 2024

Instructor:

Samuel Lopez, Jr. DBA, PMP Adjunct Instructional Professor
Engineering Leadership Institute, University of Florida Herbert Wertheim College of Engineering

a. E-mail address: samuel.lopez@ufl.edu
b. Office hours: By appointment only via telephone or Zoom
c. Web site: UF course Canvas web site

Course Description:
This course provides students with a comprehensive understanding of the agile mindset, and why agility is often needed when managing complex-adaptive products and projects in a volatile and uncertain environment. The course promotes agile thinking and applications using the Scrum framework and identifies conditions that enable (and disable) personal and organizational agility.

Credit Hours: 3

Course Pre-Requisites / Co-Requisites: Junior or Senior level standing

Course Objectives:
In today's competitive and often complex work environment, engineers and other professional staff are very likely to be called upon to manage projects (or tasks) that implement their stakeholders' (or company's) products, services, or developments in an optimized and efficient manner. This course provides students with skills and knowledge in organizing multi-disciplinary teams to achieve successful project outcomes using an Adaptive or Agile project management lifecycle.

The main goals for the course are summarized below. Students completing the course will be able to:

• Understand and explain what "Agile" is and how it is used within the project management lifecycle
• Recognize, develop, and apply an agile mindset for building complex-adaptive products and services using the Scrum framework
• Understand and apply agile values, principles, tools, and structures that promote greater agility
• Develop and apply skills that are useful to grow agile capabilities personally and organizationally

Course completion will count as an optional 3rd course to obtain the Undergraduate Engineering Project Management Certificate offered by the HWCOE and issued by the UF Engineering Leadership Institute. https://www.eng.ufl.edu/leadership/curriculum/certificates/

Materials and Supply Fees: None

Required Textbooks and Software:

a) Title: **The Project Manager's Guide to Mastering Agile**
b) Author: Charles G. Cobb
c) Publisher: Wiley (John Wiley & Sons, Inc.)
d) Copyright Date: 2023
e) 2nd Edition, ISBN number: 978-1119931355

The course text will be available free of charge to all enrolled students through the Course Reserve tab in Canvas. In addition, students should expect to have additional reading assignments that will be posted on the Course Reserve tab (comprised of journal articles) and other handouts (posted on the modules tab) that support various project components under discussion at the time.

Software:

- Microsoft Excel
- Ability to create Adobe PDF files
- Miro and Trello (available through their respective website)
- Browser: Either Chrome or Firefox to access the course through Canvas

Hardware:

- Internet access required
- Requirements for using the Honorlock system for online proctored exams:
  - A well-functioning computer (min rqmts below) w/ stable Internet.
  - A webcam with a microphone.
  - A camera may also be required to do a 360-degree rotation for a testing room scan (at the professor's or exam proctor's discretion).
  - A Student ID Card (or another government-issued photo ID).

Minimum Computer Requirements for Honorlock Use:

System Power	Dual-core 2.4 Ghz CPU, 2 GB Ram or better Intel Processor, 2 GB Ram or better
Operating System	Windows 10 Mac OS 10.13 or greater Chrome OS 79 and higher
Supported Browser	Google Chrome – version 79 and higher
Internet Connection	Speed: 1.5 Mbps download, 750 Kbps upload
Camera Resolution	400 x 300 resolution or greater
Extras	JavaScript and Cookies Enabled

Honorlock Student Support: 1-844-243-2500

Course Schedule:
The course will be delivered according to the following schedule (subject to revision by the course instructor via Canvas, as necessary):

Week #	Week Beginning	Module	Topic	Readings	Quizzes	Exam
1	1/8/2024	1	Introduction, Syllabus Review, Basic Concepts	Listed in Canvas	Welcome & Syllabus Quiz	---
2[a]	1/16/2024	2	PM Lifecycle, History of Agile, Team Formation	Listed in Canvas	Module 2 Quiz	---
3	1/22/2024	3	Agile "Mindset" & Complex-Adaptive Products	Listed in Canvas	Module 3 Quiz	---
4	1/29/2024	4	Agile Leadership & Agile Teams	Listed in Canvas	Module 4 Quiz	---
5	2/5/2024	5	Agile Across Engineering Domains, Choosing Agile	Listed in Canvas	Module 5 Quiz	*Unit Exam #1 Modules 2,3,4,5
6	2/12/2024	6	Define Empiricism, Intro to Scrum	Listed in Canvas	Module 6 Quiz	---
7	2/19/2024	7	Product Goal, Product Backlog, Sprint Backlog	Listed in Canvas	Module 7 Quiz	---
8	2/26/2024	8	Scrum Events	Listed in Canvas	Module 8 Quiz	---
9	3/4/2024	9	Theory of Constraints, Kanban	Listed in Canvas	Module 9 Quiz	---
10[a]	3/11/2024	- - -Spring Break - - -				
11	3/18/2024	10	Combining Scrum & Kanban (Scrumban)	Listed in Canvas	Module 10 Quiz	*Unit Exam #2 Modules 6,7,8,9,10
12	3/25/2024	11,12	Agile Estimation (Part 1 & 2)	Listed in Canvas	Module 11 and 12 Quiz	---
13	4/1/2024	13	Scaling Agile	Listed in Canvas	Module 13 Quiz	---
14	4/8/2024	14	Agile Project Challenges	Listed in Canvas	Module 14 Quiz	---
15	4/15/2024	15	Course Summary	Listed in Canvas	---	---
16[b]	4/22/2024	End of Course		---	---	*Unit Exam #3 Modules 11,12,13,14,15

[a] Holidays are 1/15/2024 (MLK Birthday); 3/9/2024 - 3/16/2024 (Spring Break)
[b] Last day of the Course is 4/24/2024
* HonorLock required

As shown, the course is modular in design and follows a weekly schedule. The recommended approach is to open the Canvas course site and start at the beginning (look for the "Start Here" box). Overall, each module begins with a list of learning objectives. These are things you should be able to do when you finish the module. Next is a to do list which shows in a stepwise fashion all the things you need to do to complete the module, followed by instructional materials that consist of concept lectures, applicable videos, and supplemental readings. Lastly, module activities are listed with links to the appropriate information. Activities consist of individual assignments, team assignments, and course assessments. The preferred method of navigating through the course content is to click the "Next" button at the bottom of each page when you are ready to move on.

Based on the course schedule, this course will be delivered in a hybrid format with a single weekly 1-period lecture-based session (each Thursday in WERT 370 at the time listed for each section) coupled with a single weekly 2-period team-based session (typically each Tuesday in a location and at a time that will vary according to team preferences), primarily in the "flipped" classroom mode; namely, students will be required to preview the weekly lecture material prior to attending the weekly lecture-based session (each Thursday), which will be devoted to clarification, understanding, and assessment of the previewed lecture material. The following team-based session (typically each Tuesday) will involve practical application of the theories learned through discussion and case study analysis as learning assignments to be submitted by the individual student and/or project teams. The Tuesday "team collaboration" efforts will enable the practical application and demonstration of the prior Thursday lecture-based session theory. Students may also experience the need to work asynchronously to meet course requirements; consistent with UF's expectations for a 3 credit-hour course, the anticipated weekly workload is 9 hours.

The course is designed to introduce engineering students to the concepts, theories, and applications of agile project management in multiple professional settings. Students will obtain a strong team-based and individual hands-on learning experience through a course curriculum consisting of supporting lectures on the various theories of project management and the application of these theories through team-based learning activities and assignments utilizing case studies and role-playing.

Professional Component and Relation to Program Outcomes (ABET):
This course is not specific to a major under ABET purview. However, the course meets the required level of contact hours of formal project management education necessary for the Project Management Institute (PMI) designation as a Certified Associate in Project Management (CAPM). Meeting this requirement enables the student to undertake the certification examination for this level (along with the student's degree certification).

Attendance Policy, Class Expectations, Make-Up Policy:
Students are expected to attend all lectures and actively participate in all course content and team-based collaborations. Unexcused absences will result in loss of points for the Team Participation assignments. Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies. Click here to read the university attendance policies: https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies

Evaluation of Grades:
The anticipated allocation of class points is shown below, although points associated with each class component are approximate and may vary depending on changes by the instructor.

Class Component	Total Points	Points for Each	Percentage of Final Grade
Individual/Team Assignments	*805*		
Individual Assignments	225	varies	*60%*
Team Assignments	580	varies	
Quizzes/Exams	*515*		
Quizzes (14)	140	10	*40%*
Exams (3)	375	125	
TOTAL :	***1,320***		***100%***

Grading Policy:
The final class grade will be based on the student's performance on all class assignments within the published grade scale shown below. There will be no grading 'curve' for this class; however, opportunities exist to earn additional credit based on individual performance on team assignments (according to the team performance evaluation detailed below). There is no opportunity for additional credit assignments.

Percent	Grade	Grade Points
90.0 – 100	A	4.00
87.0 – 89.9	A-	3.67
84.0 – 86.9	B+	3.33
81.0 – 83.9	B	3.00
78.0 – 80.9	B-	2.67
75.0 – 77.9	C+	2.33
72.0 – 74.9	C	2.00
69.0 – 71.9	C-	1.67
66.0 – 68.9	D+	1.33
63.0 – 65.9	D	1.00
60.0 – 62.9	D-	0.67
0 – 59.9	E	0.00

More information on UF grading policies can be found at:
https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

Individual Expectations:
Scheduled exams, individual assignments, and lecture quizzes must be accomplished within the scheduled "time windows" identified on the Canvas course site. These class components may be made up only through excused absences in compliance with published UF policies.

The process to request an excused absence is to make a request through Canvas e-mail to the instructor at least 48 hours prior to the item "Start" time shown on the Canvas course site. The instructor will review the request and reply via a timely return e-mail either granting or denying the request. It is the student's responsibility to secure a determination of the excused absence request. Appropriate documentation may be requested by the instructor.

Unless stated otherwise, individual assignments and quizzes/exams are to be submitted via Canvas by the stated deadline ("Due" date). Late individual submissions (after the "Due" date but before the item closes on the Canvas course site) for any unexcused absences will result in a 20% reduction in grade for the item. Submissions made after the item closes will not receive credit, subject to published UF policies (https://catalog.ufl.edu/ugrad/current).

Team Expectations:

Team Structure:

Agile Project Management is a team-based "sport" that requires team members to effectively work together, including working through differences and issues that may occur to create a high-quality submittal by the scheduled delivery date. To this end, the participation expectations and team formation components of this course are summarized below:

- Four specific roles will be rotated between individual team members for the numerous team assignments throughout the semester. These consist of assignment management/leadership roles (Project Manager [PM], Product Owner [PO], and Scrum Master [SM]) and the key role of Team Member (TM). Each student will serve in all assignment management/leadership roles at least once during the semester and perhaps multiple times, depending on class enrollment. The instructor will publish a role roster by assignment for the semester once the teams are established.
- Roles may be switched due to conflicts during the semester, but it is up to the student desiring a change to seek out and agree with another member of their team regarding the role swap. The adjustment may only occur between the roles of PM, PO, and SM, and must be an equal swap: PM for PM, PO for PO, and SM for SM. Once agreed upon, the instructor must then be notified of the change so the assignment role roster can be updated.
- Responsibilities for the four specific roles are provided on the Canvas course site. It is the student's responsibility to read and understand each role description to guide their execution when they are assigned each responsibility.

Team Formation:

Five- to six-person teams will be formed following the drop/add period at the beginning of the semester to execute and deliver team assignments throughout the course. The instructor will coordinate the formation of all teams.

Team formation will involve instructor assignment of students to teams. This approach is the most "real-world" as staff in a professional setting typically have little to no say in the composition of their team; team formation is instead a function of the project and company needs as well as the experience and qualification of potential team members. Team formation in this manner will also enable students to make new acquaintances as they pursue successful team assignments together.

Team Performance Assessments:

When assigned via Canvas, all members will review each team member's performance in their assigned role using the provided templates. The PM's review may carry a slightly higher weighting. In this way, there will be a round-robin review of all team roles from different reviewer perspectives. The review summary is shown in the following table:

Performance Assessment Summary Table

	Roles Reviewed			
Reviewer	PM	PO	SM	Team
PM		✓	✓	✓
PO	✓		✓	✓
SC	✓	✓		✓
Team (not self)	✓	✓	✓	✓

Performance assessments of each role component will be evaluated according to the detailed descriptions of the following criteria available in the assessment template:

No Participation	Significant Underperformance	Met Expectations	Exceeded Expectations	Above and Beyond

A performance score will be determined based on a scale of 1 (no participation) to 5 (above and beyond). The average score for all evaluated criteria (see the role descriptions in Canvas) will be calculated and **applied to the individual student's team score** according to the assessment score ranges published in the assessment tool for each assignment. Based on this process, an individual student's team score may result in a bonus addition or deduction from the overall team score.

Justification for any evaluation resulting in either a bonus addition or a deduction from the team score will require a detailed rationale comment by the reviewer in the evaluation template. Each reviewer will conduct their performance reviews as assigned in Canvas by the specified due date. *Properly evaluating individual performance is a critical skillset for a Project Manager and the expectation is for team members to identify underperformance and exceeding expectation behavior.* The Professor may change an individual's team score after qualitative review of team member assessments including review of the rationale comments.

Excused Absences from Team Assignments and Late Team Submittals:

All team assignments are expected to be accomplished by the scheduled completion date in Canvas. In recognition of events occurring outside the student's control, excused absences for team assignments may granted in compliance with university policies in the Undergraduate Catalog.

The process to request an excused absence is to make a request through Canvas email to the instructor at least 48 hours prior to the assignment availability date in Canvas. The instructor will review the request and reply via a timely return email either granting or denying the request. It is the student's responsibility to secure a determination of the excused absence request. Appropriate documentation for the absence may be requested by the instructor.

Approved excused absences from team assignments will result in a 'Met Expectations" score for the assignment (the team's graded score). Where possible, it is expected the excused student will continue to support the team's assignment development efforts. Unexcused absences will be deemed a "No Participation" assessment resulting in zero (0) points for the assignment, subject to the policies of the Undergraduate catalog (**https://catalog.ufl.edu/ugrad/current**) as appropriate.

Late team submittals will result in a 10% reduction in points available for the assignment. Submittals beyond the 'Until' date in Canvas (3 days) will receive no (0) points, subject also to the policies of the Undergraduate catalog https://catalog.ufl.edu/ugrad/current), as appropriate.

Confidentiality of Reviews:

Individual performance reviews by assignment team members are expected to be confidential and may **not** be shared with anyone other than the instructor, although reviewers may jointly discuss their evaluation of team members regarding specific criteria considerations prior to submittal of the assignment.

Review Inquiry/Appeal Process:

Students who received an adverse review with subsequent adjustment of their assignment score may, at their choosing, initiate an inquiry process to receive an explanation of the basis of an adverse rating. This will be accomplished using a tiered approach.

Tier 1 involves a zoom or telephone discussion with all members of the assignment team that conducted the reviews. For students who are requesting the inquiry, the assignment PM will facilitate the discussion (SC if the PM is requesting the inquiry) and explain to the student making the appeal the primary source areas of the adverse review. The intent of the Tier 1 discussion is to resolve any issues satisfactorily within the assignment team and the team member and to make any recommended adjustments to the instructor, which may also include no change. Changes in the assessment workbook (along with modified justification) should be resubmitted to Canvas by the applicable reviewer(s).

In the unlikely event that the issue is not resolved at the Tier 1 level, Tier 2 will be invoked. This requires the instructor to convene a new meeting with all parties to facilitate a discussion and reach agreement between all parties. The intent of the Tier 2 level is for the facilitator to drive the discussion to a conclusion. If no agreement is reached at the end of Tier 2, then the instructor will issue a final determination.

The process to request an excused absence is to make a request through Canvas e-mail to the instructor at least 48 hours prior to the item "Start" time shown on the Canvas course site, making sure the entire team is aware of the individual request. The instructor will review the request and reply via a timely return e-mail either granting or denying the request. It is the student's responsibility to secure a determination of the excused absence request. Appropriate documentation may be requested by the instructor.

Approved excused absences will remove individual responsibilities from team assignments. Where possible, it is expected that the excused student will continue to support the team's assignment development efforts. Unexcused absences will result in zero (0) points for the assignment, subject to published UF policies.

Unless stated otherwise, team assignments are to be submitted via Canvas by the stated deadline ("Due" date). Late team submissions (after the "Due" date but before the item closes on the Canvas course site) for any unexcused absences will result in a 20% reduction in grade for the item. Submissions made after the item closes will not receive credit, subject to published UF policies (https://catalog.ufl.edu/ugrad/current).

Students Requiring Accommodations:
Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center (DRC) by visiting https://disability.ufl.edu/students/get-started. Students should share their accommodation letter with their instructor and discuss their access needs as early as possible in the semester.

Course Evaluation:
Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance for students on how to give course feedback in a professional and respectful manner is available at the following link: https://gatorevals.aa.ufl.edu/students. Students will be notified when the evaluation period opens and can complete evaluations through the e-mail they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results.

Use of A.I.:
If you choose to use A.I. (ChatGPT or BingAI) in completing any of your work in this class, please note the following guidelines must be followed:

- Be aware of the limits of the A.I. tools. The results you get are very dependent on the prompts you use and how well you define those prompts. The numbers and facts you may get could be completely wrong so unless you can independently confirm the results through another source, do not trust that they are correct. You will be responsible for any incorrect numbers or facts you get from using the tool.
- A.I. is a tool and, as such, you must acknowledge that you used it in completing any work for the class. You must include a paragraph at the end of any assignment in which you used AI explaining how you used it and what prompts you used to get the results. Failure to do so may be considered a violation of academic honesty policy.

In-Class Recording:
Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are: (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A "class lecture" is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To "publish" means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another

person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third-party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

University Honesty Policy:
University of Florida students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code." On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The UF Honor Code (https://sccr.dso.ufl.edu/process/student-conduct-code) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor in this class.

Commitment to a Safe and Inclusive Learning Environment:
The UF Herbert Wertheim College of Engineering values broad diversity within our community and is committed to individual and group empowerment, inclusion, and the elimination of discrimination. It is expected that every person in this class will treat one another with dignity and respect regardless of gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture.

If you feel like your performance in class is being impacted by discrimination or harassment of any kind, please contact your instructor or any of the following:

- Your academic advisor or Undergraduate Program Coordinator
- Jennifer Nappo, Director of Human Resources, 352-392-0904, jpennacc@ufl.edu
- Curtis Taylor, Associate Dean of Student Affairs, 352-392-2177, taylor@eng.ufl.edu
- Toshikazu Nishida, Associate Dean of Academic Affairs, 352-392-0943, nishida@eng.ufl.edu

Software Use:
All faculty, staff, and students of the University of Florida are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University of Florida policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

Student Privacy:
There are federal laws protecting your privacy with regard to grades earned in courses and on individual assignments. For more information, please see: https://registrar.ufl.edu/ferpa.html.

Campus Resources:

Health and Wellness:

U Matter, We Care:
Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact umatter@ufl.edu so that the U Matter, We Care Team can reach out to the student in distress. Nighttime and weekend crisis counselors are available at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing Staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.

Counseling and Wellness Center:
https://counseling.ufl.edu, and 392-1575; and the University Police Department at 392-1111 or 9-1-1 for emergencies.

Sexual Discrimination, Harassment, Assault, or Violence:
If you or a friend has been subjected to sexual discrimination, sexual harassment, sexual assault, or violence contact the **Office of Title IX Compliance**, located at Yon Hall Room 427, 1908 Stadium Road, (352) 273-1094, title-ix@ufl.edu.

Sexual Assault Recovery Services (SARS):
Student Health Care Center at 392-1161.

University Police Department:
392-1111 (or 9-1-1 for emergencies) or at https://police.ufl.edu

Academic Resources:

E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu. https://lss.at.ufl.edu/help.shtml.

Career Resource Center, Reitz Union, 392-1601. Career assistance and counseling. https://career.ufl.edu.

Library Support, https://uflib.ufl.edu/find/ask. Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring. https://teachingcenter.ufl.edu.

Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers. https://writing.ufl.edu/writing-studio.

Student Complaints Campus:
https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code ; https://care.dso.ufl.edu

Online Student Complaints:
https://distance.ufl.edu/state-authorization-status/#student-complaint