Fall 9-1-2001

PHYS 122N.01: General Physics II

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GENERAL PHYSICS II

LECTURES: MTWRF 9:10-10:00, Science Complex 423

INSTRUCTOR: Prof. Carla Riedel
Office: SC 122 / 243-5179 / `riedel@selway.umt.edu`
Office hours: M 11:10, T 8:10, W 3:10, R 2:10, F 10:10, and by appointment

DESCRIPTION: The second semester of a year-long introduction to physics, the focus of which will be electricity and magnetism, light, and modern physics, this course will emphasize both the conceptual understanding of physical phenomena and the tools of analytic problem solving.

PREREQUISITE: Physics 121N: General Physics I

TEXTS: *Physics: Principles with Applications*, 5^{th} ed., Giancoli (Prentice-Hall 1998);
Faculty Pack, UM Physics Faculty (2001).

ONLINE: Giancoli website: `http://cw.prenhall.com/bookbind/pubbooks/giancoli`
Class website: `http://www.physics.umt.edu/phys122`

HOMEWORK: Plan to spend 10–15 hours on homework each week.
Roughly one chapter of reading and 15-20 problems will be assigned each week.
One or two non-Giancoli problems will be assigned and perfunctorily graded each week. No late homework will be accepted. Working with others on homework is strongly encouraged, but the work you turn in must be your own.
Solutions posted outside office and on class website.

LABS: One two-hour lab nearly each week (T 2:10–4:00) in SC 231.
Participation and a short write-up (due the next day) are required for each lab.
Failure to complete 3 labs results in lowering of final letter grade.
Failure to complete more than 3 labs results in final failing grade.
One make-up lab is allowed. No late labs will be accepted.

EXAMS: Closed book, but $3'' \times 5''$ note cards are allowed.
Simple calculator (without symbolic manipulation) is required.
Each exam will be roughly $\frac{1}{4}$ qualitative and $\frac{3}{4}$ quantitative.
Practice exams will be available on class website.
Five in-class midterms (one card). Lowest midterm score dropped.
One two-hour, comprehensive final (five cards or one $8.5'' \times 11''$ sheet).
Help sessions will be scheduled outside of class prior to each exam.
Make-up exams will be allowed only in extreme situations, and *only* when arranged in advance.

GRADING:

Midterms	50% (lowest score dropped)
Homework	15%
Lab Reports	10% (at least 7 reports required)
Final Exam	25%

All grading will be based on correctness, completeness, and clarity.

Students with disabilities requiring accommodations, please, contact the instructor.

TENTATIVE SCHEDULE

Week	Ch.	Topic	Lab	Exam
9/4 – 9/7	16	Electric Charge and Electric Field		
9/10 – 9/14	16 17	Electric Potential and Energy		
9/17 – 9/21	17 18	Capacitance Electric Currents	Electric Field and Electric Potential	R 9/20 Ch. 16,17
9/24 – 9/28	18 19	DC Circuits	Ohm's Law and Simple Electrical Connections	
10/1 – 10/5	19 20	Magnetism	Analysis of Slow RC Circuits	
10/8 – 10/12	20		Use of the Oscilloscope	W 10/10 Ch. 18–20
10/15 – 10/19	21	EM Induction; AC Circuits	Circuit Analysis with an Oscilloscope	
10/22 – 10/26	22 23	Electromagnetic Waves Light: Geometric Optics	Measurement of the Earth's Magnetic Field	
10/29 – 11/2	23 24	Wave Nature of Light	Ampere's Law and the Measurement of μ_o	M 10/29 Ch. 20–22
11/5 – 11/9	24		Lenses and Image Formation	
11/13 – 11/16	26	Special Relativity	Interference and Diffraction Patterns	F 11/16 Ch. 23,24,26
11/19 – 11/20	26			
11/26 – 11/30	27	Early Quantum Theory and Models of the Atom	Spectrum Analysis	
12/3 – 12/7	27 Apps	Medical Physics Applications		
12/10 – 12/14		Review	Make-up Lab	T 12/11 Ch. 26,27,Apps
12/18	8:00 – 10:00			FINAL

Apps = individual sections spread throughout the book.
Subject coverage may vary, but exam dates are firm.

Reminder: September 24 is No Penalty Drop Deadline.