

Course Syllabus

EGM2511 Syllabus

Section 1580

Class Periods: Monday, Wednesday and Friday 8th period

Location: Turlington L005

Academic Term: Spring 2020

Instructor:

Dr. David A. Jenkins, P.E.

Office hours: 9:30 to 10:30 am MWF

- Office location: NEB 134
- Phone: (352) 392 6105
- E-mail address: davej@ufl.edu (<mailto:davej@ufl.edu>)
- Website: <http://lss.at.ufl.edu> (<http://lss.at.ufl.edu/>) (Canvas)

(Modifications to this syllabus may be required during the semester. Any changes to the syllabus will be posted on the course web site and announced in class.)

- **Catalog Description:** Reduction of force systems. Equilibrium of particles and rigid bodies. Vector methods. Application to structures and mechanisms. Credits: 3
- **Pre-requisites:** Pre-requisite: *PHY 2048* Co-requisite: *MAC 2313*
- **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.
- **Material and Supply Fees:** A distance learning fee pays for the cameras, operator, server space, and bandwidth required to provide on-demand access to the course lectures.
- **Contribution of course to meeting the professional component:** 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%)
- **Relationship of course to educational outcomes:**

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

Textbooks Required :

Title: **Vector Mechanics for Engineers**

Author: Beer, Johnston and Mazurek 11th edition

Note: Don't get the "international version" with SI units only - the homework problems do not match.

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/> (<http://ncees.org/exams/calculator-policy/>)

Un-approved calculator usage on exams will result in the loss of 20 points from the exam grade. This will be enforced strongly.

Course Schedule:

A **SCHEDULE** giving reading assignments and associated homework assignments for each lecture is available in FILES.

Assessment Methods and Grading:

Homework is assigned and *collected* on the course website. Expect at least one (at minimum) homework problem submission to be associated with each lecture period. The homework will be due on the date listed on Canvas.

There will be two in-term exams and one final exam during exam week. All exams will be cumulative up to that point in the semester but will emphasize the most recently covered material. Exam times and locations will be announced in class and posted on the course website. Announced quizzes will be given during the term.

The relative weighting of the Homework, Quizzes and Exams will be:

- a) **Homework - 16%**
- b) **Quizzes - 8%**
- c) **Exams - 76%**

Grading Scale:

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**

(other grades subdivisions (+/-) will be determined relative to overall class performance immediately prior to final grade submission)

READ AND UNDERSTAND:

HW Policies: For each lecture, there will be one graded HW problem which must be submitted online plus two textbook problems which must be completed but not submitted. One or more of these problems will be used as the basis for an exam or a quiz problem, so there is an obvious advantage in working these problems diligently. As the deadlines are clearly posted on the course website, late homework assignments will not be accepted. Because of the large volume of HW collected and graded, HW assignments re-grades can not be considered. Students may make comments on their graded work, however, and the three lowest grades will be dropped.

Exam Policies: Makeup exams are not done for reasons other than UF-approved reasons (sports, clubs, conferences, etc). If you need to miss an exam for a UF-sanctioned activity, please meet with your instructor during office hours. If errors are made in exam grading, students may staple a sheet on the front of the exam paper explaining their concerns and submit it to Dr. Jenkins for reconsideration within one week after receiving the graded exam.

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> (<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/> (<https://evaluations.ufl.edu/results/>).

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 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.

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: <http://registrar.ufl.edu/catalog0910/policies/regulationferpa.html>
(<http://registrar.ufl.edu/catalog0910/policies/regulationferpa.html>)

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 \(mailto:umatter@ufl.edu\)](mailto: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> (<http://www.counseling.ufl.edu/cwc>), and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

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/> (<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>
(<https://lss.at.ufl.edu/help.shtml>).

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

Library Support, <http://cms.uflib.ufl.edu/ask> (<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/>
(<https://teachingcenter.ufl.edu/>).
















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












Student Complaints Campus: https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf
(https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf).

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

Course Summary:

Date	Details
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Date	Details	
Fri Jan 10, 2020	 HW1 (https://ufl.instructure.com/courses/387182/assignments/4101106)	due by 1pm
Mon Jan 13, 2020	 HW2 (https://ufl.instructure.com/courses/387182/assignments/4101108)	due by 1pm
Wed Jan 15, 2020	 HW3 (https://ufl.instructure.com/courses/387182/assignments/4101117)	due by 1pm
Fri Jan 17, 2020	 HW4 (https://ufl.instructure.com/courses/387182/assignments/4129130)	due by 1pm
Wed Jan 22, 2020	 HW5 (https://ufl.instructure.com/courses/387182/assignments/4129131)	due by 1pm
Fri Jan 24, 2020	 QUIZ1 (https://ufl.instructure.com/courses/387182/assignments/4137004)	due by 11:10am
	 HW6 (https://ufl.instructure.com/courses/387182/assignments/4129132)	due by 1pm
Mon Jan 27, 2020	 HW7 (https://ufl.instructure.com/courses/387182/assignments/4129133)	due by 1pm
Wed Jan 29, 2020	 HW8 (https://ufl.instructure.com/courses/387182/assignments/4134954)	due by 1pm
Fri Jan 31, 2020	 HW9 (https://ufl.instructure.com/courses/387182/assignments/4134957)	due by 1pm
Mon Feb 3, 2020	 HW10 (https://ufl.instructure.com/courses/387182/assignments/4134962)	due by 1pm
Fri Feb 7, 2020	 Exam 1 x 1.5 (https://ufl.instructure.com/courses/387182/assignments/4144364)	due by 4pm
Mon Feb 10, 2020	 HW11 (https://ufl.instructure.com/courses/387182/assignments/4144626)	due by 1pm
Wed Feb 12, 2020	 HW12 (https://ufl.instructure.com/courses/387182/assignments/4145248)	due by 1pm
Fri Feb 14, 2020	 HW13 (https://ufl.instructure.com/courses/387182/assignments/4146374)	due by 1pm

Date	Details	
Mon Feb 17, 2020	 HW14 (https://ufl.instructure.com/courses/387182/assignments/4146400)	due by 1pm
Wed Feb 19, 2020	 HW15 (https://ufl.instructure.com/courses/387182/assignments/4147592)	due by 1pm
Fri Feb 21, 2020	 HW16 (https://ufl.instructure.com/courses/387182/assignments/4148076)	due by 1pm
Mon Feb 24, 2020	 HW17 (https://ufl.instructure.com/courses/387182/assignments/4148077)	due by 1pm
Wed Feb 26, 2020	 HW18 (https://ufl.instructure.com/courses/387182/assignments/4148078)	due by 1pm
	 QUIZ2 (https://ufl.instructure.com/courses/387182/assignments/4152992)	due by 5:22pm
Fri Feb 28, 2020	 HW19 (https://ufl.instructure.com/courses/387182/assignments/4148080)	due by 1pm
Mon Mar 9, 2020	 HW20 (https://ufl.instructure.com/courses/387182/assignments/4148081)	due by 1pm
Wed Mar 11, 2020	 HW21 (https://ufl.instructure.com/courses/387182/assignments/4155778)	due by 1pm
Fri Mar 13, 2020	 HW22 (https://ufl.instructure.com/courses/387182/assignments/4155780)	due by 1pm
Mon Mar 16, 2020	 HW23 (https://ufl.instructure.com/courses/387182/assignments/4155781)	due by 1pm