

Syllabus

APPL 160 – Statics

Mondays & Wednesdays, 8:30-9:45am, 247 Phillips

Instructor: Prof. Amy L. Oldenburg, Physics

Email: aold@email.unc.edu

Office Location: 331 Chapman – during office hours **or by appointment only**

Office Hours: Fridays 1-2pm (or by appointment)

Teaching Assistant: Connor Puett

Email: cpuett@live.unc.edu

Office Hours Location: 137 MacNider

TA's Office Hours: Tuesdays 4:30-5:30pm

Required Textbook:

R.C. Hibbeler, Engineering Mechanics: Statics, 13th edition. ISBN-13: 978-0-13-291554-0.

This is an excellent textbook and, aside from the instructor, is your number one resource for learning the material. I am aware that it seems expensive, but relative to the cost of your education, and to the cost of science and engineering books in general, this textbook is a good deal. I am also aware that there is an online version of the textbook; unfortunately, after previewing the online book I cannot recommend it for the course, as it will only be a source of frustration for you.

Required Calculator:

A calculator will be needed for in-class activities as well as exams. For exams, the calculator cannot be part of a cellular device or computer. I recommend a high quality scientific calculator with the ability to solve linear systems of equations, which you may find handy in this course, as well as in your future engineering career.

Expectations:

This course will teach you how to analyze complicated mechanical assemblies and to gain intuition about the key design metrics when attempting to design a structure for a load-bearing application. The tools you will gain in this course are relevant to a wide variety of applications, ranging from biomedical implants to skyscrapers. Furthermore, I think the method of thought (the way you flex your mental muscles) in this course is great preparation for any future endeavor in the applied sciences and engineering. Some students find the problems in this course to be like challenging puzzles.

In-class worksheets:

As part of every class we will be doing an in-class worksheet of problems, which are not graded but are purely to help you learn. Please use this opportunity to:

- Ask the professor or your group mates when you are stuck
- Finish the worksheet in class, or if you cannot finish, take the answers with you and finish it later
- Make sure you have the right answers! I will only give them out near the end of the time period
- Use your worksheets to study for exams

Homework:

Homework will be due every **Wednesday at the beginning of class**. If you cannot arrive to class on time, then the homework is due under my office door (331 Chapman) at any day or time more than 15 minutes before class starts. (If I return from class to find homework under my door, it will be considered late).

- Problems will be posted 1 week in advance on the course website
- Due within first 10 minutes of class
- Late homework is 50% credit up to 24 hours, then no credit

- Homework must be hand-written
- You are **strongly encouraged** to collaborate with your peers on the homework
- The use of solution manuals for the textbook **is an honor code violation**
- Some homework answers are in the back of the book; please use these answers if they are provided
- Homeworks will be graded on **showing your work in an unambiguous manner**, with less emphasis on the final answer

Exams:

There will be 3 quizzes and 1 final exam at times listed on the schedule. You will be allowed to use your calculator and any handwritten class notes. We will take a poll before each exam to decide if additional materials will be allowed, such as the textbook. (Being able to use the textbook may limit my ability to write a “good” exam – but we will decide that as a group). As with homeworks, grading of exams will be based on **showing your work in an unambiguous manner**, with less emphasis on the final answer.

Project:

There will be a reverse-engineering project as part of this course. More details will be provided by October.

Accessibility:

I am sensitive to students with disabilities or anything which may make certain aspects of the course inaccessible to you. Please do not hesitate to make me aware of any such issues.

Grading:

Your final grade will be based upon the following:

25% Homework

30% Quizzes (10% for each of 3)

25% or 20% Final Examination

20% or 25% Reverse Engineering Project (whichever is more favorable to you)

Up to an extra 2% for class participation

Schedule for APPL 160, Fall 2012

Day	Date	Chapters covered (approximate)	Homework
W	22-Aug	Ch. 2	
M	27-Aug	Ch. 2	HW1
W	29-Aug	Ch. 3	
M	3-Sep	No Class: Labor Day	HW2
W	5-Sep	Ch. 3	
M	10-Sep	Ch. 4	HW3
W	12-Sep	Ch. 4	
M	17-Sep	Ch. 4	HW4
W	19-Sep	Quiz 1	
M	24-Sep	Ch. 5	HW5
W	26-Sep	Ch. 5	
M	1-Oct	Ch. 5	HW6
W	3-Oct	Ch. 6	
M	8-Oct	Ch. 6	HW7
W	10-Oct	Ch. 6	
M	15-Oct	Quiz 2	<i>(none)</i>
W	17-Oct	No Class: out of town	
M	22-Oct	Ch. 7	HW8
W	24-Oct	Ch. 7	
M	29-Oct	Ch. 7	HW9
W	31-Oct	Ch. 8	
M	5-Nov	Ch. 8	HW10
W	7-Nov	Ch. 8	
M	12-Nov	Quiz 3	HW11
W	14-Nov	Ch. 9	
M	19-Nov	Ch. 9	<i>(none)</i>
W	21-Nov	No Class: Turkey Break	
M	26-Nov	Ch. 9	HW12
W	28-Nov	Ch. 11	
M	3-Dec	Ch.11	HW13
W	5-Dec	Ch.11	
Tu	11-Dec	Final Exam 4pm	