

## PHYSICS 307: CLASSICAL MECHANICS FALL 2007

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Office Hours: POSTED ON MY DOOR (I'm **not** available on MWF mornings ... prep time!)

### COURSE PHILOSOPHY:

Classical mechanics is the elegant analysis of extremely ordinary phenomena. Philosophers, mathematicians, and physicists developed the theories of mechanics over centuries of observation of the universe and increasing mathematical sophistication. Its study is not only a means for deepening your understanding of common phenomena and honing your math skills, but a means for constructing mental lenses that allow you to view the universe as physicists view it. To accomplish this, diagrams, notation, presentation of ideas, and methods of solution must conform to the conventions established over centuries of physical thought. There is certainly room for individuality in physics ... it's the only way science progresses ... but the point of this course is to increase your familiarity and comfort with the conventions of physics as a field and the way the physics community thinks.

### GRADING:

**HOMWORK:** Homework will be assigned at most class meetings and be due at the beginning of the next class. There are three different categories of homework that require different grading approaches:

**PROBLEM SOLVING:** **The Solution to a Physics Problem is an Essay about the Universe!** Hence the homework solutions must read as an application and explanation of ideas ... not an accountant's ledger. Each problem solution will be graded on a 10 - 20 point scale according to the following criteria:

- ✘ Statement of the problem.
- ✘ Appropriate diagram(s)
  - showing the situation or event(s),
  - labeled with symbols for the various physical quantities, and
  - the coordinate axes used.
- ✘ Statement of the general physical law to be used.
- ✘ **ALGEBRAIC** solution for the quantity of interest (**NO NUMBERS YET!**)
- ✘ Substitution of numbers and calculation (if appropriate).

**QUIZZES:** Short quizzes may be given at the beginning of class. Quizzes may not be made up.

**EXAMS:** The exams are intended to intensify your studying, encourage you to review, get you to step back for an overview of the material, and learn something new during the exam. See the syllabus for dates. Grading will be in the style described above. The total number of points available on an exam will vary.

**THE FINAL GRADE** will be a simple average of all of the above grades, according to the scale

4.0	3.75	3.5	3.25	3.0	2.75	2.5	2.25	2.0	1.75	1.5	1.25	1.0	0.0
>94%	91- 94	88-91	85-88	82-85	79-82	76-79	73-76	70-73	67-70	64-67	61-64	58-61	<58

with the instructor's subjective freedom for the treatment of borderline cases!