Engineering Statics

ENGR 210 - Fall 2020

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Time and location: M/W 12:00-1:15 MLH B10

Required Online Access: www.masteringengineering.com

Text: Engineering Mechanics; Statics, 14th ed., R.C. Hibbeler (11, 12, or 13 editions are also fine)

Prerequisites: Math 170 or calculus equivalent

Supplies: Scientific calculator, quadrille-ruled green engineering paper

After the course you will:

1. have experience applying Newton’s laws to real engineering situations;
2. be able to identify significant features and forces in a rigid body;

3. be comfortable with vocabulary engineers use to describe engineering structures;

4. have experience applying static analysis to a design project, and;

5. be able to reason how changes to a structure will affect its performance.

This course will cover units, scalars and vectors, vector operations, position and force vectors, equations of equilibrium for particles and rigid bodies, force systems, moments, structural analysis, internal forces, friction, centroids and center of gravity, and moments of inertia.

A textbook is required for this class. I recommend you find a recent edition (11, 12, 13,or 14) of the Hibbeler text as they all follow the same outline. A textbook is available in my office for checkout if you need, and used texts are available for purchase online. I encourage you to use additional learning resources. A free statics online tutorial is available at the Open Learning Initiative, (<http://oli.cmu.edu/courses/free-open/engineering-statics-course-details/>). Another great site is Adaptive Map found at <http://adaptivemap.ma.psu.edu/content.html>.

Grading: Grades will be based on three mid-term exams (15% each) and a final exam (20%), online and paper homework assignments (20%), quizzes (5%), and design projects (10%).

Homework is assigned through MasteringEngineering.com. **Online access can be purchased through the website using a credit/debit card and will be good for both the Statics class this semester AND the Dynamics class next semester. Together during the first class we will walk through the online access steps.**

If you are sick don’t come to class; however, you are still responsible for the material covered. Three online homework assignments will be dropped, and three quizzes will be dropped so if you miss one of them because you are sick, it’s okay, you won’t bomb the class. All your scores will be posted on Canvas – it is your responsibility to check there often to make sure I’ve received, graded, and correctly recorded everything you’ve turned in.

Here is how the grades work:

A >= 90%

B+ >= 86.7%

B >= 83.3%

B- >= 80%

C+ >= 76.7%

C >= 73.3%

C- >= 70%

D+ >= 66.7%

D >= 60%

F < 60%

*And a final note:* **I know many solutions can be found on the internet**; if you choose to simply copy homework solutions from the internet, I can assure you your test grade, quiz grade, and class grade will suffer. This class is foundational to dynamics, mechanics of materials and several other classes so it will be well worth it to spend the time now to understand the material.

What happens if we have to go remote suddenly?

We will still meet through Canvas or Zoom, you will still have assignments, and you will still need to complete quizzes. Be sure you have access to a computer and internet to continue this course if this happens.

The schedule this semester requires us to be remote after Thanksgiving. We will meet through Canvas or Zoom at our usual class time. I will provide instructions for the rest of the course before we leave for Thanksgiving break.