Mechanical Engineering Design 3

EML4502 Section 28024
Class Periods: TBD
Location: Online
Academic Term: Spring 2026

Instructor:
Jack Famiglietti, Ph.D.
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Office location: MAE-C 104
Office Hours: Email to schedule

Course Description
Design and realization of a mechanical engineering system, component, or process subject to appropriate standards and constrains. Team Project. Credits: 3.

Course Pre-Requisites / Co-Requisites
Prerequisite: EML 4501 or EAS 4700 or EAS 4710

Course Objectives
1. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors [Final Design Documentation]
2. Communicate effectively with a range of audiences [Final Design Documentation & Final Oral Presentation]
3. Function effectively on a creative, collaborative, and inclusive team that establishes goals, plans tasks, and meet objectives [Weekly Progress Reports]
4. Acquire and apply new knowledge as needed using appropriate learning strategies [Weekly Progress Reports & Checkpoint Design Reviews]

Materials and Supply Fees
Course Material & Supply Fee: $295.00 (Verified 5/13/2025)
Course Equipment Pool Fee: $90.00 (Verified 5/13/2025)

Relation to Program Outcomes (ABET):

Outcome	Coverage*
1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics	Medium
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors	High
3. An ability to communicate effectively with a range of audiences	Medium
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts	Medium
5. An ability to function effectively on a team whose members together provide leadership, create a	

collaborative environment, establish goals, plan tasks, and meet objectives	
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions	Medium
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	Medium

*Coverage is given as high, medium, or low. An empty box indicates that this outcome is not covered or assessed in the course.

Required Textbooks and Software
N/A

Recommended Materials
1. Shigley's Mechanical Engineering Design, 11th Ed., K. J. Nisbett & R. G. Budynas, McGraw-Hill, 2020 ISBN: 9390219639
2. Materials Selection in Mechanical Design, 5th Ed., Michael F. Ashby, Butterworth-Heinemann, 2016 ISBN: 0081005997
3. Machinery's Handbook, Erik Oberg, 30th Edition (or later), ISBN-13: 978-0831130916 4. Roark's Formulas for Stress and Strain, 7th Edition, W. C. Young, R. G. Budynas, McGraw-Hill, 2002 ISBN 007072542X
4. Dimensioning for Interchangeable Manufacture, Earlwood T. Fortini, Industrial Press. 1967

Required Computer
Recommended Computer Specifications: https://it.ufl.edu/get-help/student-computer-recommendations/
HWCOE Computer Requirements: https://www.eng.ufl.edu/students/advising/fall-semester-checklist/computer-requirements/

Course Schedule
Week 1: Introduction / Project Timeline Review
Week 2-13: Group Project Work / Progress Reports
Week 14: Final Design Presentations

Important Dates (Subject to change)
Weekly *Progress Report Submissions*
Feb. 2 *Design Review 1*
Mar. 9 *Design Review 2*
Apr. 6 *Design Review 3*
Apr. 20 *Final Design Presentation*

Evaluation of Grades

Assignment	Total Points	Percentage of Final Grade
Weekly Progress Checks	25	25
Final Design Documentation	25	25
Final Design Presentation	25	25
Design Artifact Evaluation	25	25
		100%

Grading Policy
The following is given as an example only.

Percent	Grade	Grade Points
90.00 - 100	A	4.00
80.00- 89.99	B	3.00
70.00 - 79.99	C	2.00
60.00 - 69.99	D	1.00
0 - 59.99	E	0.00

Academic Policies & Resources
To support consistent and accessible communication of university-wide student resources, instructors must include this link to academic policies and campus resources: https://go.ufl.edu/syllabuspolicies. Instructor-specific guidelines for courses must accommodate these policies.

Commitment to a Positive Learning Environment
The Herbert Wertheim College of Engineering values varied perspectives and lived experiences within our community and is committed to supporting the University's core values.

If you feel like your performance in class is being impacted, please contact your instructor or any of the following:
- Your academic advisor or Undergraduate Coordinator
- HWCOE Human Resources, 352-392-0904, student-support-hr@eng.ufl.edu
- Pam Dickrell, Associate Dean of Student Affairs, 352-392-2177, pld@ufl.edu