B. Grinstein DEPARTMENT OF PHYSICS WINTER 2003

Physics 2A

Physics — Mechanics

Mechanics is the pedestal on which all of physics and much of science is built. This course will introduce you to some key notions that pervade all of science. For example we will carefully define two types of energy (kinetic and potential) and then discuss conservation of energy, one of the most fundamental principles of science. Other key ideas include force, momentum and angular momentum. This calculus based course emphasizes deductive reasoning. The student is expected to learn to derive many results from few basic principles.

COURSE GOALS:
The student should:
-differentiate between reality and graphical or mathematical modeling of reality, and should understand the process of idealization of realistic situations;
-be able to identify which physical principles describe the behavior of a variety of physical situations, to formulate mathematical expressions that describe them, and use these to make precise quantitative statements about these situations;
-understand and be able to apply to realistic problems the basic notions of mechanics: force, mass, acceleration, momentum, energy, work, angular momentum, torque.

WEB:	http://physics.ucsd.edu/students/courses/winter2003/physics2aa/
INSTRUCTOR:	Benjamín Grinstein Office: Mayer Hall 5210 Phone: x45229 Web: http://einstein.ucsd.edu/ben e-mail: bgrinstein@ucsd.edu Office Hours: Thursdays 2PM – 3PM
COURSE COORDINATOR:	Patti Hey 118 Urey Hall Annex Phone: x21468
TEACHING ASSISTANT:	David Cooke email:dcooke@physics.ucsd.edu Office Hours: Wednesdays, pm TBA at where?

COURSE SCHEDULE:

Lectures	MW	8:00AM–8:50AM	WLH 2001
	T	8:00AM–8:50AM	PETER 108
Quizzes	F	8:00AM–8:50PM	WLH 2001
Discussion Sessions	WTh	various	WLH labs
Final Exam	Monday, March 17,	8:00AM–11:00AM	WLH 2001

TEXT:
Wolfson & Pasachoff, Physics for Scientists and Engineers, Third Edition, Addison-Wesley (ISBN 0-0321-3571-2)

ADDITIONAL REQUIRED MATERIALS:
Braun, Van Heuvelen & Wozny, Study Guide with *Activ***Physics 1**, Volume 1, to accompany Wolfson & Pasachoff, Physics for Scientists and Engineers, Addison-Wesley (ISBN 0-321-05148-3)

ADDITIONAL RECOMMENDED MATERIALS:
Ginsberg, Student Solutions Manual, to accompany Wolfson & Pasachoff, Physics for Scientists and Engineers, Addison-Wesley (ISBN 0-321-03575-5)

OTHER REFERENCES:
Fishbane, Gasiorowicz & Thornton, Physics for Scientists and Engineers, Second Edition, Prentice Hall (ISBN 0-13-231176-3)
Young & Freedman, Sears and Zemansky's University Physics, Tenth Edition, Addison-Wesley (ISBN 0-201-60322-5)
Halliday, Resnick & Walker, Fundamentals of Physics, Sixth Edition, Wiley

ACTIVPHYSICS: Required exercises from *ActivPhysics* are posted on the calendar on the web. They are due at the discussion session of the week in which they are posted. Credit is given for completing the work, regardless of accuracy. You can answer the exercises directly on the *ActivPhysics* workbook, or on a stapled set of xerox copies (if you plan to resell the book). Write down your name on the first page of the book or of the stapled copies. Thirty Macintosh PCs have been set up at CLICS with the software necessary to run *ActivPhysics*. You may, of course, run the program on your own PC.

You are encouraged to work through the non-required exercises in *ActivPhysics*. They are instructional. Besides, running the simulations can be fun. You are encouraged to work in small groups so as to discuss the problems loudly.

If your discussion session is on Wednesday you may bring the workbook for credit to any discussion sessions thursday.

HOMEWORK: A number of suggested problems are posted on the web. This 'homework' is not to be turned in and therefore, obviously, is not graded. However, answering the questions and solving the problems at the end of each chapter of the textbook will be extremely useful for understanding the material covered in lecture, and for doing well on the quizes and final exam. Solutions to all the odd numbered problems can be found in the Student Solutions Manual. All suggested problems are odd numbered. Additional worked examples can be found in the other references and solutions manuals that accompany them. **The importance of answering questions and solving problems cannot be overstated.**

QUIZZES: Weekly closed-book quizes will be given on Friday in accordance with attached course outline. Solutions will be posted on the course web site. Quizzes will be multiple choice.

1. Before or at the first quiz you will be assigned a code number. This number will be your code number for the session and will be used on each quiz thereafter in place of your name. **Save this number. Commit it to memory.**
2. You will have to provide your own scantron card, scantron form No. 20788-PAR. These are sold at the library for about $0.15 each. You will need a No.2 pencil to fill in the scantron card. **No scnatron card or no pencil, no credit for the quiz.** You should write your name, code number and course number, on the space provided. Detailed instructions will be given by the proctor at the first quiz.
3. You may bring a calculator to the quiz (but not a laptop computer). You may bring a cheat-card: must be a 5×7 (or 5×8, whatever the standard size is) handwritten card (you may use both sides). You should bring a couple of pieces of blank paper on which to work out the problems.
4. Recorded grades, listed by code number, will be available on the web.
5. Any appeal to the grading of quizes should be made in writing to a teaching assistant, within one week of the posting of the grades for that quiz. You must provide a written explanation as to why you are appealing the grade (be specific). Appeals sent to the course instructor will be ignored.
6. Your overall quiz grades will be computed by dropping the worst two quizes and will count 50% towards the final grade. Two of the quizes can therefore be used for absences without penalty. Therefore **there will be no make-up quizes.** If you anticipate missing more than two quizes due to unavoidable circumstances, you must discuss this with the instructor **beforehand.**

FINAL EXAM: The final exam will be on Monday, March 17, 8:00AM–11:00AM, at WLH 2001 unless otherwise announced. **It will not be possible to take the exam at any other time for any reason.** Any appeal to the grading of the final exam should be made in writing (email OK) to the instructor, within 24 hours of the posting of the grades. You must provide a written explanation as to why you are appealing the grade (be specific).

GRADING: *ActivPhysics* 10%, Quizzes 50% and Final Exam 40%. The worst two quiz grades are dropped. The best of this combined grade or the final exam by itself is the course grade. Grade is absolute (no curve). A: 91% – 100%, A-: 81% –90%, B+: 76% – 80%, B: 71% – 75%, B-: 66% – 70%, C+: 62% – 65%, C: 59% – 61%, C-: 55% – 58%. D and F are awarded after more individual scrutiny (so the lower end of the range for C may be extended downward). Final grade appeals must be made in writing (email OK) to the instructor, within 24 hours of the posting of the grades, and must provide a specific explanation for the appeal. *No appeals will be admitted beyond this deadline.*

WHOM TO SEE:
Kari Miller, 116 Urey Hall Annex, Physics Dept. Student Affairs Office, if you have any trouble using StudentLink/WebReg to add/change/drop, drop from wait-lists, have any questions about adding or dropping the course or to get appropriate authorization for such actions.
The *Teaching Assistant* or *Grader* if you have questions relating to problem solving methods or grades received. No re-grading for quizes written in pencil.
The *Instructor* if you have basic questions about the subject matter, or if you have administrative problems.

ACADEMIC DISHONESTY: Please read the *UCSD Policy on Integrity of Scholarship* on pages 62–64 of the 2002-03 General Catalog. These rules will be rigidly enforced. For all quizes/exams cheating includes: submitting another person's work as your own for grade consideration, any alteration for reconsideration, copying from another student, and the use of any unauthorized materials during the exam.

ADD/DROP PROCEDURE: Use StudentLink to add/change/drop, drop from wait-lists.
No add/drop cards will be signed by the instructor or TA.

Last day to:		
	Add classes	Friday, January 17, 2003
	Drop classes without "W" on transcript	Friday, January 31, 2003
	Change grading option or change units .	Friday, January 31, 2003
	Drop without penalty of "F"	Friday, March 7, 2003

Last revised: 1/7/03, 6:30PM