

PHYSICS 141: PRINCIPLES OF PHYSICS (4 CREDITS)
SUMMER I 2007 ~ June 4 – July 13, 2007

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Lectures	Discussion	Lab
M, T, W, Th, and F	M and W	Tu and Th
5.30 - 6.50 pm	7.00 - 7.50 pm	7.00 - 9.00 pm
Physics 1402	Physics 1402	Physics 3314

NOTE: There is only **one** section of discussion and laboratory during the times shown above.

About the course

Welcome to PHYS 141! This course, the first of a two-semester series in general physics, covers the fields of mechanics, thermodynamics, and special relativity.

Required Texts

Text: Serway, Raymond E. and John W. Jewett. *Physics for Scientists and Engineers, Vol 1*, 6th ed.

Lab Manual: *Physics 141 Laboratory Manual (UMCP)*

Both texts are available at the University Book Store and the Maryland Book Exchange.

Corequisites

MATH 141 or MATH 221 is a corequisite for this class. (Credit will not be granted for PHYS171 and PHYS161 or PHYS141 or former PHYS191.). This is a calculus based course with Algebra and geometry as prerequisites. We understand that due to the varied background that students come from, not everyone is equally equipped with the skills required. Hence, we will try to hone your skills by giving you specially designed exercises in these specific topics.

Course requirements

Course requirements serve three functions. First, and most importantly, they help you to learn the material. Second, they help us to better teach the material in lectures, discussions, and labs by providing feedback on what is well and not so well understood. Finally, they aid us in evaluation.

Your grades will be based upon the following components:

Mid term exams: (Best 2 out of 3; 15 % each)	30 %
<i>(Exam 1: June 12, 5.30 - 6.30 pm)</i>	
<i>(Exam 2: June 22, 5.30 - 6.30 pm)</i>	
<i>(Exam 3: July 3, 5.30 - 6.30 pm)</i>	
Final Exam (July 13 in class)	20 %
Quizzes (best 4 out of 6)	10 %
(June 7, June 11, June 18, June 25, July 6, July 11)	
Laboratory	20 %
Homework	20 %

Homework

Assigned Problems: The surest and best way to learn physics is to work through as many problems as possible. However, it is not feasible to grade each and every problem. Hence, we will select and grade in detail two problems from every homework; each of the two problems are worth 5 points

each. The rest of the problems are graded out of 2 points each. An *almost correct* solution gets 2 points, while a *good attempt* (right method with the correct equations, correct picture) gets 1 point.

Homework assignments are due at the **beginning of lecture**. No homework grades will be dropped and no late homework will be accepted unless accompanied by written documentation of a University-recognized excuse (documented illness, documented family emergency, religious observances, participation in the University activity at the request of a University official).

Guidelines for homework assignments

- All homework assignments should be neatly written with answers to questions presented in numerical order. The TA will NOT grade any homework that does not meet this criterion and you will get a 0 on that homework.
- Be sure that your name is clearly written at the top of all pages and that you have stapled all pages together. You are responsible for misplaced or lost pages.
- Be sure to answer all parts of each question.

Suggested Problems: Often, I may suggest work problems (from the student's solutions manual) that may help students to better understand some concepts. These problems are not due in class or will not be graded, although it would be extremely beneficial to work through them.

Quizzes

Six 15-minute quizzes, consisting of 5 multiple choice questions and 1 problem, will be conducted through the course of the semester; the quiz problem will be similar to one of the homework problems. These quizzes will be right after discussion or lecture hours. The best 4 will be counted towards your final grade.

Exams

There will be three closed book and closed note exams midterm exams and one final exam. You can drop one of the midterms. No makeup exams for any of the mid terms are allowed; if you miss one of the mid term exams, it will count as your dropped exam. The exams will be of one hour duration and a mixture of conceptual (multiple choice questions) and work problems.

Laboratory

The laboratory schedule is as follows.

Expt #	Date	Day	Experiment
1	June 5	Tuesday	Errors and Significance of Data
2	June 7	Thursday	The Freely Falling Body
3	June 12	Tuesday	Equilibrium of forces
4	June 14	Thursday	Centripetal forces and acceleration
5	June 19	Tuesday	Two-dimensional collision
Make Up	June 20	Wednesday	Make up
6	June 21	Thursday	Angular Momentum and its conservation
7	June 26	Tuesday	Simple Harmonic Motion and Hooke's Law
8	June 28	Thursday	The Pendulum
9	July 3	Tuesday	Standing waves on a string
No Lab	July 5	Thursday	No Lab
10	July 10	Tuesday	Fluid Dynamics
Make Up	July 11	Wednesday	Make up

Please keep the following in mind.

1. Students **have to complete ALL** the laboratories and turn in **all** the lab reports **to be eligible** for a passing grade in the course. You will be given two opportunities to make up labs. However, you cannot make up more than two labs (1 from each half of the course).
2. Please read the complete experiment in the lab manual and complete all the questions listed in the “prelab.” The prelab questions are due at the *beginning* of the lab.
3. The lab report is due at the end of the lab. You will not be given extra time to turn in the report. So, it is a good idea to prepare for the lab by making all the necessary tables before coming to the lab and bringing the necessary supplies (pencil, ruler, graph sheets etc) with you.

Rescheduling of lectures, discussions, or lab hours

Some of the lab, discussion and lecture hours have been rescheduled. There is only **one** discussion and lab section. We will have some exams or quizzes during lecture period and some during discussion period (specific announcements later). Discussion just after exams or lecture just before an exam is pretty ineffective in terms of attendance and usefulness!

1. June 13 (Wednesday): No Discussion. Lecture instead. Additional lecture is from 7.00-8.50pm.
2. June 15 (Friday): Discussion from 7.00-7.50pm. This discussion is optional but you are encouraged to attend this since you will get help on the homework.
3. June 26 (Tuesday): No Lab. Lecture Instead. Additional lecture will be from 7.00-8.15pm.
4. July 5 (Wednesday): No Lab. Additional lecture Instead from 7.00pm

NOTE: The lectures mentioned above are in addition to the one from 5.30-6.50 pm.

Attendance

A 4 credit complete Physics course during 6 weeks of summer will be extremely fast paced and demanding! You will be learning new concepts every day and missing even one lecture can make you fall behind simply because the concepts build on the ones covered in earlier sessions. Hence, attendance (lectures, discussions, and labs) is **mandatory** and will be taken every day. Please send a note to me or the TA if you have a valid medical reason for not attending. Absence without permission/a valid reason or walking out of lectures/discussions will count towards *negative points*.

Getting help

If there is ever anything that you do not understand, get help immediately! Do not fall behind because you were afraid to ask questions. We view seeking help as a sign of your commitment to the course, and this will be considered when grading time comes around. You have many options available: you may ask me during or immediately following class, ask your TA in lab, or set up an appointment. We also encourage you to draw on the strengths of others in this class to learn the material by forming study groups—however, plagiarizing will not be tolerated.

Academic Honesty

Giving/receiving help on exams or plagiarizing homework and other assignments is not acceptable behavior in this class. Please refer to the student academic honor page www.shc.umd.edu for details. As mentioned earlier, you are allowed to discuss with your peers while attempting homework problems, but the work that you turn in must be your own. Any cases of suspected cheating will be immediately referred to the Honor Council; this is to protect your right to due process and a fair hearing.