

**PHYS 125**  
**General Physics I (with Lab)**  
**Summer 2014**

**Purpose and Objectives of the Course:**

The purpose of this course is to introduce fundamental concepts of Physics with an emphasis on mechanics. This is a calculus-based course designed primarily for bio-science and pre-medical undergraduate students. The goal of this course is to accomplish the following objectives:

- Learn the basic principles of physics.
- Be able to apply these principles to realistic situations.
- Develop a sense of logic that will benefit students in their future professional pursue.

<b>Instructor:</b>	Lam Yu
<b>Lecture Schedule:</b>	10:00 am - 11:40 am MTWRF
<b>Lecture Location:</b>	MEB (Mech. Eng. Building) 128
<b>Laboratory Schedule:</b>	Eight meetings this session. 1:00 pm - 4:00 pm See the second page of the syllabus for dates of laboratory meetings.
<b>Laboratory Location:</b>	Herzstein Hall, Room 218
<b>Instructor's Office:</b>	Brockman Hall, Room 110
<b>Office Hours:</b>	Mon. and Tues. and Thurs. 12:30 pm - 2:30 pm
<b>Phone:</b>	713-348-2894
<b>E-mail:</b>	lhyu@rice.edu
<b>Textbook:</b>	<u>Physics for Scientists and Engineers: A Strategic Approach</u> , 3rd edition, by Knight, Randall D. Pearson Publishing. ISBN-13: 978-0321832825
<b>Online Homework:</b>	Mastering Physics, purchase access at <a href="http://www.masteringphysics.com/">http://www.masteringphysics.com/</a> COURSE ID: <b>PHYS125RICESU14</b>
<b>Calculator:</b>	Any calculator with logarithms and trigonometric functions

**Grading Policy**

Final grade will be calculated using the grade breakdown listed below.

**Grade Breakdown**

Laboratory	15%
Online Homework	15%
Pledged Homework	15%
Midterm Exam	25%
Final Exam (Comprehensive)	30%

**Grade Cut Offs (tentative)**

Percent Score	Letter Grade
90	A-
80	B-
70	C-
60	D-
< 60	F

**Note:** These are the minimum grades that you are guaranteed when your grade is greater than or equal to the cut off listed.

## Lecture Schedule for Physics 125 Summer 2014

Week	Topics	Textbook Chapters
<b>5/19</b>	Introduction, 1-D Kinematics, Vectors, 2-D Kinematics	2, 3, 4
<b>5/26*</b>	Force & Motion, Dynamics I, Newton's Third Law	5, 6, 7
<b>6/02</b>	Dynamics II, Momentum, Energy	8, 9, 10
<b>6/06</b>	<b>Midterm Exam (100 minutes, in class)</b>	<b>Cover chapters 2 – 8</b>
<b>6/09</b>	Work, Fluids, Rotation	11, 15, 12
<b>6/16</b>	Oscillation, Traveling waves, Review	14, 20
<b>6/20</b>	<b>Final Exam (Three hours, in class)</b>	<b>Comprehensive</b>

\*(note: 5/26 is a university holiday)

## Laboratory Schedule for Physics 125 Summer 2014

Meeting times: 1:00 pm – 4:00 pm

Meeting location: Herzstein Hall, Room 218

Date	Laboratory Experiment
<b>5/21</b>	Kinematics
<b>5/28</b>	Projectile Motion
<b>5/30</b>	Forces
<b>6/04</b>	Uniform Circular Motion
<b>6/06</b>	Collisions in Two Dimensions
<b>6/11</b>	Energy Conversions
<b>6/13</b>	Fluids
<b>6/18</b>	Simple Harmonic Motion

## **Coursework Details**

### **Laboratory (15%)**

The objective of the laboratory exercises is to give the students hands-on experience with the phenomena and models that they will study in the lectures and homework. Also, it will help them develop basic experimental and analytic skills. Performing the laboratory experiments is very important and missing a laboratory is a prescription for loss of credit.

### **Online Homework (15%)**

Several times per week, online homework assignments will be posted on the Mastering Physics website <http://www.masteringphysics.com/>. If you do not already have access to the Mastering Physics website, you will need to purchase an access code in order to gain access to the online homework sets and to submit homework (Your code will be good for both PHYS 125 and PHYS 126.) If an access code did not come with your textbook, you can purchase one at the link above. To get access to the online homework for this course, you will also need the COURSE ID: **PHYS125RICESU14**.

These problems are selected to help you prepare for the pledged problems and exams. You are encouraged to discuss these problems with fellow students and instructors, but you need to work out the final answers for yourself.

### **Pledged Homework (15%)**

Pledged homework problems will be distributed each Monday. The first pledged homework problem set will be due at the beginning of class on the Tuesday after it is assigned (Monday 5/26 is a university holiday.) The second to fourth pledged homework problem set will be due at the beginning of class on the Monday after they are assigned. The final set of pledged homework problems will be due at the beginning of the last class. The solutions to your pledged homework problems must be written out on paper. These problems are intended to give you some experience in working, **completely on your own**, problems that you may not have seen before and that are typical of those that will appear on exams. **In working on the pledged homework problems, you may consult your own notes, problem solutions I have posted, your own textbook, and a calculator; all other resources are banned.** Late submission will not be accepted.

### **Midterm Exam (25%)**

The midterm exam will be a 100-minute in-class exam. It will be given during class time on Friday, June 6<sup>th</sup>. The midterm exam will test you on materials covered during the first half of the course. For both the midterm and the final exam, you may not use any book or note during the exam. Also, you cannot use cell phones or tablets as calculators.

### **Final Exam (30%)**

The final exam will be given on the last day of class. The final exam will be a **3-hour in-class exam**. The exam will start at 10:00 am and end at 1:00 pm. Please note the extended time. The final is comprehensive but it will emphasize the materials covered since the midterm exam.

## **Note on Grading**

Grades on free response questions in pledged homeworks and exams are based on what you actually write down. Ordinarily, the answer to a problem by itself, even if correct, is not sufficient to obtain full credit; you must also show that your method of solution is correct. Proper physical reasoning, when clearly demonstrated, will earn significant amounts of partial credit, even in the face of mathematical errors. The grader should be able to determine, without guessing, the steps used to solve the problem.

## **Re-grading Policy**

Do not write in a graded exam book or homework problem after it has been returned to you. If you feel that your work was not correctly graded, please direct your instructor's attention to the specific issues by means of a note on a separate sheet stapled to your paper. Submit it to your instructor within one week after work was returned. We will review the grading of the part to which you direct our attention, and possibly the rest of the assignment or exam.

## **Make-ups**

Make-ups for missed pledged problems, exams or laboratories will be given at the discretion of the instructor. You can be excused without penalty or be allowed a delayed make-up, pledged problems or exams if one of the following two conditions is met:

1. You are on official university business and you notify us well beforehand.
2. You have serious reason beyond your control, such as your own illness or a death in your family, and you get word to us immediately. As soon as possible, notify your instructor in writing or by email.

## **General Policies**

### **The Honor code**

We expect you to uphold the ideals set out by the honor council for Rice University students. More information can be found at <http://honor.rice.edu/>

### **Lectures**

All cell-phone and laptops should be turned off during class. Be polite and considerate to your instructor and your fellow classmates.

### **Students with Disabilities**

Any student with a documented disability seeking academic adjustments or accommodations is requested to speak with the instructor during the first two weeks of class. All such discussions will remain as confidential as possible. Students with disabilities are encouraged to also contact Disability Support Services in the Allen Center (email: [adarice@rice.edu](mailto:adarice@rice.edu), phone: 713-348-5841) during the first two weeks of class so that timely and appropriate arrangements may be made.

### **Standard Disclaimers**

The instructor has the authority to rule on any point not covered in this syllabus. The syllabus is subject to change at the discretion of the instructor. Students will be notified before any changes take effect.