

# ME EN 6180 – Project Management for Engineers

Section 001: In Person | Section 030: Distance Education

Department of Mechanical Engineering  
The University of Utah | Spring 2024

Prerequisites:  
graduate standing / instructor approval

This course covers, from a Systems Engineering perspective, the primary methods for successful project management relevant to engineering disciplines. Students are introduced to project management principles, practice, and performance domains as defined by the Project Management Institute. A continuous and in-depth examination of the Project Management Body of Knowledge (PMBOK) familiarizes students with the contents of the Project Management Professional (PMP) and Certified Associate in Project Management (CAPM) certification exams. Topics covered include proposal development, stakeholder identification, project scope, schedule, cost, communications, and risk management, as well as an investigation of models, methods, and artifacts devoted to tailoring the management process.

## COURSE CONTACTS

Instructor:

**Pedro Huebner**

[pedro.huebner@utah.edu](mailto:pedro.huebner@utah.edu)

Office: 1346 MEK

OH: Tuesdays | 11:00 AM - 1:00 PM  
Thursdays | at MEK 1346 or Zoom



PROGRAM WEBSITE

<https://systems.utah.edu>

## LEARNING OUTCOMES

Upon successful completion of this course, students shall be able to:

- Describe general Project Management (PM) principles, tools, and their applicability to engineering-specific projects and systems engineering endeavors.
- Define the several stages of the life cycle of projects, including the processes, stakeholders, obstacles, constraints, and risks associated with each step.
- Relate the practice of PM to that of Systems Engineering, including the domains, tools, and methods within each.
- Formulate effective PM strategies applied to 'real world' engineering problems.
- Utilize useful PM tools, such as Gantt charts, mind maps, work breakdown structures, project evaluation and review diagrams, PERT/critical path method, and earned value management.
- Demonstrate familiarity with select PM software packages, along with their benefits and limitations.
- Compare and contrast conventional project management, Agile, and Scrum techniques.
- Relate course materials to the literature from the Project Management Institute and its certification exams.

## COURSE STRUCTURE

The course is structured in the form of semiweekly meetings that may include lectures, demonstrations, discussion sessions, in-class assignments, review sessions, Q&As, quizzes, exams, etc. Attendance is encouraged for all course meetings. Students will be informed well in advance if an in-class activity has an impact on grade. Lecture notes are posted shortly before each lecture. Some course meetings may be mostly dedicated to the modelling of problems using information technology software. For that reason, students are welcome to bring their own computers to class.

Homework assignments must be submitted individually, but collaborative work is encouraged. In other words, students are free to work together when formulating problems and coming up with creative solutions but are required to submit their own work and not that of their colleagues. All assignments will require the submission of electronic materials via Canvas. Pay attention to specific instructions for each assignment provided during class and/or published online. Quizzes will be taken during class time and should take around 45 minutes to be completed. They will usually be administered at the end of lectures, so plan your attendance accordingly.

One midterm exam and one final exam will contain a variety of multiple choice, essay, and engineering-type questions. Exams are closed book and notes, but one double-sided letter-sized sheet of notes is allowed, unless otherwise

specified. Exams are typically designed to be completed within a 1-hour interval, but the full lecture time will be made available. You can use a calculator (scientific encouraged) to solve math problems. The use of smartphones or other communication devices is prohibited.

A few weeks into the semester, a group project will be assigned. The project is designed to allow students to display creativity and demonstrate that they have mastered the concepts illustrated in the course. All team members are expected to contribute equally to the completion of the project report. A peer evaluation will be conducted after the submission date where students will be rated by their teammates based on their individual contributions. The outcome of the peer evaluation will be taken into consideration for the grade portion related to the project.

## GENERAL POLICIES

All students and instructional staff are expected to follow proper classroom behavior and treat others with civility and respect. During course meetings, if anyone’s actions or behavior become disruptive, the instructor reserves the right to require them to leave the learning environment for the remainder of that day.

The use of computers and other communication devices during class is allowed for taking notes, referring to an electronic version of the textbook, and/or using calculation software. Cell phones must be silenced. Voice calls, texting, and social media are prohibited unless in case of emergencies or when explicitly authorized by the instructor. Snacks, drinks, coffee, and refreshments in general can be consumed if permitted by the building code. Liquids must be kept in leak- and spill-proof containers, and food must not produce strong sound or smell. Please, properly dispose of all waste and help keep our learning environments clean.

## REFERENCE TEXTS

This course will adopt several reference texts. Students should have access to an electronic copy of the first reference below at no additional cost using the J. Willard Marriott Library’s website. While on campus or logged in for off-campus access, use the permalink below to access the reference, download individual chapters, or view the entire book using your browser or third-party software. The next two items may be available on reserve and in physical form at the Marriott Library, please check their website form the most up to date information. Additional materials and other relevant references will be shared throughout the semester at no cost to students.

- Project Management Institute (PMI). [A Guide to the Project Management Body of Knowledge \(PMBOK Guide\) and The Standard for Project Management](#), 7th edition. Project Management Institute, 2021. Print ISBN: 9781628256642, eBook ISBN: 9781628256659, Marriot Library: [link](#).
- Larson, Erik; Gray, Clifford. [Project Management: The Managerial Process](#), 8<sup>th</sup> edition. McGraw Hill, 2020. Print ISBN: 9781260238860, eBook ISBN: 9781264151653, Publisher’s Website: [link](#).
- Kerzner, Harold. [Project Management: A Systems Approach to Planning, Scheduling, and Controlling](#), 13th edition. Wiley, 2022. Print ISBN: 9781119805373, eBook ISBN: 9781119805380, Publisher’s Website: [link](#).

## GRADING

	Weight	Notes
<b>Homework</b>	20%	4 assignments
<b>Quizzes</b>	10%	4 quizzes
<b>Group Project</b>	20%	1 project proposal
<b>Midterm Exam</b>	20%	sheet of notes allowed
<b>Final Exam</b>	30%	sheet of notes allowed

This course follows the letter grading scheme below:			
95 ≤ <b>A</b> ≤ 100 90 ≤ <b>A-</b> < 95	87 ≤ <b>B+</b> < 90 83 ≤ <b>B</b> < 87 80 ≤ <b>B-</b> < 83	77 ≤ <b>C+</b> < 80 73 ≤ <b>C</b> < 77 70 ≤ <b>C-</b> < 73	67 ≤ <b>D+</b> < 70 63 ≤ <b>D</b> < 67 60 ≤ <b>D-</b> < 63 0 ≤ <b>E</b> < 60
The option to curve the overall grade distribution is at the sole discretion of the instructor and will never be in disadvantage of any student.			

Regrade and grade correction requests must be made directly to the course instructor no later than one week after the grade or work in question has been returned. Please monitor your grades posted in Canvas continuously as it holds the course’s official gradebook. Students at the graduate level will have additional requirements to be met when completing the research project.

## LATE ASSIGNMENTS AND MAKEUP WORK

The grade for an assignment submitted up to one day following the original deadline will have a 50% penalty applied to it. Assignments submitted more than one day after the original deadline will not be accepted or graded. Legitimate excuses must be supported with appropriate documentation. Makeup work, when authorized by the instructor, will be discussed on a case-by-case basis.

## ATTENDANCE

Attending every lecture is highly recommended and encouraged. A low attendance record may be detrimental to your success in the course. Absences to exams and other graded in-class activities can be excused if reasonably justified and supported by appropriate documentation. It is at the discretion of the instructor to accept excuses, which will be analyzed on a case-by-case basis in accordance to The U's policies on instruction and evaluation, available at: <https://regulations.utah.edu/academics/6-100.php>.

## ACCOMMODATIONS FOR DISABILITIES

The University of Utah seeks to provide equal access to its programs, services, and activities for people with disabilities. If you will need accommodations in this course, reasonable prior notice needs to be given to the Center for Disability Services (CDS), 162 Union Building, (801) 581-5020. CDS will work with you and the instructor to plan for accommodations. All written information in this course can be made available in an alternative format with prior notification to the Center for Disability Services.

In addition to the standard process above, please inform the instructor if you have any other issues that may prevent you from fully demonstrating your abilities so that accommodations can be made to ensure your full participation in the course and safeguard your educational opportunities in this course and at The U.

## NON-DISCRIMINATION POLICY

The University of Utah guarantees equality of opportunity in education and strives to provide an academic environment that is free from any form of discrimination. Therefore, discrimination or harassment of any person based on race, color, religion, creed, gender, national origin, age, disability, veteran status, sexual orientation, or gender identity is a violation of state and federal laws and/or The U's policies and will not be tolerated. Retaliation against any person who complains about discrimination is also prohibited. Be advised that all students, faculty, and staff are required to report instances of sexual harassment, sexual assault, or discrimination to the appropriate offices within the university. Information regarding non-discrimination policies and reporting guidelines can be found at <https://oeo.utah.edu>.

**Addressing Sexual Misconduct:** Title IX makes it clear that violence and harassment based on sex and gender (which includes sexual orientation and gender identity/expression) is a civil rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, color, religion, age, status as a person with a disability, veteran's status or genetic information. If you or someone you know has been harassed or assaulted, you are encouraged to report it to the Title IX Coordinator in the Office of Equal Opportunity and Affirmative Action, 135 Park Building, 801-581-8365, or the Office of the Dean of Students, 270 Union Building, (801) 581-7066. For support and confidential consultation, contact the Center for Student Wellness, 426 SSB, (801) 581-7776. To report to the police, contact the Department of Public Safety, (801) 585-2677(COPS).

**Pregnancy/Childbirth:** Should you need modifications or adjustments to your course requirements because of pregnancy- or childbirth-related matters, please contact your instructor as soon as possible to discuss an accommodation plan. Congratulations and enjoy the many sleepless nights to come!

**Religious Observance:** Students may excuse absences that result from religious observances and may reschedule tests and required coursework that fall on religious holidays, without penalty.

**LGBTQ+ Individuals:** The course instructor advocates in favor of equality for all individuals, regardless of their perceived or actual sexual orientation, gender identity, or gender expression. Please inform your instructor if you have a specific pronoun or chosen/preferred name that you would like to be addressed by.

## ACADEMIC INTEGRITY AND STUDENT CONDUCT

Students are required to comply with all University-level policies on academic integrity as published in the Code of Student Rights and Responsibilities. All cases of academic misconduct will be reported to the Office of the Dean of Students. Please review your rights and responsibilities available at <https://regulations.utah.edu/academics/6-400.php>.

Additionally, academic misconduct policies specific to the Department of Mechanical Engineering will also apply. These policies are available at <https://www.mech.utah.edu/academics/me-academic-misconduct-policy>. By continuing your enrollment in this course, you acknowledge to be familiar with these policies and commit to abide by them.

**Integrity Pledge:** Your signature on any test or assignment indicates *"On my honor, I affirm that I have neither given nor received inappropriate aid in the completion of this exercise."*

## UNIVERSITY SAFETY

The University of Utah values the safety of all campus community members. To report suspicious activity or to request a courtesy escort, call campus police at 801-585-COPS (801-585-2677). You will receive important emergency alerts and safety messages regarding campus safety via text message. For more information regarding safety and to view available training resources, including helpful videos, visit <https://safeu.utah.edu>.

Please review The U's Emergency Response Guide available at <https://alert.utah.edu/emergency-response-guide> and be familiar with the official procedures in the events of earthquakes, utility failures, fires, medical assistance in case of injury or illness, environmental quality concerns, active shooters and acts of violence, bomb threats, severe weather, bio/chem/RAD spills, secure in place and shelter in place orders, and evacuation orders.

## COURSE DELIVERY

ME EN 6180-001 will be delivered in person. Section 030 will be delivered via asynchronous, on-demand recordings. The instructor will deliver in-person lectures every Tuesday and Thursday from 2:00 PM to 3:20 PM, and every lecture will be recorded and posted online in less than 24 hours following delivery.

**Copyright Statement:** The recordings are the intellectual property of the instructor and may not be shared or reproduced without their explicit and written consent. In addition, privacy rights of others such as students, guest lecturers, and providers of copyrighted material displayed in the recording may be of concern. Students may not share any course recordings with individuals not enrolled in the class or upload them to any other online environment.

## COURSE SCHEDULE AND IMPORTANT DEADLINES

See below, pages 5 and 6.

**LECTURE CALENDAR** | Tuesdays and Thursdays from 2:00 PM to 3:20 PM in WEB L114 and Online

Week	Lecture	Date	Topic
1	1	Jan 09	Course Introduction ( <i>online recording only; NSF Event</i> )
	2	Jan 11	Overview of Modern Project Management
2	3	Jan 16	Organizational Considerations
	-	Jan 18	Practicum and Case Study Discussion #1
3	4	Jan 23	Project Definition
	5	Jan 25	Work Breakdown Structure ( <i>online recording only</i> )
4	-	Jan 30	Practicum and Case Study Discussion #2
	-	Feb 01	Q&A and Quiz #1 (Lectures 2-5)
5	6	Feb 06	Estimating Time and Costs
	7	Feb 08	Developing a Project Schedule
6	-	Feb 12	Practicum and Case Study Discussion #3
	8	Feb 15	Project Risk Management
7	9	Feb 20	Scheduling Resources and Costs ( <i>reading only</i> )
	-	Feb 22	Practicum and Case Study Discussion #4
8	-	Feb 27	Q&A and Quiz #2 (Lectures 6-9)
	-	Feb 29	<b>Midterm Exam (2:00 PM to 3:20 PM)</b>
9	-	Mar 05	Spring Break ( <i>no class</i> )
	-	Mar 07	Spring Break ( <i>no class</i> )
10	10	Mar 12	Performance Measurement and Evaluation
	-	Mar 14	Practicum and Case Study Discussion #5
11	11	Mar 19	Project Management Software Overview
	12	Mar 21	Being an Effective Project Manager
12	13	Mar 26	Ethics and Professional Responsibility
	-	Mar 28	Practicum and Case Study Discussion #6
13	-	Apr 02	Q&A and Quiz #3 (Lectures 10-13)
	14	Apr 04	Project Closeout
14	15	Apr 09	Agile Project Management
	-	Apr 11	Practicum and Case Study Discussion #7
15	A	Apr 16	Guest Lecture ( <i>planned</i> )
	B	Apr 18	Guest Lecture ( <i>planned</i> )
16	-	Apr 23	Q&A and Quiz #4 (Lectures 14-15, A-B)
	-	Apr 25	<b>Final Exam (1:00 PM to 3:00 PM)</b>

## HOMEWORK DUE DATES

HW	Due	Topics
1	Feb 07	Lectures 2-5
2	Mar 01	Lectures 6-9
3	Apr 05	Lectures 10-13
4	Apr 23	Lectures 14-15, A-B

### SCHEDULE AND DUE DATES ARE SUBJECT TO CHANGE

Canvas will always have the  
most up-to-date version  
of this schedule.

All changes will be communicated!

All submissions are due at 11:55 PM

## QUIZ DATES

Quiz	Date	Topics
1	Feb 01	Lectures 2-5
2	Feb 27	Lectures 6-9
3	Apr 02	Lectures 10-13
4	Apr 23	Lectures 14-15, A-B

Quizzes will be administered following an open Q&A session

## PROJECT DUE DATES

Date	Event
Mar 12	Assignment and Formation of Groups
Apr 23	Final Report and Supporting Files
Apr 24	Peer Evaluations

Do not hesitate to send any questions you may have to [pedro.huebner@utah.edu](mailto:pedro.huebner@utah.edu). I am here to help you succeed! 😊  
I also appreciate feedback. Let me know if things are going well for you. We will work together to resolve any issues.