Physics 260: General Physics II Fall 2011 Syllabus
Sections 0201, 0202, 0203, 0204, 0205, 0206

Course description

Physics 260 is the second of a three-semester calculus-based introductory, general physics sequence designed primarily for engineering students. The major topics included in the course are simple harmonic motion, waves, thermodynamics, electrostatics, and fundamentals of circuits.
The course consists of three parts—**Lecture**, **Discussion,** and **Lab (PHYS261)**. The prerequisites are MATH141 and PHYS161, while PHYS261 is a co-requisite that must be taken in the same semester. The grade for PHYS261 will be combined with your grade for PHYS260 and you will receive one grade. ***You must pass both PHYS260 and PHYS261 to receive a single passing grade!***
This course is designated a CORE Physical Science Lab (PL) Course when taken concurrently with PHYS261.

Staff

Instructor

Name	Email	Office hours	Location
Dr Daniel Hertz	dbhertz@umd.edu	F 3:00–5:00 pm (*and by appointment)*	PHY3102

Discussion and Lab TAs

Name	Email	Office hours	
Anton de la Fuente	matonski@gmail.com	M 2:00–3:00 pm, W 12:00–1:00 pm	PHY0104
Jeff Magill	jmagill@umd.edu	Tu 1:30–3:30 pm	
Zach Raines	raineszm@umd.edu	Tu, Th 4:00–5:00 pm	PHY0220
Chris Verhaaven	cver@umd.edu	Tu, Th 9:00–10:00 am	PHY4208

Course Website and Communication

Course documents, lecture slides, homework assignments and course communication will all be handled using ELMS Blackboard. Make sure you have access to the course site.
Changes of schedule and other important course information will be posted on the course website and in the event of urgent information will be emailed to students.

Times and Locations

Section	Type	Time	Location	Instructor
All	Lecture	MWF 11:00–11:50 am	PHY1412	Dr Hertz
0201	Discussion	Tu 8:00–8:50 am	PHY0405	Anton de la Fuente
0202	Discussion	Tu 9:00–9:50 am	PHY1219	Jeff Magill
0203	Discussion	Tu 10:00–10:50 am	EGR2154	Zach Raines
0204	Discussion	W 10:00–10:50 am	PHY1304	Anton de la Fuente
0205	Discussion	W 12:00–12:50 pm	PHY1201	Jeff Magill
0206	Discussion	M 4:30–5:20 pm	PHY1219	Chris Verhaaven

Required Materials

- Physics for Scientists and Engineers: A Strategic Approach with Modern Physics 2nd Ed (volumes 2,3 and 4), by R. Knight
- MasteringPhysics Subscription (if you have an existing one, you do not need a new one)
- ResponseCard RF-LCD Clicker (if you already own a clicker, you can use it. You cannot use an iPhone/iPad/other mobile device)

Lectures

Students are ***required*** to attend lectures, where homework assignments will be collected, exams will be announced and administered, and the course material will be presented. During lectures, cell phones and other mobile devices may not be used.

Clickers/ Participation

Lectures will include a number of questions which students will answer using their clickers. Credit is assigned based on whether or not questions are answered, not on which answer is given. In other words, you still get credit if you guessed wrong. But if you don't answer at all, you get no credit.
Participation will account for 3% of your final grade. For purposes of your participation grade, each of the 25 lectures (discounting the first lecture and in-class exams) will be worth an equal amount, regardless of the number of questions asked. You will receive full participation credit for a lecture provided you answer at least half of the questions (regardless of whether they are answered correctly or not). If you do not answer at least half the questions, you will not receive credit.
You may miss four lectures without any penalty; beyond that every lecture missed will correspond to a loss of 1/21st of the 3% possible for participation.

Lab

Labs are taught as a separate course (PHYS261), instructed by Professor Welstood. ***You must be registered for the lab course and receive a passing grade for it in order to pass PHYS260.***

Discussion sections

Discussion sections will be conducted by Teaching Assistants. They will involve interactive tutorials, problem solving help, addressing students' individual concerns and questions, and are an important part of the course. Graded midterm exams will be returned during discussion section.

Homework

Homework will be assigned weekly, through the MasteringPhysics website. The code for the course is DBHERTZ260FALL2011. Each assignment will be posted on Wednesdays at 5:00 pm and is due the following Wednesday at 9:00 am.

The first homework assignment will be due on 9/14.

The policies for MasteringPhysics questions will be as follows:

- Number of attempts per question: 5
- Deduction of credit for incorrectly answering a multiple-choice or true/false question.
  - Deduction per incorrect answer: 100%/(# of answer options - 1)
- Deduct credit for opening a Hint.
  - Deduction per Hint opened: 5%

Discussion between students regarding homework assignments is strongly encouraged. However, all work you hand in *must* be your own. Copying another student's homework is a violation of the University's code of academic integrity and will be dealt with accordingly (see below).

In addition to the MasteringPhysics homework, there will be a single worked problem which will be posted on the course blackboard site.

This must be written up and handed in on paper in class on Wednesday. Make sure that your homework is stapled together (do not use a paper clip) and that your name, section number and the name of your TA are all on every page in the top right corner.

Late homework will not be graded. Homework which is illegible will not be graded.

There will be 10 homework assignments during the course. Of these, only the 8 best will be used for purposes of calculating your final grades (so you drop your two worst homework grades if you complete in all assignments).

Quizzes

Quizzes will be conducted weekly in lecture, using clickers. These will take place on Wednesdays, and will be based on the material in the homework due the Monday before the quiz.

The first quiz will be on 9/19.

For the quizzes, you will be assigned partial credit (1 point) for answering a question incorrectly, and full credit (5 points) for answering it correctly. If you do not attend the lecture, or do not answer, you will receive 0 points. All quizzes will be weighed equally for purposes of determining your final grade, regardless of the number of questions on the quiz.

There will be 10 quizzes during the course. Of these, only the 8 best will be used for purposes of calculating your final grades (so you drop your two worst quiz grades if you complete all quizzes).

Exams

There will be three in-class exams (on 10/12, 11/9 and 11/30 during the normally scheduled lecture) and a one 2 Hr. Final exam (12/16, 6:30-8:30 pm).

All exams are closed book and closed note exams.

Students will have access to a sheet containing important formulae and physical constants. The use of graphing calculators is not permitted for exams.

The final exam is common to all Physics 260 lecture sections and its content will be determined by the four course instructors working together.

Of the three in-class exams, only your best two grades will be counted for the final grade.

Final Grade

The final grade will be based on the components with the following weights:

Portion	**Contribution**
Two best in-class exams	2×15% = 30%
Final Exam	25%
Participation	3%
Quizzes (8 best)	10%
Homework (8 best)	7%
Labs (from PHYS261)	25%

Tutoring

The Physics Department has a free tutoring service, the Slawsky Clinic. It is located in Room 1214 in the Physics building. See http://www.physics.umd.edu/academics/ugrad/slawsky.html

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 instructor at the beginning of the semester so that appropriate arrangements can be made to accommodate the student's needs. I am more than happy to accommodate students with special needs but you need to inform me ahead of time so that I can arrange for the appropriate measures to be taken.

Academic Integrity I expect all students to comply with the University of Maryland's academic integrity policies, including the code of academic integrity and the honor pledge. Any and all failures to comply will result in a failing grade and will be reported to the Honor Council. Violations of the code include but are not limited to copying homework, using unauthorized materials in on exams, copying another student's exam, and using another student's clicker in lecture.

Absences and makeups As a policy, there will be no make-ups for lectures, quizzes and homework assignments,because students are already permitted to drop their lowest 2 quiz and homework grades, their lowest mid-term exam grade, and their lowest 3 participation grades for lectures.
Make-ups beyond this built-in leeway will only be possible under extreme extenuating circumstances, generally limited to medical emergencies, for which documentation must be produced, signed by a health care professional.

Tentative Schedule of Topics (subject to change)

Class	Week	Date	Day	Topic	Subtopics	Reading in Knight	HW	Quiz
1	1	9/1	Th	Oscillations	Course Introduction; Simple Harmonic Motion Dynamics	14.1,14.2,14.4		
2	2	9/6	Tu		Energy, vertical oscillations, pendulum	14.3, 14.5, 14.6		
3		9/8	Th	SHM/Fluids	Damped and forced SHM, Pressure & Density	14.7, 14.8, 15.1,15.2		
4	3	9/13	Tu		Pascal's Principle, Hydraulic Lift, Archimedes' Law	15.3,15.4		
5		9/15	Th		Equation of continuity, Bernoulli	15.5	1	
6	4	9/20	Tu	Waves	Type of waves, sine waves, phase, speed	20.1-20.3		1
7		9/22	Th		2&3-D, Light and Sound, Doppler Effect	20.4,20.5,20.7	2	
8	5	9/27	Tu		Power, Intensity, Superposition, Standing waves	20.6,21.1-21.4		2
9		9/29	Th		Interference, beats	21.5-21.8	3	
10	6	10/4	Tu	Thermal	matter, phase changes, ideal gasses, temperature	16.1-16.5		3
11		10/6	Th	Physics	Ideal Gas processes, work and heat, ideal gasses & work	16.6,17,1-17.3	4	
12	7	10/11	Tu		***1st EXAM: OSCILLATIONS, FLUIDS, WAVES***			4
13		10/13	Th		First Law, Work & Heat, Calorimetry, Heat Transfer	17.3-17.8		
14	8	10/18	Tu		Kinetic Theory, pressure & temperature (micro)	18.1-18.3		
15		10/20	Th		Kinetic theory: specific heat, equipartition, disorder	18.4-18.6	5	
16	9	10/25	Tu		Thermodynamic cycles, heat engines	19.1-19.2		5
17		10/27	Th		Heat engines & refrigerators	19.3-19.5	6	
18	10	11/1	Tu	Electricity	Charge, insulators & conductors, Coulomb's Law	26.1-4		6
19		11/3	Th		Coulomb's Law: Superposition, Fields	26.5, 27.1-27.2	7	
20	11	11/8	Tu		***2nd EXAM: THERMODYNAMICS***			7
21		11/10	Th		Electric Field calculations, motion in fields	27.3-27.8		
22	12	11/15	Tu		Symmetry, Flux, Gauss	28.1-28.4		
23		11/17	Th		Applications of Gauss, Electric Potential	28.5-28.6	8	
24	13	11/22	Tu		Electric Potential Energy & Electric Potential	30.1-30.4		8
		11/24	Th		***NO CLASS -- THANKSGIVING BREAK***			
25	14	11/29	Tu		Capacitors, Capacitance, energy, dielectrics	30.5-7		
26		12/1	Th		***3rd EXAM: ELECTROSTATICS***			
27	15	12/6	Tu		Circuits, currents, resistivity, resistance, Ohm, Kirchoff	31.1-31.5,32.1-32.2		
28		12/8	Th		Circuits, resistors, capacitors, RC circuits	32.3-32.9	10	
29	16	12/13	Tu		Overflow			10
			?		Review for Final Exam			
		12/16	F		***FINAL EXAM (6:30-8:30 PM)***			