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Fall 9-1-2000

PHYS 121N.01: General Physics I

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GENERAL PHYSICS I

- LECTURES:** MTWRF 8:10-9:00, Science Complex 131
- INSTRUCTOR:** Dr. Carla Riedel
Office: SC 122 / 243-5179 / riedel@selway.umt.edu
Office hours: M 11:10, T 3:10, W 2:10, R 9:10, F 10:10, and by appointment
- DESCRIPTION:** The first semester of a year-long introduction to physics, the focus of which will be mechanics and thermodynamics, this course will emphasize both the conceptual understanding of physical phenomena and the tools of analytic problem solving.
- PREREQUISITES:** Facility with high school algebra and trigonometry.
- TEXTS:** *Physics: Principles with Applications*, 5th ed., Giancoli (Prentice-Hall 1998); *Faculty Pack*, UM Physics Faculty (2000).
- ONLINE:** Giancoli website: <http://www.prenhall.com/Giancoli>
Class website: <http://www.physics.umt.edu/phys122-1>
- HOMEWORK:** Plan to spend at least 10 hours on homework each week.
Roughly one chapter of reading and 15-20 problems will be assigned each week. One or two problems will be collected and perfunctorily graded each week. No late homework will be accepted. Working with others on homework is encouraged, but the work you turn in must be your own.
Solutions posted outside office, at Reserve Desk in library, and on class website.
- LABS:** One two-hour lab nearly each week (TR 11:10, TWR 1:10, R 3:10) in SC 225. 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"×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 at Reserve Desk and on class website.
Five in-class midterms (one card). Lowest midterm score dropped.
One two-hour, comprehensive final (six cards or one 8.5"×11" sheet).
Help sessions will be scheduled 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, see the instructor.

TENTATIVE SCHEDULE

Week	Ch.	Topic	Lab	Exams
9/5 - 9/8	1 2	Introduction 1-D Kinematics	No lab	
9/11 - 9/15	2 3	2-D Kinematics	No lab	
9/18 - 9/22	3 4	Dynamics	Determination of g	R 9/21 Ch. 1-3
9/25 - 9/29	4 5	Circular Motion	Force Table	
10/2 - 10/6	5 6	Work & Energy	Centripetal Force	
10/9 - 10/13	6 7	Linear Momentum	Hooke's Law	T 10/10 Ch. 4-6
10/16 - 10/20	7 8	Rotational Motion	Conservation of Linear Momentum	
10/23 - 10/27	8 9	Equilibrium	Ballistic Pendulum	F 10/27 Ch. 6-8
10/30 - 11/3	9 10	Fluids	Conservation of Angular Momentum	
11/6, 11/8-9	10 11	Vibrations and Waves	No lab	
11/13 - 11/17	11 12	Sound	Archimedes' Principle	F 11/17 Ch. 9-11
11/20 - 11/21	13	Temperature	No lab	
11/27 - 12/1	14	Heat	Standing Waves in Taut cords	
12/4 - 12/8	15	Thermodynamics	The Mechanical Equivalent of Heat	
12/11 - 12/15	15	Review	Make-up lab	T 12/12 Ch. 12-15
12/20	8:00-10:00 a.m.			FINAL

Subject coverage may vary, but exam dates are firm.

Reminder: September 25 is No Penalty Drop Deadline.