

PHY 9HA

Fall 2004

Dr Bill Ellis

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Instructor

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Web page

<http://www.physics.ucdavis.edu/Classes/Physics9HA/>

Please use this resource. It is your first port of call for course related information, i.e., supplementary lecture notes, homework questions & solutions, announcements and material to be covered for the mid-terms and final.

Lectures

MWF 11:00 – 11:50 PM, 55 Roessler

Text

Six Ideas That Shaped Physics: Units C & N, Thomas A. Moore, 2nd Edition, McGraw Hill, 2003

References

<http://www.physics.pomona.edu/sixideas/>

Assumed Knowledge

MAT 21A & B (B concurrently allowed)

Grading

The course is divided up into the following assessable parts

- Homework – 10%
- Mid-Term I Fri 29 Oct – 22.5% (40 min)
- Mid-Term II Fri 19 Nov – 22.5% (40 min)
- Final 1:30 – 3:30 PM Sat Dec 18 – 45%

**Laboratory/
Discussion
Section**

The laboratory/discussion section is a required part of the course. If you are not enrolled in a laboratory/discussion section already, enrol in person at the next meeting of a section that has room.

Grading is on a high pass, pass, low pass or fail scale. Failing the laboratory/discussion section means failing the course. Passing the

laboratory/discussion means your PHY 9HA grade is unaffected by your laboratory performance. High pass in the laboratory/discussion section increases your course grade by 1/3 of a grade point; low pass means your course grade is reduced by 1/3 of a grade point. Unsatisfactory reduces your course grade by one full grade point.

Please bring your lecture notes and any handouts to EACH laboratory/discussion section.

<http://www.physics.ucdavis.edu/Classes/9HALabHandouts/>

Homework

Homework is assigned each week. A list of problems and subsequent solutions can be found on the web page.

Due **MONDAY** at the **beginning** of class in the box provided at the front of the lecture theatre.

First homework will be due **MON 11 OCTOBER 2004**.

Late homework will **NOT** be accepted.

Make sure your homework is:

- **Stapled** together.
- Folded in half lengthwise with the front page inside with your **name, student ID#, course and assignment #** on the outside.

Homework will be returned the next week. Only a **selection** of the problems will be graded.

You are encouraged to write full solutions to the homework as practise for writing solutions to exam problems. A full written solution to a problem is one that you could give to anyone in the class and they would understand it. It includes the stating and application of physical law(s). Don't be afraid to write a few sentences of English to explain your steps. **Explain what you are doing and why you are doing it.**

I encourage people to work together on the problems but please write up your **OWN** work.

Exams

Mid-terms and final are an opportunity to demonstrate **YOUR** understanding of the material covered in lecture, textbook, homework, laboratory/discussion section. They will be in class, closed book and **WITH CALCULATORS**. I will provide a formula sheet for the mid-terms and final. A copy of which will be displayed on the web page before the exam.

In general, there will be **NO** makeup exams. If you miss an exam for a good (documented) reason then we will discuss a new grading scheme for you. If possible, please advise me before the exam if you plan to miss an exam.

Regrades

Mid-terms will be returned in laboratory/discussion section as soon as possible after the exam. Please download the solutions from the web page and bring them along to discussion section. You will have a few minutes to look over the exam, first checking for addition errors and then grading errors. If you feel a mistake has been made in either then on a **SEPARATE** piece of paper (**NOT** on the exam) write why you feel a mistake has been made in grading your paper. You should clearly state which question(s) is(are) in dispute. The TA will then collect any regrade papers (along with your separate sheet attached) at the end of the 5 or so review minutes. This is your **ONLY** opportunity for regrade so please check carefully. Any regraded paper will be returned approximately a week later. Please note that the **WHOLE** question(s) is(are) regraded. Your score can do **DOWN**.

Syllabus

Please allow for slight changes in this syllabus.

Wk Beg	Mon 11:00 – 11:50 AM	Wed 11:00 – 11:50 AM	Fri 11:00 – 11:50 AM
Sep 27			C1 Intro to Interactions C2 Vectors
Oct 4	C2 Vectors (cont.) C3 Interactions transfer Momentum	C3 Interactions transfer Momentum (cont.)	C4 Particles and Systems
Oct 11	C5 Applying Momentum Conservation	C6 Intro to Energy	C7 Some Potential Energy Functions
Oct 18	C8 Force and Energy	C9 Rotational Energy	C10 Thermal Energy C11 Energy in Bonds
Oct 25	C12 Power, Collisions and Impacts	C13 Angular Momentum	MIDTERM I (40 min)
Nov 1	C13 Angular Momentum (cont.) C14 Conservation of Angular Momentum	C14 Conservation of Angular Momentum (cont.)	N1 Newton's Laws
Nov 8	N2 Vector Calculus N3 Forces from Motion N4 Motion from Forces	N6 Linearly Constrained Motion	N5 Statics
Nov 15	N5 Statics (cont.)	N7 Coupled Objects	MIDTERM II (40 min)
Nov 22	N7 Coupled Objects (cont.) N8 Circularly Constrained Motion	NO LECTURE	THANKSGIVING
Nov 29	N8 Circularly Constrained Motion (cont.)	N9 Non-inertial Reference Frames	N10 Projectile Motion
Dec 6	N11 Oscillatory Motion	N12 Intro to Orbits	N13 Planetary Motion

I hope you enjoy the course. If you have any queries please don't hesitate to contact me. Remember the web page is your first port of call for course information.