CIVE 260 – Engineering Mechanics – Statics
Section 1  Spring 2012
MWF 10:00-10:50am  Natural Resources 113

Instructor:
Dr. Rebecca Atadero
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Course Website: RamCT
Office Hours: MWF 2-3 pm

I will do my best to always be available at these times. Also, I am generally on the main campus all day MWF and if my door is open feel free to stop by. If you have trouble reaching me please schedule an appointment.

Nathan Miller will also have office hours from 11-12 on MW in Engineering E116.

Course Objectives: To idealize, model and analyze 2D and 3D determinate structures and mechanical systems in static equilibrium. To prepare students for future courses in engineering mechanics and design by teaching problem solving skills, critical thinking, and the engineering design process.

Topics:
- Equilibrium of particles and rigid bodies in 2D and 3D
- Vector math/operations
- Drawing accurate free body diagrams
- Application of equilibrium to structures/systems including: cable and pulley systems, trusses, beams, frames/machines
- Calculation of cross-sectional properties including centroids and area moments of inertia
- Friction
- Virtual Work

The course will be divided into three units: 1) Equilibrium, 2) Applications (primarily trusses and beams), and 3) Friction and Virtual Work.

Required Text:

Prerequisites: MATH 160, PH 141

Assignments and Grading:
Group Design Projects (30%)
A group design project will be assigned in class at the beginning of each unit. The first two projects will be longer in duration and will be worth 12% each. The last project will be somewhat shorter and will be worth 6%. Each project will require the group to design and construct an engineering system to be demonstrated in class and to write a report describing the design process. The assignment sheet for each project will include specific design and reporting requirements and a detailed breakdown of how points will be assigned.
Homework Assignments (15%)
Short homeworks will be assigned most days. Although they will not be due until at least one week after they are assigned, I encourage you to at least attempt the assignments before the next class session. This will help you keep up to date on the material. These assignments should be completed individually. Although I encourage you to consult with other students and me when necessary, make sure you give every problem a reasonable amount of effort before seeking help. Remember that working through the problems is one of the best ways to learn the material and prepare for tests, and that homework is assigned to give you practice and help you learn – not because grading is fun.

Assignments will be due by 4:00pm on the assigned due date. They can be submitted to my office or my mailbox in the main CEE office. **Late assignments will not be accepted.**

Give special attention to the organization, neatness and completeness of your assignments. Engineers must be able to communicate their work to each other, and hand calculations are part of the design documentation process. It is important to practice this and form good habits while you are a student. (It will also be helpful when you review your assignments before an exam). Your assignments should be completed on one side of engineering paper. Your solution should begin with a brief restatement of the problem, including important given information and a statement of what you are trying to determine. Draw a sketch of the situation including forces and important dimensions using a straightedge. Your work should completely document the steps needed to reach a solution including equations, intermediate results and any additional figures or free body diagrams. Your final answer should be clearly indicated with a box or underlining. Watch for units and significant digits. Three to four significant digits are usually adequate.

Class Participation/Behavior (5%)
This class will be taught in a very interactive way with a lot of hands on activities during class sessions. Students should participate in these activities and stay on topic. One percentage point will be subtracted each time students significantly stray from topic during class. I also expect students to be respectful to me and their classmates. One percentage point will be subtracted for each occurrence of disrespectful behavior such as (but not limited to) students holding private conversations while I or other students are talking or disruptive entrances and exits from the classroom. Students who continue to display disruptive behavior after they have lost all 5% will be referred to the Office of Conflict Resolution and Student Conduct Services.

Completion of surveys related to the research being conducted about this course (or alternative assignments for students who choose not to participate in the research) will also count toward your participation grade. Up to 2% points can be lost for failure to complete the surveys or alternative assignments.

Exams (50%)
There will be three midterms (10% each) in this class and a final (20%). The midterms will be held at the end of each unit. All tests will be cumulative with an emphasis on more recent material. **Students must use a FE approved calculator on exams.** Tests will be closed book.

I am often asked about the best way to prepare for tests. I firmly believe that the best way to prepare is to learn the material as we go and just spend a few hours reviewing your old homeworks, and notes before the test.
The midterms will be held in the evening from 5:00-6:30pm in Glover 130. The midterms are scheduled for Wednesday February 22nd, Wednesday March 28th and Wednesday April 25th. The final exam will be given on Thursday, May 10th from 7:30-9:30am as scheduled by the university. Make-up exams will be given only in extraordinary, documented circumstances.

Final Grades
Term grades for this course will be assigned using +/- grading. Remember these grades are a reflection of your work throughout the semester. You need to start worrying about your final grade NOW. By the time we get to May it is too late to make big changes.

Academic Integrity:
This course will adhere to the Academic Integrity Policy of the Colorado State University General Catalog (online at http://catalog.colostate.edu/FrontPDF/1.6POLICIES1112f.pdf) and the Student Conduct Code (online at http://www.conflictresolution.colostate.edu/conduct-code.aspx).

As stated by the Catalog “Academic integrity is conceptualized as doing and taking credit for one’s own work.” In this class all assignments should be completed by individuals. Below I have described in general terms how academic integrity applies to each graded component. This description is not all inclusive, please contact me if you have questions about behaviors not specifically described here.

Exams will include the following honor pledge for you to sign:

I pledge on my honor that I have not received or given any unauthorized assistance in this exam.

Group Design Projects – Group projects should reflect the effort of the students in the group. If external sources are referenced when writing project reports, they should be cited; please see me or the website for the CSU Writing Center if you need help with this. Furthermore, in a group setting, I interpret academic integrity as pulling your own weight within a group.

Homework Assignments – Students are encouraged to consult with and learn from each other, but the final submitted assignment must reflect the individual effort and understanding of the student submitting the assignment. Direct copying is not acceptable and in this case all students with the same work will be given a zero.

Exams – The midterm and final exams should be completed individually without aid from other students. Exams must be taken with FE approved calculators.

Class Participation/Behavior – When I ask for group work during class sessions it is important that each student participates in the assignment, so as not to compromise the learning opportunity of other students.

Special Needs:
If you have any special needs please come visit me during office hours so that we can discuss how I can help you be successful in this course.