

CIVE 260 – Engineering Mechanics-Statics

General Information

Course Reference Number: 14834 (Lecture) – Section 002
Semester: Spring 2009
Credit: (3-3-0)
Prerequisite: MATH 160; PH 141 or concurrent registration

Semester Specific Information

Location: 109 Pathology Building (Lecture)
Time: M, W, F (10:00 – 10:50 am)
Instructor: Dr. Antonio Carraro
Office: A219 ENGR Building
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Phone: 491-4660
Office Hours: M, W, F (11:00 – 11:50 am)

Description: forces using vector notation; static equilibrium of rigid bodies; friction, virtual work, centroids, and moments of inertia.

Course Objective: the main objective of the course is to introduce students to methods of analysis of structural/mechanical systems encountered in engineering practice. After completion of the course, students should have a fundamental conceptual understanding and appreciation of (1) engineering mechanics, (2) mathematical modeling of engineering systems, (3) the relationship between mathematics and engineering analysis, (4) the relationship between physics and engineering analysis, and (5) units, dimensions, and approximations used in engineering analysis.

Textbook: “Vector Mechanics for Engineers: Statics” (2007) by Ferdinand P. Beer, E. Russell Johnston, Jr., Elliot R. Eisenberg, and David Mazurek (McGraw Hill), 8th edition.

Class Attendance: students should attend all classes to obtain maximum educational benefits. Absence or lateness does not excuse students from required course work. Students must inform the instructor prior to the anticipated absence and take the initiative to make up missed work in a timely fashion.

Reading Assignment: students are expected to read all assigned textbook chapters prior to the lecture in which the topic shall be covered (course outline and lecture topics will be provided in class).

Grading: there are two components to the course grade: (A) homework and quizzes, and (B) exams. The grade distribution will be as follows:

Highest Exam Score	30 %
Intermediate Exam Score	25 %
Lowest Exam Score	20 %
<u>Quiz Grade</u>	<u>25 %</u>
Total	100 %

The +/- system for grading will be used.

- (A) **Homework and Quizzes:** homework will be assigned but not collected nor graded. Instead, a one problem quiz lasting from ~ 20 to 25 minutes will be given on the homework assignment one week after the homework is assigned (either as a separate quiz or as part of an exam). The quiz problems will be taken directly from the assigned homework usually with a slight variation in the problem statement. Thus, the purpose of the quizzes is to provide motivation for working the homework problems, which, in turn, are assigned to emphasize lecture concepts. Since the quiz will be given one week after the homework assignment, there is plenty of time to work all the homework problems or to ask questions during office hours before the quiz if you do not understand the homework. Although a student may rely on other students to work the homework problems, the quiz must be worked independently. Thus, it is in your best interest to attempt the homework problems first before comparing solutions with others. Each quiz is graded on a straight scale (as described above) without exception. The final quiz grade is also an important consideration in determining final course grades in borderline cases. **All quizzes are closed book and closed notes.**
- (B) **Exams:** exams 1 and 2 will be given no sooner than one week from the day on which the last topic for the exam has been covered in class, thus offering you time to study and formulate questions over the material. The two lectures immediately preceding the exam date will present new material(s) that will be covered on the subsequent exam. The third exam is the final exam and will be given during the scheduled final exam period (13-May, 3:40 – 5:40 pm) and **will not** be comprehensive. Therefore, you will have the full 2 hours to work the third exam, but only 1 hour for each of the first 2 exams. **All exams are closed book and closed notes.**

Exam and Quiz Protocol: **no make up exams/quizzes will be allowed** and you must take the exam/quiz on the scheduled date; no excuses will be accepted except for an incapacitating illness or a death in the immediate family. For these last two excuses, a signed medical note from a doctor (including address and phone number) will be required. Failure to take an exam/quiz on the assigned date without prior approval of the instructor will result in a score of zero without debate.

Calculators: the following departmental policy applies to the use of calculators during CIVE 260 exams and quizzes:

- As of the Spring 2008 semester, the Department of Civil and Environmental Engineering at Colorado State University has recommended that: “Only models of calculators approved by NCEES are permitted during exams. No other models of calculators are permitted. The following are the only calculators that will be permitted in the classroom for the quiz and exam administrations:

- 1) Casio: all *fx-115* models. Any Casio calculator must contain *fx-115* in its model name.
- 2) Hewlett Packard: the *HP 33s* and *HP 35s* models, but no others.
- 3) Texas Instruments: all *TI-30X* and *TI-36X* models. Any Texas Instruments calculator must contain either *TI-30X* or *TI-36X* in its model name.

Each year, NCEES will review and revise the approved calculator list and then announce the updated list by November 15.” The above policy will be implemented and enforced in CIVE 260.

Grievances: you may contest quiz and exam grades in writing only. For exams, you should submit a written complaint on the date the exam is returned to you, indicating the item and question in which you believe a grading error was made. Please note that all grades reflect not only the correctness of the solutions but also organization and clarity of presentation.

Academic Integrity: please be advised that there are penalties and other serious consequences, as described in the Colorado State University Regulations whenever a student is involved in academic dishonesty. For further details on this issue please review the University rules on:

< <http://www.conflictresolution.colostate.edu/> >

Problem-Solving Guidelines:

For all problems assigned throughout the semester in Statics, you should use the following approach:

1. Problem (homework, quiz, or exam) should be neatly done on engineering paper and properly identified.
2. Each problem should be well defined, with the proposed solution method clearly shown. Lack of organization will invariably result in a lower grade.
3. Every free-body diagram (FBD) must be neatly drawn; appropriate dimensions and labels must be provided for each FBD.
4. Answers should have appropriate units and should be boxed at the end of the solution. All answers submitted as part of a problem solution should be critically evaluated (e.g. magnitude, sign, units, etc.) and revised, if appropriate.
5. All pages must be stapled together in the upper left hand corner.
6. Solutions should be properly filed for easy reference in the future.