

PHYS 2513 — UNIVERSITY PHYSICS I(SPR. 2007)

Professor	Fa-chung(Fred) Wang	Office Hours	MWF 11 AM to 1 PM, TR 2 to 4 PM
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CATALOG DESCRIPTION

Credit 3 semester hours. A calculus based general physics for science and engineering students, with topics to include measurement, vectors, statics, dynamics, mechanical energy, momentum, circular motion, and selected topics from torque, moduli, Newton's universal Gravitational law.

PRE-REQUISITE: MATH 1124;

TEXTBOOK: *Physics for Scientists & Engineers, 3rd Ed.*, by Douglas C. Giancoli, 3rd ed. 2000 (Prentice Hall)

COURSE GOALS: To learn fundamental concepts in the field of mechanics applicable to engineers and scientists

COURSE OUTCOMES: Upon completion of this course, students should be able to demonstrate;

- facility with the physics concepts in the field of mechanics as measured by problem solving on exams
- familiarity with scientific & quantitative methods of thinking
- ability to apply calculus in a real-world physical setting

COURSE POLICIES:

This course uses the lecture format. Selected material in each reading assignment will be covered in lecture. You should read the entire assigned chapter and work some of the problems before class. The lecture will not replace reading the material—the lecture will be to amplify and explain the material in the textbook. Homework problems will be assigned for each chapter covered. Quizzes may be given occasionally on covered material. It is expected that you will need to spend at least two hours studying outside the class for each hour spent in class. That means you should plan to devote a minimum of nine hours per week for this class. You should also be currently enrolled in a PHYS 2511 Laboratory.

HOMEWORK AND GRADING

There will be three regular examinations during the semester and a final. Examinations will consist of solving quantitative physics problems. All examinations are closed book and non-comprehensive. The use of calculators is permitted and encouraged. The Final will contribute about 38% of your final grade, and the three regular examinations combine will contribute about 50%. The remaining will be from attendance, quizzes and classroom discussion. Makeup examinations will be given ONLY for a university-approved absence.

The following minimum total scores will determine your grade: 80—A; 65—B; 50—C; 35—D; 0—F.

Oral and Written Communications

Oral or Written communication will be exercised through exams, classroom and individual discussion, and use of e-mails.

Attendance Policy:

Classes will start at the prescribed time and will end at the prescribed time. Class attendance is each student's individual responsibility. Excessive absences or tardiness may result in lowered grades. Excessive absenteeism, whether EXCUSED or UNEXCUSED, may result in a student's course grade being reduced or in assignment of a grade of "F". Absences are accumulated beginning with the first day of class. The University Undergraduate catalog (2002-2003, p.41) provides more detailed information.

Grading/Class Related Appeals (Refer to Undergraduate Catalog, 2002-2003, p.39)

COURSE OUTLINE

Week	Topic	Note
1 (Jan. 16 - 19)	Ch. 1: Introduction , Measurement, Estimating; Ch. 2: Describing Motion: Kinematics in One Dimension	Late Registration & Drop/Add Ends on Jan. 19 for Undergrad. & on Jan 20 for Graduate Students
2 (Jan. 22 – 26)	Ch. 2: (Continued)	
3 (Jan. 29 – Feb. 2)	Ch. 3: Kinematics in Two (& Three) Dimensions: Vectors	Jan. 31: Last Day to withdraw from course(s) without record. Feb. 1, withdrew from course(s) with record “W” begins
4 (Feb. 5 – 9)	Ch. 3: (Continued) Ch. 4: Dynamics: Newton’s Laws of Motion	
5 (Feb. 12 – 16)	Exam #1 (on Ch. 1-3) Ch. 4: (Continued)	
6 (Feb. 19 – 23)	Ch. 5: Newton’s Laws Applications: Friction, Uniform Circular Motion	
7 (Feb. 26 – Mar. 2)	Ch. 6: Gravitation and Newton’s Synthesis Ch. 7: Work and Energy: Kinetic Energy & Work-Energy Theorem	
8 (Mar. 5 – 9)	Exam #2 (on Ch. 4-6) Ch. 7: (Continued)	
10 (Mar. 19 – 23)	Ch. 8: Conservation of Energy: Potential Energy	Week 9, Mar. 12-16, is Spring Break. No class
11 (Mar. 26 – 30)	Ch. 9: Linear Momentum and Collisions: Systems of Particles; Conservation of Momentum	
12 (Apr. 2 - 6)	Ch. 10: Rotational Motion about a Fixed Axis Exam. 3 (on Ch. 7 – 9)	Withdrew from classes with record “W” Ends Apr. 2.
13 (Apr. 9 - 13)	Ch. 10: (Continued) Exam #3: (on Ch. 7-9)	
14 (Apr. 16 – 20)	Ch. 11: General Rotation	
15 (Apr. 23 – 27)	Ch. 12: Static Equilibrium	
16 (Apr.30 – May 4)	Review Days—M & T. Study Days—W & R Final Exam. May 4(Fri.) - ((Wed)	
17 (May 7 – 11)	Final Exam (on Ch. 8-12)	Common Final Exam on Mon. May 7, 4 - 6 PM