

PHYSICS 4A  
Classical Mechanics  
WINTER 2013

Instructor: Kim Griest

Lecture: MWF 10:00am -10:50am, York 4080A  
Discussion/Problems Tuesdays, 6pm, York 4080A

Weekly Quizzes: Wed 9:00-9:50am, York 4080A, starting Wed, Jan 16  
No make-up quizzes, but your two worst scores will be dropped;  
(IF YOU ARE GOING TO MISS 3 OR MORE QUIZZES, DO NOT TAKE THIS COURSE.)

Griest Office: 337 SERF, 858-534-8914  
Griest Office Hours: Tuesday: 11-12pm (337 SERF) or call for appointment

T.A.: Michael Eldridge, [meldridg@ucsd.edu](mailto:meldridg@ucsd.edu)  
T.A. Office hours: Tuesday 2-3pm, Mayer Hall 3571  
<http://physics.ucsd.edu/students/courses/tutorialcenter/location.html>

Web Page: <http://physics.ucsd.edu/students/courses/winter2013/physics4a>  
Text: Wolfson and Pasachoff, Volume I, UCSD Custom Edition,  
Physics for Scientists and Engineers, 3rd edition

Final: Friday, 22 March, 8:00am-10:59am, YORK 4080A  
[NOTE: NO LATE OR EARLY FINAL; CHECK YOUR SCHEDULE NOW!]

---

GRADING POLICY

Quizzes: 60%  
Final: 40%

Homework will be assigned weekly, but will not be collected or graded. The solutions to odd numbered problems are in the textbook supplement; answers to even numbers will be posted.

Note that the quizzes and final will closely resemble the homework problems (and the examples in the book). If you can do all the homework on your own you will get a good grade in this course. If you skip doing homework, you will probably get a poor grade. Physics is only learned by the pain of doing the problems on your own.

You cannot memorize things at the end or just read over examples and expect to do well.

---

#### ACADEMIC DISHONESTY

You must do all the work on the quizzes and the final yourself and may not help anyone else. Any copying or cheating of any kind will be met with severe consequences. This includes helping someone else cheat. If you are thinking of cheating, don't take this class from me!

---

#### OUTLINE OF TOPICS

We'll cover pretty much everything in our custom book. While the book is short, there are many difficult topics that will require all your math skills and substantial insight. This course is the most basic in establishing your understanding of how the physical world works. The concepts of mass, force, acceleration, energy, power, torque, momentum, etc. are the foundation on which all physics is based. If you spend the time to really learn these concepts this quarter, it will make the rest of your study of science easier. There is no concept we learn this quarter that is not useful in many many other areas of science and engineering.

- Chap 1: Doing Physics
- Chap 2: Kinematics: moving in a straight line
- Chap 3: Vector description of motion
- Chap 4: Motion in several dimensions
- Chap 5: Force and movement
- Chap 6: Newton's laws
- Chap 7: Work, Energy, Power
- Chap 8: Conservation of Energy
- Chap 9: Motion under influence of Gravity
- Chap 10: Systems of particles
- Chap 11: Collisions and linear momentum
- Chap 12: Rotation
- Chap 13: Angular Momentum
- Chap 14: Static equilibrium: buildings and bridges
- Chap 15: Oscillations