

EGM2511-1582(24136) - Engr Mech-Statics

EGM2511 - Engineering Mechanics: Statics

Class Periods: Tuesday 5-6th (11:45-1:40), Thursday 6th (12:50-1:40)

Location: Weil 270

Academic Term: Spring 2020

Instructor:

Dr. Daniel Dickrell III

djd3@ufl.edu

352-392-1196

Office Location: 130 MAE-C

Office Hours: Tuesday and Wednesday 2-3:30 PM

Teaching Assistant/Peer Mentor/Supervised Teaching Student:

Please contact through the Canvas website.

All TA office hours will be held in Marston Science Library near the 3D printers.

- Hannah Griffin - W 10-11; R 10-12
- Emily Palmer - M 10-12; W 11-12
- Sam Matez - M 2-3:30; R 9:30-11:00
- Jon Sieber - W 10-12

Course Description

Reduction of force systems. Equilibrium of particles and rigid bodies. Vector methods. Application to structures and mechanisms. Credits: 3

Course Pre-Requisites / Co-Requisites

Prerequisite: [PHY 2048 \(Links to an external site.\)](#)

Corequisite: [MAC 2313 \(Links to an external site.\)](#)

Course Objectives

This is a core course in the engineering curriculum. It stresses fundamental engineering science and mathematical principles required for a proper understanding of mechanics. Students will learn to use vector methods and free body diagram development as tools to logically approach and solve engineering mechanics problems in both the SI and U.S. customary systems. In this course the student will develop engineering problem solving methods through fundamental introductory topics in mechanics including: particle and rigid body equilibrium in 2D and 3D force systems, appropriate support reactions, moments of forces, equivalent systems, distributed forces, center of gravity, composite body and integration analysis methods, trusses, frames, machines, internal forces (including shear and bending moment diagrams), friction concepts, moment of inertia, parallel axis theorem, mass moment of inertia, and potential energy methods. Upon completion of this course students are expected to understand how to analyze practical engineering structures under force and moment systems and have a strong foundation of the engineering mechanics principles and methods needed for both use as qualified engineers and for secondary courses in mechanics.

Materials and Supply Fees

n/a

Professional Component (ABET):

EGM 2511 supports program outcomes enumerated in the Mission Statement of the Department of Mechanical and Aerospace Engineering. The specific ME program outcome supported by this course includes: (1) Posses ability to work professionally in both thermal and mechanical systems areas including the design and realization of such systems. Mathematics (10%), Physical Sciences (20%), Engineering Sciences (60%), Engineering Design (10%)

This course achieves the following engineering accreditation outcomes:

- Apply knowledge of mathematics, science, and engineering
- Design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
- Identify, formulate, and solve engineering problems
- Understand professional and ethical responsibilities
- Understand the impact of engineering solutions in a global, economic, environmental, and societal context

Required Textbooks and Software

Title: VECTOR MECHANICS FOR ENGINEERS: STATICS, 11TH EDITION

ISBN: 0077687302

Author: Beer and Johnston.

Course Schedule

See E-Learning Calendar (link and the bottom of this document) for live updates regarding due dates and exam information

Attendance Policy, Class Expectations, and Make-Up Policy

Regular attendance is highly suggested. Cell phones should be silenced during class. Computer usage during lecture is discouraged except for exigent circumstances.

Calculator Policy

The only calculators permitted in Exams are the ones that are accepted by the National Council of Examiners for Engineering and Surveying (NCEES).

The list of calculators can be found at: <http://ncees.org/exams/calculator-policy> ([Links to an external site.](#))

*Non-approved calculator usage on exams will be automatically deducted **20%** from the exam grade.*

Evaluation of Grades

Homework - 15%

First Exam - 25%

Second Exam - 30%

Third Exam - 30%

Grading Policy

A score of **92** will be sufficient for a grade of **A**

A score of **82** will be sufficient for a grade of **B**

A score of **72** will be sufficient for a grade of **C**

notes:

(1) At the end of the semester at least one homework set will be dropped to take into consideration life events outside of class (sickness, weddings, road-trips, etc.)

(2) If the overall class grade distribution is significantly outside an acceptable range, the grading scale will be adjusted to fix the achievement disparity

(3) Plus and minus grades will be added as final grades are calculated. The grading scale shown above are promises: if you get a 92 you WILL get an A, if you get a 82 you will get a B (at minimum) etc.

More information on UF grading policy may be found at: <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx> (Links to an external site.)

NO LATE SUBMISSION

There is no excuse for missed assignments, this is your responsibility to act like a professional student. Don't ask or beg for special treatment. It is embarrassing for you as well as I.

GRADE DISPUTES:

If a student feels that an exam or homework was graded unfairly, or if there is an error in the grading, it should be brought to the attention of the instructor (Dr. Dickrell) within two weeks after the grades are posted for that assignment. **Scores will not be reconsidered beyond the two week period.** TA's don't have authority to change grades, so don't ask them.

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 professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/> (Links to an external site.). Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/> (Links to an external site.). Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/> (Links to an external site.).

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://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/> (Links to an external site.)) 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 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> (Links to an external site.)

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 is 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> (Links to an external site.), 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** (Links to an external site.), 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 at 392-1111 (or 9-1-1 for emergencies), or <http://www.police.ufl.edu/> (Links to an external site.).

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> (Links to an external site.).

Career Resource Center, Reitz Union, 392-1601. Career assistance and counseling. <https://www.crc.ufl.edu/> (Links to an external site.).

Library Support, <http://cms.uflib.ufl.edu/ask> (Links to an external site.). 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/> (Links to an external site.).

Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers. <https://writing.ufl.edu/writing-studio/> (Links to an external site.).

Student Complaints

Campus: https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf (Links to an external site.).

On-Line Students Complaints: <http://www.distance.ufl.edu/student-complaint-process> (Links to an external site.).