Engineering Mechanics: Statics

EGM 2511 Section 24955
Class Periods: M,W,F | 5th Period (11:45 am to 12:35 pm)
Location: MAEA 0303
Academic Term: Spring 2026

Instructor:
Philip B. Jackson, Ph.D.
philipbjackson@ufl.edu
Office: (352) 392 – 4521
Office Hours: See Canvas for up-to-date office hour schedule. Office hours are normally held online through Zoom at the following link: https://ufl.zoom.us/j/2320274813. In-person office hour sessions are available upon request.

Learning Assistants/Peer Mentors
We will have two Learning Assistants this semester. Please contact through the Canvas website: see Canvas for up-to-date office hours schedule and contact information.

Course Description
Credits: 3
Reduction of force systems, equilibrium of particles and rigid bodies, vector methods and their application to structures and mechanisms.

Course Pre-Requisites / Co-Requisites
Pre-Requisites: PHY 2048
Co-Requisites: MAC 2313

Course Objectives
This course provides undergraduate coverage of the static equilibrium of mechanical systems. The course emphasizes the fundamental principles of equilibrium analysis applied to both particle and rigid-body systems, the application of Newton's laws in cartesian coordinates, the reduction of internal and distributed forces, and the analysis of area properties such as centroids and moments of inertia. Students will learn to apply these concepts through exposure to numerous practical engineering problems. Upon completion of the course, students are expected to have developed a thorough understanding of the fundamentals of engineering statics and problem-solving techniques applicable to structural systems.

Materials and Supply Fees
None

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	High
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	Low
3. An ability to communicate effectively with a range of audiences	Low
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	
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	
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

Lecture materials and course notes (developed by the instructor), all available on Canvas, comprise the required course materials.

Recommended Materials

- Engineering Mechanics: Statics
- R. C. Hibbeler
- 2023, 15th Edition
- **ISBN13:** 9780137514663

While the textbook above is the official text for the course, its newest version is often expensive. Students are advised to purchase/acquire any economical edition or used copy of the text. Contact Peer Mentors for the most economical options for acquiring the text.

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/
There will be no required software for this course.

Course Schedule

Week 1: Introduction, Basic Problem-Solving Strategies, Vector Operations
Week 2: Vector Multiplication, Sliding Vectors, Free-Body Diagrams
Week 3: Equilibrium of Particles
Week 4: Force systems and Moments
Week 5: Reduction of Loads, Distributed Loads
Week 6: Equilibrium of Rigid Bodies
Week 7: Equations of Equilibrium
Week 8: The Method of Joints
Week 9: The Method of Sections
Week 10: Internal Forces, Shear, and Moments
Week 11: Friction
Week 12: Centroids
Week 13: Hydrostatic Pressure
Week 14: Moments of Inertia
Week 15: The Method of Virtual Work

See Canvas for a more detailed weekly and daily breakdown of course modules.

Important Dates

02/17/2026 Exam 1 (8:20 pm – 10:20 pm, Location TBA)
03/27/2026 Exam 2 (8:20 pm – 10:20 pm, Location TBA)
04/25/2026 Final Exam (10:00 am – 12:00 noon, Location TBA)

Attendance Policy, Class Expectations, and Make-Up Policy

All homework and quizzes will be administered and submitted electronically through Canvas. Exam 1, Exam 2, and the final exam will all be administered face-to-face, proctored by the instructor. Make-up exams for excused absences are scheduled on a case-by-case basis. See Canvas for the up-to-date exam schedule and locations and contact the instructor if you have a conflict.

Students are required to check Canvas on a regular basis for updates and read all posted content but your consumption of course materials will not be monitored by the instructor. We will use Zoom as our primary means of communication for office hours and homework help. Face-to-face meetings are also available on request. Students are encouraged to contact the instructor through email or text at any time (I can always make myself available for a chat if you need help or have any concerns!).

Generally, late assignments are not accepted, however a 15-minute grace period after an assignment is due is allowed before it is counted as late. Should you encounter unfortunate extenuating circumstances, it does not hurt to ask for an extension.

Evaluation of Grades

Assignment	Total Points	Percentage of Final Grade
Homework Sets (8)	100 each	20%
Quizzes (4)	100 each	20%
Exam 1	100	20%
Exam 2	100	20%
Final Exam	100	20%
		100%

Extra credit assignments are also offered periodically throughout the semester. All extra credit points are applied only at the end of the semester during the calculation of final course grades. See Canvas for more details about individual assignment scoring, overall grade calculations, and extra credit.

Grading Policy

Percent	Grade	Grade Points
93.4 - 100	A	4.00
90.0 - 93.3	A-	3.67
86.7 - 89.9	B+	3.33
83.4 - 86.6	B	3.00
80.0 - 83.3	B-	2.67
76.7 - 79.9	C+	2.33
73.4 - 76.6	C	2.00
70.0 - 73.3	C-	1.67
66.7 - 69.9	D+	1.33
63.4 - 66.6	D	1.00
60.0 - 63.3	D-	0.67
0 - 59.9	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