

PHYSICS 220
General Physics II
Davidson College, Fall 2009

Professor Mark Holcomb
Email: [maholcomb@davidson.edu](mailto:maholcomb@ davidson.edu)

Dana 142
TEL: (704) 894-2077

Lecture: 9:30 – 10:20 am, MWF, Dana 146
Lab: 1:00-3:45 Thursday, Dana 127

Texts: *PHYSICS*, 6th Edition, Douglas Giancoli, and *Physlet Physics*, Christian and Belloni

Course Objectives: This course is the second half of a two-semester introduction to physics. We will cover much of chapters 16 through 30 this semester and some of chapters 31- 33 if there is time. Topics will include electricity and magnetism, electromagnetic waves, optics, relativity, and atomic and nuclear physics. The text is encyclopedic in coverage, so we will choose to omit a number of sections. We will also not cover every assigned section in class. Many sections will be left to your own reading or will be touched on in lab, while class time will be used to discuss concepts, develop understanding, do demonstrations, look at computer simulations, and work problems. Class will meet as scheduled below. The chapter assignment for each day indicates where we will probably be at that time. Reading of the text material *before the lecture* is a necessary part of your being able to understand the lectures. This class requires your active participation and reading the text material a *number of times* is part of that participation.

Course Requirements:

Attendance: Attendance in class follows the College's 25% rule. Attendance is required at reviews and all lab sessions. Each student is responsible for the material presented in class and any announcements made in class. Please mark the roll yourself each day you are present. The Honor Code governs this activity.

Homework: Assigned questions and problems for each chapter will be placed on the website. Discussion about homework strategies and solutions and is strongly encouraged; however, **you may not look at another student's solutions**. Copying another student's work from this class or previous classes or using published or on-line solutions to problems is an honor code violation. Simply stated, you must write up your own assignments without using resources other than your class notes, textbook, Pearson's online textbook resources, and possibly a generic problem solving guide, e.g., Schaum's Outline. Problems are to be pledged as having been done according to the above requirements. The word PLEGGED with your name, the date, your signature signifies your compliance with these requirements. Homework will **not** be accepted late **or** unpledged. Unsupported answers (particularly *yes* or *no* alone) will **not** receive full credit. There are other questions and problems in the chapters and on the text website that I recommend to you as being helpful to your understanding of the material.

Reviews: Reviews are closed book and will be comprised of questions and problems similar to the homework and those from class, as well as definitions, explanations of concepts and

DATE	CHAPTER AND TOPIC	OMIT SECTIONS
Sept. 28 Sept. 30 Oct. 2	Review #1 (Chapters 16-19) Ch 20, Ch 21 : Electromagnetic Induction and Faraday's Law Ch. 21	
Oct. 5 Oct. 7 Oct. 9	Ch. 21 Ch. 21, Ch. 22 : Electromagnetic Waves Ch. 22	
Oct. 12 Oct. 14 Oct. 16	No class (fall break) Ch. 22 Ch. 23 : Geometric Optics	
Oct. 19 Oct. 21 Oct. 23	Ch. 23 Ch. 23, Ch. 25 : Optical Instruments Ch. 25	1,4-11
Oct. 26 Oct. 28 Oct. 30	Ch. 24 : The Wave Nature of Light Ch. 24 Ch. 24	11
Nov. 2 Nov. 4 Nov. 6	Review #2 (Chapters 20-23, 25) Ch. 24 Ch. 26 : The Special Theory of Relativity	
Nov. 9 Nov. 11 Nov. 13	Ch. 26 Ch. 26 Ch. 26, Ch. 27 : Early Quantum Theory and Models of the Atom	9
Nov. 16 Nov. 18 Nov. 20	Ch. 27 Ch. 27 Ch. 27	
Nov. 23 Nov. 25 Nov. 27	Ch. 28 : Quantum Mechanics of Atoms No class (Thanksgiving) No class (Thanksgiving)	4, 9,12
Nov. 30 Dec. 2 Dec. 4	Ch. 28, Ch. 30 : Nuclear Physics and Radioactivity Ch. 30 Review #3 (Chapters 24, 26-28)	12
Dec. 7 Dec. 9 Dec. 10 Dec. 11	Ch. 30 Ch. 31 : Nuclear Energy; Effects and Uses of Radiation Reading Day Finals begin	

N.B.: The above outline is a *rough* approximation of the schedule. Inevitably some changes will occur; however, I will give ample notice before any changes are made.

LABORATORY SCHEDULE

<u>Lab</u>	<u>Experiment</u>
Aug. 27	NO LAB
Sept. 3	Electrostatics
Sept. 10	NO LAB
Sept. 17	Electric Fields and Potentials
Sept. 24	Ohm's Law
Oct. 1	DC Circuits
Oct. 8	Magnetic Fields and Forces
Oct. 15	Oscilloscopes and Multimeters
Oct. 22	AC Circuits
Oct. 29	Lenses and Mirrors
Nov. 5	Interference and Diffraction
Nov. 12	Relativity
Nov 19	Atomic Spectra
Nov. 26	NO LAB (Thanksgiving)
Dec. 3	Nuclear radiation
Dec. 10	NO LAB (Last week of class)