

Physics 0111

Introduction to Physics II

Instructor: Dr. Joe Boudreau (Physics & Astronomy)

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Course Description: Physics 111 is the second-semester of a two-semester introductory (non-calculus based) physics lecture-demonstration sequence that introduces students to the basic elements of both classical and modern physics. The subjects covered in Physics 0111 are wave motion and sound, electricity and magnetism from electrostatics through electromagnetic waves, geometrical and physical optics, special relativity, and selected topics in modern physics. This course sequence is especially designed for students who are interested in the life sciences or health-related professional fields. Thus the emphasis will be on describing and demonstrating the underlying basic principles rather than on mathematical formalism. The correlation between material in this course and what is covered in the MCAT exam is excellent. Weekly homework problems are assigned to develop analytical skills and deepen understanding of the concepts. Students are expected to be familiar with elementary high school algebra, geometry, and trigonometry.

Web site and electronic homework system: is based on WebAssign™, accessible from the site www.webassign.net. You may log into this site with your Pitt username using your PeopleSoft ID number. Access to WebAssign is permitted free for fourteen days, after which you must purchase access, either via a secure web connection to the site, or by purchasing access cards from the University Bookstore.

All official communication about the course will be posted to the WebAssign site. Check there for all important announcements, assignments, and updates to this Syllabus.

The textbook for the course is Physics by John D. Cutnell and Kenneth W. Johnson (Seventh Edition). The WebAssign product described above includes full access to the on-line textbook.

Reading and Lectures: Students should read the textbook according to the schedule below. I strongly recommend reading the material *before* lectures—you will gain much more from the lectures if you have already tried to digest some of the material beforehand. An interactive student response system gives students a chance to participate during lectures by responding to conceptual questions, electronically.

MONTH	DAY	LECTURE TOPIC	Chap
January	7	Waves	16
	9	Sound	16
	11	Interference	17
	14	Interference	17
	16	Electric Force	18
	18	Electric Field	18
	23	Electric Potential	19
	25	Electric Potential	19
	28	Electric Circuits	20
	30	Electric Circuits	20
Feb	1	Review	Rev
	4	Hour Exam I	
	6	Magnetic Forces	21
	8	Magnetic Fields	21
	11	Electromagnetic Induction	22
	13	Electromagnetic Induction	22
	15	AC Circuits	23
	18	AC Circuits	23
	20	EM Waves	24
	22	EM Waves	24
	25	Reflection of Light	25
	27	Reflection of Light	25
	29	Lenses and Optical Instruments	26
March	3	Lenses and Optical Instruments	26
	5	Review	Rev
	7	Hour Exam II	
	17	Interference of Light	27
	19	Interference of Light	27
	21	Special Theory of Relativity	28
	24	Special Theory of Relativity	28
	26	Particles and Waves	29
	28	Particles and Waves	29
	31	The Atom	30
April	2	The Atom	30
	4	Review	Rev
	7	Hour Exam III	
	9	Nuclear Physics and Radioactivity	31
	11	Nuclear Physics and Radioactivity	31
	14	Ionizing Radiation, Nuclear Energy, Elementary Particles	32
	16	Ionizing Radiation, Nuclear Energy, Elementary Particles	32
	18	Review	Rev
	25	Final Exam 4:00-5:50	

Recitation sections also meet once per week. These sessions are taught by graduate Teaching Assistants and provide students with the opportunity to ask questions about the lecture material or the homework and to work out sample problems in a small-group setting. The TA's maintain a recitation grade based on participation and quizzes that they administer. The graduate teaching assistants this term are:

Bryan Nelson (bln2+@pitt.edu)
Jintao Liu (jil41+@pitt.edu)

Final exam: The final exam is scheduled for Friday, April 25, 4:00-5:50 PM.

Hour exams: Are given during class time, on the date indicated in the class schedule above. No credit is given for a missed exam and no makeup examinations are foreseen.

Homework is assigned each week. The homework is electronic and the current homework assignment is available from the course web page, which you can reach from

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

Homework due dates can be seen on the web site. They will generally be due on Tuesday evenings. The homework is automatically graded by the computer, which allows you instant feedback.

Your final course grade is a combination of the five elements of your performance:

Lecture Participation:	5%
Recitation Grade:	5%
Homework:	10%
Hour exams:	15%, each.
Final exam:	35%.

The grade scale is determined in the following manner:

40% Points D-
55% Points C-
70% Points B-
85% Points A-

The department of physics and astronomy maintains a **resource room** and **exploration center** for the benefit of the students in the introductory courses. They are both accessible through room 312 on the third floor of Thaw Hall. The room is staffed with graduate teaching assistants, all of whom are knowledgeable about the materials presented in this course. Students can meet with the instructor or with one of the graduate teaching assistants during their office hours, and are especially encouraged to do

so if they encounter difficulties understanding the material. **Peer instruction** is offered by Shannon Brady, a Pitt junior studying rehabilitation science (slb49@pitt.edu).

Special Accommodations for Disability: If you have a disability that requires special testing or other accommodations, you need to notify both the instructor and the Office of Disability Resources and Services no later than the 2nd week of the term. You may be asked to provide documentation of your disability to determine the appropriateness of accommodations. The Office of Disability Resources and Services is located in the William Pitt Union, Room 216. Call 648-7890 (Voice or TDD) to schedule an appointment.

Academic Integrity: All students and instructors in this course are expected to follow the University of Pittsburgh academic integrity guidelines. If you are not aware of the specifics, you should obtain a copy of these guidelines from the CAS Dean's Office, 140 Thackeray Hall, or look them up on page 9 of the CAS publication "*First-Year Viewpoint, 1999-2002*" or on the College of Arts and Sciences Syllabus – Physics 0111 Page 7 Fall Term 2005 (Term 2081) Web page. Violations of these guidelines by a student may result in a zero score for an examination or a failing grade for the entire course.