

PHYSICS 4A  
Classical Mechanics  
WINTER 2012

Instructor: Kim Griest

Lecture: MWF 10:00am -10:50am, York 4080A

Discussion/Problems Tuesdays, 7pm, YORK 3000A

Weekly Quizzes: Wed 9:00-9:50am, York 4080A, starting Wed, Jan 18

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: 1:15-2:15pm (337 SERF) or call for appointment

T.A.: Chris Wolowiec, cwolowie@ucsd.edu

T.A. Office hours: Tuesday 10-11am, Physics Tutorial Center, Mayer Hall 2722

<http://physics.ucsd.edu/students/courses/tutorialcenter/location.html>

Web Page: <http://physics.ucsd.edu/students/courses/winter2012/physics4a>

Text: Wolfson and Pasachoff, Volume I, UCSD Custom Edition,  
Physics for Scientists and Engineers, 3rd edition

Final: Friday, 23 March, 8:00am-10:59am, YORK 4080A

[NOTE: NO LATE OR EARLY FINAL; CHECK YOUR SCHEDULE NOW!]

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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.

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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!

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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