Fundamentals of Engineering Project Management

Course EGS6626
Section 1FE2/Class 13014; Section 2FED/Class 13015
Section CAMP/Class 13013; Section FDOT/Class 22041
Meeting Day and Location: Online Only
Academic Term: Fall 2023

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: Provides engineering students with a comprehensive understanding of how to plan, optimize and efficiently manage projects (or tasks) to implement products, services, or developments. This includes building the structure, processes, components, and linkages with a team for successful project delivery within scope, schedule, budget, and quality requirements.

Pre-requisite: None

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, efficient manner. This course provides students with skills and knowledge in organizing multi-disciplinary teams to achieve successful project outcomes; enables students to understand the key components of a successful project and to integrate the necessary processes, components, and attributes into execution of their projects; allows practicing of communication skills to organize project teams; and facilitates students to develop project trouble-shooting capabilities through careful analysis and root cause determinations.

Specific learning objectives are: To prepare engineering students to plan, develop, lead, manage, and successfully implement and deliver projects within their chosen technical area. This involves an in-depth study of the various components, phases, and attributes of a project. Coupled with the theory of project management, students will practice and gain hands-on experience with the implementation and use of many key project components in a team setting, utilizing the practice of implementing concepts of theory through team-based and individual exercises that analyze case studies and apply newly gained knowledge to real-life examples. Students will have the opportunity to link their knowledge and skills together to understand the basis of a successful project.

Materials and Supply Fees: None

Required Textbooks and Software:

   a. Title: A Guide to the Project Management Body of Knowledge (PMBOK Guide)
   b. Author: Project Management Institute, Inc.
   c. Publication date and edition: 2021, Seventh Edition
   d. ISBN number: 978-1628256642

The PMBOK Guide 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.

- Any needed supplemental material can be purchased directly through the link(s) provided in Canvas

Software:

- Microsoft Excel
- Ability to create Adobe PDF files
- Microsoft Project (app available at no charge to all enrolled students)
- Browser: Either Chrome or Firefox must be used to access the course through Canvas

Hardware:

- Internet access required
- Requirements for using the Honorlock system for online proctored exams:
  - A well-functioning computer (see minimum requirements below) with a stable Internet connection.
  - 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

Recommended Reading: assigned as applicable. Required readings have been specifically chosen to provide a certain insight or skill; questions regarding reading content may be included in the exams.

Course Outline: The course will be delivered according to the following sequence (subject to specific details provided by the instructor via Canvas):

Week #	Week Beginning	Module	Topic	Readings	Quizzes	Exam
1	8/23/2023	1	Introduction, Syllabus Review, Basic Concepts	Listed in Canvas	Welcome & Syllabus Quiz	---
2	8/28/2023	2	PM History, Methodologies, Life Cycle	Listed in Canvas	Module 2 Quiz	---
3[a]	9/5/2023	3	Leadership, Management, Personality Styles	Listed in Canvas	Module 3 Quiz	---
4	9/11/2023	4	Contracts	Listed in Canvas	Module 4 Quiz	*Exam #1 Modules 2,3
5	9/18/2023	5	Risk Management	Listed in Canvas	Module 5 Quiz	---
6	9/25/2023	6	Health & Safety	Listed in Canvas	Module 6 Quiz	---
7	10/2/2023	7,8	QA/QC, Client Service	Listed in Canvas	Module 7 and 8 Quiz	*Exam #2 Modules 4,5,6
8	10/9/2023	9	Chartering, Endorsement, Scoping	Listed in Canvas	Module 9 Quiz	---
9	10/16/2023	10	WBS, Network Diagrams	Listed in Canvas	Module 10 Quiz	---
10	10/23/2023	11	Costing,Pricing, Budgeting, PxP	Listed in Canvas	Module 11 Quiz	*Exam #3 Modules 7,8,9,10
11	10/30/2023	12	Project Controls, EVM	Listed in Canvas	Module 12 Quiz	---
12[a]	11/6/2023	13	Status Reports, Invoicing, Change Mgt	Listed in Canvas	Module 13 Quiz	---
13	11/13/2023	14	Closeout, Lessons Learned	Listed in Canvas	Module 14 Quiz	---
14[a]	11/20/2023	- - -Thanksgiving Week - - -				
15	11/27/2023	15	Course Summary	Listed in Canvas	---	---
16[b]	12/4/2023	End of Course		---	---	*Exam #4 Modules 11,12,13,14,15
a Holidays are 9/4/2023 (Labor Day), 11/10/2023 (Veteran's Day) and 11/23/2023 (Thanksgiving)						
b Last day of the Course is 12/6/2023						
* HonorLock required						

Individual Expectations: Scheduled exams, individual assignments, and lecture quizzes must be accomplished within the scheduled 'time windows'. These items may be made up <u>only through excused absences</u> in compliance with university policies in the Graduate Catalog (http://gradcatalog.ufl.edu/content.php?catoid=10&navoid=2020#attendance) and in compliance with the process described later in the syllabus.

Late unexcused individual absence 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 graduate catalog http://gradschool.ufl.edu/students/catalog.html), as appropriate.

Team Assignments and Participation Expectations:

Expectations for Teams:

Engineering project management is a team-based "sport" that requires team members to effectively work together, including working through differences and/or issues that may occur in order to create a high-quality submittal by the scheduled delivery date. To this end, the expectations, team formation, and performance assessments of the teams in this course are summarized below:

- Four specific roles will be rotated between team members for team assignments throughout the term. These consist of assignment management and leadership roles such as Project Manager (PM), Senior Consultant (SC), and Quality Lead (QL). The last key role is that of Team Member (TM). A student will serve in all management roles at least once in the term and perhaps multiple times, depending on class enrollment. The instructor will publish a role roster by assignment for the term once the teams are established. Roles may be switched due to conflicts during the term, 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 swap may only occur between the roles of PM, SC, and QL, and must be an equal swap: PM for PM, SC for SC, and QL for QL. The instructor must then be notified of the change so the role roster can be updated.

- The responsibilities for each specific role are provided in Canvas. It is the student's responsibility to read and understand each role to guide their execution of the role when they are assigned that responsibility. In addition, their performance for each team assignment will be evaluated against these role descriptions as described in subsequent sections.

Team Formation:

Five- to six-person teams will be formed either the first or second week of the term to execute and deliver team assignments throughout the term. The instructor will coordinate the formation of the teams. Typically, this formation involves some freedom in choosing teammates, but also will involve instructor assignment of students to teams. The latter 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. This 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**	**SC**	**QL**	**Team**
PM		✓	✓	✓
SC	✓		✓	✓
QL	✓	✓		✓
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 Graduate 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 graduate catalog (http://gradschool.ufl.edu/students/catalog.html), 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 graduate catalog http://gradschool.ufl.edu/students/catalog.html), 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.

Evaluation of Grades: Allocation of points and the percent of the final grade for individual and team assignments, weekly quizzes, and four exams are shown here. Points associated with each assignment type are approximate and may vary depending on instructor changes.

Grading Policy:

On a rotating basis, students on team assignments may serve specific roles as either Senior Consultant, Quality Leads, or Team Members on their respective team assignments, in addition to possibly serving as the Project Manager for a specific team assignment. Up to six additional graded assignments for students will be required that demonstrate understanding and satisfactory performance of the various team roles.

Assignments	Total Points	% of Final Grade
Individual	115	9%
Team	565	43%
Weekly Quizzes	140	11%
Exams (4)	500	38%
Totals	1,320	100%

Individual and team assignments (up to 35) will comprise approximately 52% of total class points Quizzes (up to 14) and scheduled exams (up to 4) will comprise approximately 48% of the student's grade. All points regardless of the source have the same weighting.

Grading Scale: 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.

Total %	Grade	Grade Points
90.0-100.0	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

Grading Scale (rounded to tenths of a point)

More information on UF grading policy may be found at:
http://gradcatalog.ufl.edu/content.php?catoid=10&navoid=2020#grades

Students Requiring Accommodations:
Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, https://www.dso.ufl.edu/drc) by providing appropriate documentation. Once registered, students will

receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Course Evaluation:

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at https://evaluations.ufl.edu/evals. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/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.

University Honesty Policy:

UF 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 Honor Code (https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/) specifies several 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 or TAs in this class.

Commitment to a Safe and Inclusive Learning Environment:

The 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 Graduate Program Coordinator
- Robin Bielling, Director of Human Resources, 352-392-0903, rbielling@eng.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 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 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 regards to grades earned in courses and on individual assignments. For more information, please see: https://registrar.ufl.edu/ferpa.html

Online Course Recording:
Our class sessions may be audio visually recorded for students in the class to refer to and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.

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.

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. A nighttime and weekend crisis counselor are available by phone 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: http://www.counseling.ufl.edu/cwc, and 392-1575; and the University Police Department: 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, 392-1161.

University Police Department: 392-1111 (or 9-1-1 for emergencies), or http://www.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://www.crc.ufl.edu/.

Library Support, http://cms.uflib.ufl.edu/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://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf.

On-Line Students Complaints*: http://www.distance.ufl.edu/student-complaint-process.