University of California, Santa Barbara
Department of Physics
Physics 2 - Spring 1995

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Lecture: Tuesday and Thursday, 11:00AM-12:15PM, Broida 1610

Office Hours: Wednesday 1:30-3:00PM, Monday 2:00-3:00PM, Broida 5123

Required Textbook: H.D. Young, Physics, Eighth Edition (Extended Version with Modern Physics).

Content: In Physics 2, we finish angular dynamics, then cover equilibrium and gravitation. Then, we jump to electricity, where we cover the concept of the electric field, the electric potential, capacitors, resistors, and DC Circuits. These topics correspond to Chapters 10-12 and 22-27 in your text.

Grading: Problem Sets, 20%; each of 2 midterms, 20%; Final, 40%. Grades will depend on the weighted total of the scores on problem sets and tests. The percentage of A's, B's, C's, etc, will be based on my assessment of the class performance. Midterm dates are **Thursday, April 27** and **Thursday, May 25**. The only way to make up for a missed midterm is to take the test in the other Physics 2 section; this may be only done if my signature is obtained at least 2 days in advance. The final will be **Tuesday, June 13** from **12noon-3PM**.

Problems: Problems will be assigned each Tuesday in lecture, (and posted *earlier* on the Web, and in the Physics 2 glass case opposite the elevators in the 2nd floor of Broida Hall) and are due **5PM Friday** of the same week. Late work will get 0 credit; in this course, it is better to turn in the work you have completed by the deadline then wait to turn in the finished problem set. Problem write-ups should be turned in to the boxes outside Broida 1610. Some will be graded, and returned by the following Tuesday. Solutions to the problems will be available the following Tuesday in the Reserve Book Room (RBR) at Davidson Library, and will be posted in the glass case on the 2nd floor of Broida. The problems assigned Tuesday, June 6 should **not** be turned in; the solutions will be available in the RBR Saturday, June 10. You won't succeed unless you make a good effort every week to do the problems; the tests will contain similar problems.

Working Together: You may work together on solving the problems, **but each of you must individually write up your solutions, using your own diagrams, equations, and words.** Copying another student's problem writeup is plagiarism, and would result in disciplinary action.

Discussion Sections: The discussion sections are where you can learn in a more intimate environment than the lecture. **They are mandatory.** Quizzes *may* be given in discussion section; these *may* count toward final grades.

Lecture Notes: The Associated Students Publication Service (ASPS) will provide lecture notes. They may not accurately and completely cover the material that will be on the tests. The notes are available at the ASPS office in the UCEN, their phone number is 893-4471 or 893-4715.

Help: The best place to get help in the course is your discussion section. The **Physics Study and Lecture Room** at 3302 Broida Hall, also called the **PLC**, has Physics teaching assistants available daily from 8:00 AM to 4:30 PM. Tutoring groups on TuTh 1:00-1:50PM and MW 11:00-11:50AM are available through the Campus Learning Assistant Service (CLAS) in Bldg. 477, phone 893-4248, 893-3269.

World Wide Web: A page for the course is at URL:

`http://charm.physics.ucsb.edu/people/hnn/physics_2.html`

Look there for announcements and problem set assignments.

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Syllabus - Physics 2 - Spring 1995

Week	#	Date	Pre-Lecture Reading	Topics
1	1	4/4	10-1 → 10-3 pp.256-268	Torque, Angular Acceleration, Rotation about Moving Axis
			1-10 pp. 22-24	Vector Cross Product
	2	4/6	10-4 → 10-7 pp.268-280	Work and power in rotations, Angular Momentum & its Conservation, Gyroscopes
2	3	4/11	11-1 → 11-4 pp.287-297	Equilibrium, Center of Gravity, Solving Equilibrium, Couples
	4	4/13	11-5 → 11-8 pp.297-307	Stresses and Strains, Elasticity, Plasticity
3	5	4/18	12-1 → 12-4 pp.315-326	Newton's Law of Gravitation, Weight, Field, Potential Energy
	6	4/20	12-5 pp.326-329	Satellite Motion
			12-9 pp.337-341	Black Holes
4	7	4/25	22-1 → 22-5 pp.605-619	Electric Charge, Conductors and Insulators, Conservation and Quantization, Coulomb's Law, Field and Force
	8	**4/27**	**First MIDTERM**	**Chapters 10-12**
5	9	5/2	22-6 → 22-9 pp.619-631	Field Calc., Lines, Dipoles, Maps
	10	5/4	23-1 → 23-4 pp.636-652	Gauss's Law, Flux, Charge on Conductors
6	11	5/9	24-1 → 24-3 pp.656-669	Electric Potental & Energy, Computation of Potentials, Equipotentials
	12	5/11	24-4 → 24-8 pp.669-681	Gradient, Oil Drop, Cathode Ray Tube, Equipotential Lines
7	13	5/16	25-1 → 25-4 pp.687-697	Capacitors, Calculation of Capacitance, Series and Parallel, Field Energy, Dielectrics
	14	5/18	25-5 → 25-7 pp.697-707	Dielectrics, Induced Charge, Gauss in Dielectrics
8	15	5/23	26-1 → 26-3 pp.712-722	Current, Resistivity, Resistance
	16	**5/25**	**Second MIDTERM**	**Chapters 22-25**
9	17	5/30	26-4 → 26-7 pp.722-736	EMF, Energy and Power in Circuits, Metallic Conduction, Physiological Currents
	18	6/1	27-1 → 27-2 pp.741-750	Resistors: series, parallel, Kirchoff's Rules
10	19	6/6	27-3 → 27-5 pp.750-762	Elecrical Measurement, RC Circuits, Power Distribution
	20	6/8		Review / Contingency
11	**21**	**6/13**	**FINAL 12-3pm 1610 Broida**	**Chapters 10-12,22-27**