

Physics 142 - Principles of Physics

Spring 2011 Course Syllabus

Course description The second of a two-semester series in general physics. This survey course will use algebra, trigonometry, and calculus and is recommended for chemistry and zoology majors. It also satisfies the requirements of medical and dental schools. The course is a continuation of PHYS 141, and covers waves, electricity and magnetism, optics and modern physics.

Pre-requisite PHYS141 or equivalent. Students are expected to be comfortable and proficient in algebra, trigonometry, and calculus.

Co-requisite MATH141 or MATH221

Instructor **Prof. Johnpierre Paglione** paglione@umd.edu
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Office hours : please make an appointment

Websites **ELMS COURSE SITE:** <http://umcptest9.blackboard.com> (**NOTE: not the usual address!!**)

WebAssign <http://www.webassign.net>

Books

- Tipler and Mosca, *Physics for Scientists and Engineers, Vol 2, 6th edition*. ISBN 9781429201339 (*)
- PHYS142 Laboratory Manual (UMCP), first edition

* **NOTE:** printed text and ebook version is available at a discount through WebAssign registration. See <http://www.webassign.com> for access and purchase. **Class Key: <umd 9009 5256>**

Credits

- 4 credit hours
- Credit will be granted for only one of: PHYS 142, PHYS 260 and PHYS 261, or PHYS 272.

Organization

Section	Teaching Assistant	Time/Location		
0101	Doojin Kim immworry@umd.edu	Discussion	Monday, 12:00pm-12:50pm	Math 0104
		Lab	Monday, 1:00pm-2:50pm	Physics 3314
		Office Hours	Monday, 5:00pm-6:00pm	Physics 4110
0102	Amir Najmi amir.c.najmi@gmail.com	Discussion	Monday, 2:00pm-2:50pm	Math 0405
		Lab	Monday, 3:00pm-4:50pm	Physics 3314
		Office Hours	to be determined	
0103	Jeff Magill jmagill@umd.edu	Discussion	Tuesday, 12:00pm-12:50pm	Col 0102
		Lab	Tuesday, 1:00pm-2:50pm	Physics 3314
		Office Hours	to be determined	

Lectures **Physics 1201, MWF 11:00-11:50 am**

Students are required to attend lectures, where homework assignments will be given and collected, exams and quizzes will be announced and administered and the course material will be presented. Lectures will consist of summary/guide presentation slides, chalkboard calculations, live demonstrations and constant student participation. Note that not all material will be directly covered in lectures. Students are responsible for reading and understanding all material in assigned chapters, whether or not this material is explicitly treated in the lectures. The lecture schedule with textbook references and mid-term exam dates is listed below.

The lecture summary slides will be available on the ELMS course space

Recitations Discussion sections are a forum where students can ask questions about the course material and where problems will be worked with student participation. Discussion sections will be conducted by Teaching Assistants.

Graded Work

Labs:

You are required to complete a total of 11 laboratory assignments. Teaching Assistants will conduct the lab sections each week where you will do the designated weekly laboratory exercise and complete the assigned experiment. You should read the lab description beforehand. For each lab, you must give your TA a completed "check sheet" and written answers to the questions at the end of the laboratory write-up. Your lab grade will be based on these questions (maximum 20 points, equally divided into the number of questions). The TA will deduct points if your handwriting is illegible, or if your answer is hard to understand because of poor grammar. **Each lab must be turned in before the end of the laboratory period.** If you cannot attend a session for an excusable reason you may attend another section given the same week **with the permission of the Instructor** or you may attend a scheduled makeup session. In general, it will only be possible to perform a single experiment during the makeup session.

Assignments:

The surest and best way to learn physics is to work through as many problems as possible!

Homework assignments will be given each week in class and posted on ELMS, usually on Fridays, and will be due exactly one week later at the *beginning of lecture*. Since it is not feasible to grade each and every problem, we will have **a combination of online grading through WebAssign and written assignments** graded by your TAs. Each week, you will be required to complete a problem set of approximately ten questions from the textbook by submitting your answers to WebAssign. This method allows for instant feedback on whether you are doing problems correctly, since WebAssign will tell you if your answers are incorrect! In addition, we will select two of the problems for which complete solutions are to be written and handed in at the beginning of the lecture when the assignment is due. These will be graded in detail and returned to you for feedback. **The total homework score will then be calculated out of a maximum 20 points.**

Guidelines for homework assignments:

- All homework assignments should be neatly written with answers to questions presented in numerical order. Make sure that you attempt problems starting at the top of the sheet proceeding downward. Have enough empty space between one problem and the next.
- **WRITE YOUR NAME AND SECTION NUMBER CLEARLY AT THE TOP OF EACH PAGE AND STAPLE ALL PAGES TOGETHER: The TA will NOT grade any homework that does not meet this criterion (zero points).**
- Be sure to answer all parts of each question.
- Your problems must contain detailed words and explanations for your steps. **THIS IS A MUST.**
- Any answer must be explained with physical principles or concepts. **A SIMPLE YES OR NO WILL NEVER DO.**
- If you can draw a diagram or a picture of the situation, **THEN YOU MUST DRAW IT.**
- Your TA will deduct points if your answer is hard to understand because of poor grammar.
- **ALL ANSWERS MUST HAVE UNITS.**

- To get full credit, you must show all your work.
- **LATE ASSIGNMENTS:** Late homework is accepted only in exceptional circumstances. If you turn in your homework late, four points per day will be deducted from your score.

Quizzes:

There will be a 10 minute quiz once each week, usually at the end of Monday's class, on the material covered in the HW you turned in the previous Friday. The quizzes will start at 11:40 and will be collected at 11:50 AM. The quiz may be a traditional problem or a conceptual one. **I will drop your two lowest quiz grades.** Makeup quizzes are not allowed: if you miss a quiz due to illness, that will be one of the quizzes that is dropped. There will be no quizzes during exam weeks.

Exams:

There will be three 50-minute exams in class and one final exam at the end of the term. You may bring one 4x6 index card with whatever you want written on it to the first exam. You may bring the cards from the previous exams plus one additional card to each subsequent exam (*i.e.* **1 card for exam #1, 2 cards for exam #2, 3 cards for exam#3**). The exam will include problems and conceptual questions. You are responsible for showing up on time with a working calculator (no laptops, PDA's, cell phones etc and **no graphing calculators**). The exam sheets will contain any numerical constants you will need. Makeup exams will be given only under extraordinary circumstances, and if arrangements are made with Prof. Paglione ahead of time.

Evaluation

The final grade will be based on the components below:

Homework	20%
Quizzes	10%
Mid-Term Exams	30%
Lab Reports	20%
Final Exam	20%

The final grade will be set at the end of the semester after all work is completed. In assigning the final grade, I will be guided by the University of Maryland grading policy, quoted below:

- A** excellent mastery of the subject and outstanding scholarship.
- B** good mastery of the subject and good scholarship.
- C** acceptable mastery of the subject and the usual achievement expected.
- D** borderline understanding of the subject. It denotes marginal performance, and it does not represent satisfactory progress toward a degree.
- F** failure to understand the subject and unsatisfactory performance.

I will decide where to put the dividing line for various grades after knowing the grade distribution of the class.

Tutoring and Help

Your instructor and teaching assistants have **office hours**, both scheduled and by appointment, and are happy to help you outside of class. Don't be shy! We really are eager to work with you!

Also, the Physics Dept runs a **free tutoring service**, called the Slawsky Clinic, that is run by a nice group of senior physicists. It is located in Room 1214 in the Physics building. There is special time reserved only for PHYS142 students, between 10-11am and 12-1pm Monday through Friday. However, you can usually get help at any time they are open, from 10am until 3pm. More information can be found at:

<http://www.physics.umd.edu/academics/ugrad/slawsky.html>

We strongly urge you to utilize the resources at your disposal to get help!!

University Closure

In the event of a University Closure the department will do its best to accommodate students by scheduling make-up sessions or revision of the lab schedule.

Students with disabilities

Students with disabilities should meet with the Prof. Paglione at the beginning of the semester so that appropriate arrangements can be made to accommodate the student's needs.

Academic Integrity

Along with certain rights, students also have the responsibility to behave honorably in an academic environment. Academic dishonesty, including cheating, fabrication, facilitating academic dishonesty, and plagiarism will not be tolerated. Any abridgement of academic integrity standards will be referred directly to the Assistant Dean and forwarded to the University's Office of Judicial Affairs. Confirmation of such incidents can result in expulsion from the University. Students who are uncertain as to what constitutes academic dishonesty should consult the University publication entitled Academic Dishonesty.

Of course, you must work by yourself on exams and quizzes. You are allowed to work with other students, the physics clinic, your TA and your instructor on your homework and on the labs. However, you should not just directly copy from them. Doing so is not only dishonest, it will hurt your ability to do the problems on the quizzes and the exams.

You should also be aware of the University of Maryland Honor Pledge, found at <http://www.inform.umd.edu/honorpledge>. The Honor Pledge is a statement undergraduate and graduate students should be asked to write by hand and sign on examinations, papers, or other academic assignments not specifically exempted by the instructor. The Pledge reads:

"I pledge on my honor that I have not given or received any unauthorized assistance on this assignment/examination."

The pledge was adopted by the University Senate on April 9, 2001, and approved by the President on May 10, 2001. Full implementation is effective throughout the University on the first day of the Spring 2002 semester.