

**PHY 4A – Physics for Scientists and Engineers****SYLLABUS**

**Class Hours/** Tuesday 2 p.m. – 5:50 p.m. PHY 70 (Lecture & Lab)  
**Room No** Thursday 2 p.m. – 4:50 p.m. PHY 70 (Lecture)  
**Class No** 57386

**Instructor** Sharon Wu  
**Phone** 638-3641 ex-3497  
**Office Hours** MWTh 11:00 am – 11:50 am (FEM 1D)  
 Or by appointment  
**Office** FEM 1D  
**E-mail** [sharon.wu@reedleycollege.edu](mailto:sharon.wu@reedleycollege.edu)

**Course Objectives:**

In the process of completing this course, students will:

- A. Improve mathematical skills through the process of applying mathematics to the physical world.
- B. Learn fundamental laboratory techniques.
- C. Experience the interaction between theory and experiment in scientific investigation.
- D. Learn to solve basic problems in classical mechanics.
- E. Study important properties of matter.
- F. Study the laws of fluid mechanics.
- G. Learn to solve problems in oscillatory motion.
- H. Learn the basic concepts of mechanical waves.

**Learning Outcomes:**

Upon successful completion of this course, students will be able to:

- A. Apply algebra, trigonometry, and first-year calculus to solve physical problems such as:
  - Kinematic equations
  - Vector quantities
  - Newton's Laws
  - Conservation of energy and momentum
  - Rotation bodies
  - Gravity
  - Oscillatory motion
  - Mechanical waves
- B. Identify the complementary roles of experimental investigation and theoretical explanation in science.
- C. Apply dimensional analysis to determine the units for an unknown quantity or to check the validity of equations
- D. Distinguish between important physical observable when it is measured or calculated.
- E. Distinguish between important physical observables, such as mass and weight or speed and velocity.

**Course Prerequisite:**

Advisories: ENGL 1A – Reading and Composition

Corequisites: MATH 5B – Math Analysis II

**Textbook:**

Title: Physics for Scientists & Engineers with Modern Physics, 4<sup>th</sup> Edition.

Authors: Douglas C. Giancoli

Publisher: Pearson/Prentice Hall

**Blackboard**

**Blackboard** is used for announcement and general class related information

To log-in Reedley College Blackboard:

**User name:** your student ID

**Password:** your student ID (\* Be sure to change your password after you login)

**PHY 4A – Physics for Scientists and Engineers****Mastering Physics**

**MasteringPhysics** is an online learning and homework assessment system.

URL: <http://masteringphysics.com>

Course ID: MPWU87174

Course Title: PHYS 4A – Fall 2012

**Course Outline:**

1. Introduction, Measurement, Estimating
2. Describing Motion: Kinematics in One dimension
3. Kinematics in Two or Three dimensions; Vectors
4. Dynamics: Newton's Laws of Motion
5. Using Newton's Laws: Friction, Circular Motion, Drag Forces
6. Gravitation and Newton's Synthesis
7. Work and Energy
8. Conservation of Energy
9. Linear Momentum
10. Rotational Motion
11. Angular Momentum; General Rotation
12. Static Equilibrium; Elasticity and Fracture
13. Fluids
14. Oscillations
15. Wave Motion

**Homework Assignments:**

Homework is assigned for each chapter on **MasteringPhysics**. Due date is posted with each assignment.

**Laboratory:**

This class has a lab that is mandatory. There are data sheets that you will need to complete as part of your lab activity that will be due at the end of the lab session. You are required to follow a number of safety precautions in the laboratory. You must read and sign the safety agreement before beginning of the first lab.

**Tests:**

There will be a test every two or three chapters and the final exam. Each test has conceptual questions that are multiple choices; and detailed physics problems that will need to be solved. Early tests can be arranged with a very good reason. A more **difficult** late test can only be arranged if you have an excuse verified by an impartial party (i.e., a doctor or a court note).

**Grading:**

20% of the final grade points are from homework assignment.

10% of the final grade points are from laboratory work.

65% of the final grade points are from chapter tests.

5% of the final grade points are from class work.

Final grade is assigned using following scale:

90-100	%	A
80- 89	%	B
70- 79	%	C
60- 69	%	D
< 60	%	F

- ❖ If you have perfect attendance and your grade is within 1 point (or 1%) of the next higher letter grade, the instructor will award you the next higher letter grade.

**PHY 4A – Physics for Scientists and Engineers****Important Dates:**

Class begin	Monday	08/13/2012
Last day to register	Friday	08/31/2012
Last day to change to/from a Pass/No-Pass grading basis	Friday	09/14/2012
Last date to drop this class	Friday	10/12/2012
No classes:		
Labor Day	Monday	09/03/2012
Veterans Day	Monday	11/12/2012
Thanksgiving Holiday	Thu & Fri	11/22/2012 – 11/23/2012
<b>Final Exam</b>	<b>Tuesday</b>	<b>12/11/2012 2:00 pm – 3:50 pm</b>

**Attendance:**

Attendance will be taken at beginning of each class. Students are expected to attend all class meetings, be on time, and be in class the entire class session. Students, who leave the class before the end of class, will be counted as tardy. Two tardiness count as one absence. Your classmates and I would greatly appreciate that you take care of your personal needs (i.e., using the restroom, getting a drink...etc.) before the class begins.

Students will be dropped from the class if they fail to attend the first class session of the semester. During the semester up to final drop date, any student who missed more than two weeks of class meetings will be dropped from this class (4 classes).

**Canceled Class Notification:**

Click on “Canceled Class Meetings” on Reedley College webpage ([www.reedleycollege.edu](http://www.reedleycollege.edu)) for class cancellations.

**Student Conduct:**

Students are expected to conduct themselves in a responsible manner in the classroom. Specific rules and regulations have been established in Board Policy 5410. Failure to adhere to the accepted standards will result in disciplinary action. Campus Policies on Student Conduct is described in [Reedley College Class Schedule](#).

**Accommodations for students with disabilities:**

If you have a verified need for an academic accommodation or materials in alternate media (i.e., Braille, large print, electronic text, etc.) per the Americans with Disabilities Act (ADA) or Section 504 of the Rehabilitation Act, please contact me as soon as possible.

**Plagiarism and Cheating Policy:**

Cheating and plagiarism is prohibited in the class. Incidents of cheating and plagiarism will result a failing grade on the particular examination or assignment in question.