

Physics/Physics-Engineering 260: Engineering Statics
Spring 2013
TuTh 9:30-10:45 AM in SSL 150

Course description: This course applies the basic laws of mechanics, beginning with vector algebra and Newton's Laws, to static (stationary) systems. We start out with the basic equations of forces in three dimensions and particles, and then move onto rigid bodies and more complicated engineering structures. Towards the end in the course we deal with slightly more advanced topics including centroids, moments and products of inertia, and forces in beams. This course is a prerequisite for more advanced engineering courses such as Mechanics of Materials, Structures, and Dynamics.

Instructor: Dr. Robert Thornton

Office: Merion 129

Office Phone: 610-436-2614

E-mail: rthornton@wcupa.edu

Office hours: MW 1:00-2:30 PM; TuTh 1:00-2:00 PM; also by appointment

Textbook (required): Engineering Mechanics: Statics, **13th** Edition, by R.C. Hibbeler (photo below).

Course Web page: Syllabus and related material will be on D2L.

Grading:

Exam 1: 20%; Exam 2: 20%; Exam 3: 20% (60% total)

Short in-class "pop" quizzes: 10%

Homework: 5%

Final Exam: 25%

Total: 100%



Attendance: Attendance is an important part of the class. After you miss more than three classes with no excuse, the instructor reserves the right to have each additional unexcused absence result in your course average being lowered by 2%. Excused absences are limited to those due to participation in University-sanctioned events (see policy in the WCU undergraduate catalog) or those accompanied by written confirmation from a doctor, the Dean of Students, etc. If you are sick, you **MUST** obtain a doctor's note. Finally, whether your absence is excused or unexcused (or if you are late to class), you will be responsible for any material covered and any announcements that were made in class that day.

Homework: There will be approximately one, maybe two, homework assignments per week. The assignments will consist primarily of selected problems from the textbook. There may be a few computer exercises as well. Points will be deducted from assignments handed in late, and no credit will be given once solutions have been posted. You are encouraged to hand in the assignments on time as solutions will be posted shortly after the problems are due. Please do not dismiss the importance of homework assignments simply because they comprise only 5% of your total grade. (The reason for the homework being worth only 5% of your grade is due to student cheating on homework in previous semesters.)

In-class short (pop) quizzes: To insure that students are keeping up with the reading and homework, short, unannounced, in-class quizzes will be given periodically. **THESE QUIZZES ARE GIVEN TO HELP YOU LEARN THE MATERIAL ON TIME.** The quizzes will be very similar to assigned homework problems, yet another reason to keep up with (and not cheat on) the homeworks.

In-class exam policy: There will be four tests over the course of the semester. An unexcused absence on the day of a test will result of a grade of zero for that test. Excused absences are limited to those due to participation in University sanction events (see policy in the WCU undergraduate catalog) or those accompanied by written confirmation from a doctor, the Dean of Students, etc. If you are sick, you MUST obtain a doctor's note BEFORE the day of the test. I do not give make up tests. If you have an excused absence on the day of one of the tests, additional problems on the test material will be put on your final exam. You may only miss one exam due to an excused absence. You are encouraged to bring a calculator to the exams, but the calculator cannot be a part of a cell phone, iPod, etc. (i.e., it must be ONLY a calculator).

Final Exam Policy: The final exam is cumulative and mandatory. Missing the final exam will result in a zero for the exam unless EXTREME circumstances apply. Even in that case, extra questions will be added to the make-up final.

Reading: Students are expected to keep up with the assigned reading in the textbook. Again, pop-quizzes will be given to enforce this.

Disability: West Chester University is committed to making accommodations for persons with disabilities. Please make your needs known by contacting your instructor and the Office of Students with Disabilities. Sufficient notice is needed in order to make the accommodations possible. The University desires to comply with the ADA of 1990.

Intellectual Property Statement:

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COURSE SCHEDULE ON NEXT PAGE →

Physics 260, Spring 2013, Course Schedule

Schedule: (This schedule is tentative; I will try to follow it as closely as possible!)

Class	Day	Date	Reading	Topic	
1	Tu	Jan 29	Ch. 1	Units & Vectors (All of Ch1 & start of Ch2)	
2	R	Jan 31	Ch. 2	Forces & Vectors in 2D	
3	Tu	Feb 5	Ch. 2	Forces & Vectors in 2D	
4	R	Feb 7	Ch. 3	Equilibrium of a Particle	
5	Tu	Feb 12	Ch. 3	Equilibrium of a Particle	
6	R	Feb 14	Ch. 4	Force System Resultants	
7	Tu	Feb 19		Exam 1 (Ch 1-3)	
8	R	Feb 21	Ch. 4	Force System Resultants	
9	Tu	Feb 26	Ch. 4	Force System Resultants	
10	R	Feb 28	Ch. 5	Equilibrium of Rigid Bodies	
11	Tu	Mar 5	Ch. 5	Equilibrium of Rigid Bodies	
12	R	Mar 7	Ch. 5	Equilibrium of Rigid Bodies	
13	Tu	Mar 12		Exam 2 (Ch 4 & 5)	
	R	Mar 14		No class - instructor research trip	
	Tu	Mar 19		Spring Break	
	R	Mar 21		Spring Break	
14	Tu	Mar 26	Ch. 6	Analysis of Structures (method of joints)	
15	R	Mar 28	Ch. 6	Analysis of Structures (method of sections)	
16	Tu	Apr 2	Ch. 6	Analysis of Structures (Frames)	
17	R	Apr 4	Ch. 6	Analysis of Structures (Machines)	
				Exam 3 (Ch6) - To be Scheduled outside of class time	
19	Tu	Apr 9	Ch. 7	Internal Forces (Section 7.1 only)	Exam 3 (Ch6)
20	R	Apr 11	Ch. 8	Friction	
21	Tu	Apr 16	Ch. 8	Friction	
22	R	Apr 18	Ch. 8	Friction	
23	Tu	Apr 23	Ch. 9	Center of Gravity & Centroid	
24	R	Apr 25	Ch. 9	Center of Gravity & Centroid	
25	Tu	Apr 30	Ch. 9/10	Center of Gravity & Centroid/Moments of Inertia	
26	R	May 2	Ch. 10	Moments of Inertia	
27	Tu	May 7	Ch. 10	Moments of Inertia	
28	R	May 9		Exam 4 (Ch 9 & 10)	
	R	May 16		Final Exam	