

Syllabus

Physics 270

Spring 2005

Prof. H. H. Chen

Lectures: Sections 0401 M 7:00 – 8:50PM, W 7:00 – 7:50PM in Physics Rm 1410.
Sections 0402 M 7:00 – 8:50PM, W 7:00 – 7:50PM in Physics Rm 1410.

Recitations: Section 0401: W 8:00 - 8:50 PM, in Math B0427.
Section 0402: W6:00 - 6:50 PM, Room 4220 in Physics Building

Office: Physics 3102

Phone: 405-6088, hsinghenchen@yahoo.com

Office Hours: To be announced

Teaching Assistants: Daniel Chapman, Ryan Behunin

Prerequisites: Physics 260, 261, I also expect you to be proficient in differential and integral calculus as well as vector algebra.

Co-requisite: Physics 271

Textbook: Physics for Scientists and Engineers, Volume II, Fifth Edition, by Raymond Serway and Robert Beichner.

Important Dates – Spring 2006

First day of class	January 25, Wednesday
Mid term #1	February 20, Monday
Midterm #2	March 27, Monday
Midterm #3	April 24, Monday
Last day of this class	May 10, Wednesday
Final Exam	May 15, Monday, 7:00 – 9:00 PM, Phys 1410

Grading

Homework	20%
Lab (271)	25%
Midterms	10% each
Final	25%

Reading Assignments: You should read the text for sections listed in the schedule before coming to the lectures and recitations. Materials in the textbook not fully covered in the class should also be read. All sections listed in the schedule may appear in the exams.

Homework Assignments: Every Wednesday a set of homework will be assigned to you. They are due a week later. No credit will be given to late homework unless for a good reason. Since doing homework is the only way to truly learn physics, I strongly urge you to take them seriously. You may form groups to discuss homework problems together. But you should not copy homework from each other. If you do not do homework you will fail the class for certain. You should write neatly and have the physical reasoning of the problem clearly explained.

Exams: Exams are designed to test your understanding of the materials taught, discussed and assigned to you. You are supposed to memorize certain important facts, including definitions, formulas, principles, laws and theorems. The exam will be closed book. You may bring

calculators but no crib sheets. No makeup exams will be given to students for any reason other than being seriously ill with a note from your physician before or immediately after the exam.

Laboratory

Physics 271(previous Physics 263A) is the laboratory part of Physics 270, and meets in room PHYS-3220. This course carries one credit and the grade is folded in with the Physics 270 course grade. You must pass Physics 271 in order to pass the entire course. If you do not pass this part of the course you will be required to repeat the entire course. The labs meet for three hours a week. You are expected to attend each class and will be allowed to make up labs only under exceptional circumstances. For more information on the laboratory portion of this course, consult the course web page, or contact Dr. Jawahery. If you have already taken Physics 271(previous Physics 263A) and want that to count for this semester's course, please show the official grade to the instructor.

Course Schedule:

This course will cover Chapters 29-41 of Serway & Beichner, Volume II. The tentative schedule is the following:

Date	Exams	Topics	Chapters from Serway
Wk 1 1/25		Magnetic Force	29
Wk 2 1/30		Magnetic Fields Biot Savart Law	29, 30
Wk 3 2/6		Gauss Law Ampere's Law	30
Wk 4 2/13		Faraday's Law	31
Wk 5 2/20 2/22	Exam	Midterm 1 Inductance	Ch.29 - 31 32
Wk 6 2/27		Alternating Current	33
Wk 7 3/6		Electromagnetic Wave	34
Wk 8 3/13		Nature of Light	35
Wk 9			

3/20		Spring Break	
Wk 10			
3/27	Exam	Midterm 2	Ch 32 – 35
3/29		Geometric Optics	36
Wk 10			
4/3		Interference	37
Wk 11			
4/10		Diffraction & Polarization	38
Wk 12			
4/17		Relativity	39
Wk 13			
4/24	Exam	Midterm 3	Ch 36 – 39
4/26		Quantum Mechanics	40
Wk 14			
5/1		Quantum Mechanics	41
Wk 15			
5/8		Review	
5/15	Exam	Final Exam	All Chapters

Homework Assignments (Tentative)

Week number	Homework number	Homework Due Date	Problems
1		--	
2	1	2/6	Chap 29: 4, 12, 14, 23, 31, 39, 44; 48, 68
3	2	2/13	Chap 30: 3, 4, 16, 19, 30, 31, 34, 36, 40
4	3	2/20	Chap 31: 2, 4, 17, 22, 26, 32, 36, 37, 44
5	4	2/27	Chap 32: 4, 11, 14, 16, 24, 31, 36, 42, 52
6	5	3/6	Chap 33: 2, 6, 9, 16, 18, 20, 24, 30, 38
7	6	3/13	Chap 34: 3, 4, 7, 11, 13, 30, 31, 43; 58
8	7	3/20	Spring Recess
9	7	3/27	Chap 35: 2, 3, 5, 13, 16, 27, 31, 38, 39; 43
10	8	4/3	Chap 36: 2, 12, 23, 25, 33; 41, 45
11	9	4/10	Chap 37: 1, 7, 9, 14, 17, 21, 26, 31, 44
12	10	4/17	Chap 38: 1, 8, 14, 17, 23, 31, 36, 38, 52
13	11	4/24	Chap 39: 2, 3, 6, 13, 17, 26, 31, 35, 41, 49
14	12	5/1	Chap 40: 7, 9, 15, 18, 20, 31, 38, 42, 56
15	13	5/8	Chap 41: 3, 11, 14, 15, 17, 21, 26, 31