

Physics 121  
Spring 2003  
Dr. Dragt

Course Syllabus  
28 January 2003

Room 3124  
301-405-6053  
dragt@physics.umd.edu

Title: Fundamentals of Physics I (PHYS 121)

Web Site: <http://www.physics.umd.edu/courses/Phys121/>

Lecture: Tu 11:00 AM – 12:15 PM, Rm. PHY-1410  
Th 11:00 AM – 12:15 PM, Rm. PHYS-1410

<u>Section</u>	<u>Discussion</u>	<u>Laboratory</u>	<u>TA's (Discussion/Lab)</u>
0101	Th 8:00 AM PHY 0405	Th 9:00 AM PHY 3306	Hock-Seng Goh/Ram Sriharsha
0102	Tu 8:00 AM PHY 0405	Tu 9:00 AM PHY 3306	Nicholas Setzer/Ram Sriharsha
0103	Th 1:00 PM PHY 1219	Th 2:00 PM PHY 3306	Hock-Seng Goh/Buckley Hopper
0104	M 12:00 PM PHY 1219	M 1:00 PM PHY 3306	Nicholas Setzer/Buckley Hopper
0105	W 11:00 AM PHY 4220	W 12:00 PM PHY 3306	Hock-Seng Goh/Sejin Han
0106	M 8:00 AM PHY 1402	M 9:00 AM PHY 3306	Nicholas Setzer/Ardeshir Eftekhazadeh

#### Office Hours

<u>Name</u>	<u>Email</u>	<u>Phone</u>	<u>Place</u>	<u>Time*</u>
Dr. Alex Dragt	dragt@physics.umd.edu	405-6053	PHY-3124	After lecture
Dr. Wendell Hill	wth@ipst.umd.edu	405-4813	IPST 2120	
Ardeshir Eftekhazadeh	eftekar@wam.umd.edu	405-6194	PHY 3103	
Hock-Seng Goh	hsgoh@glue.umd.edu	405-7279	PHY 4221	M 11-12PM, F 1-2PM
Sejin Han	sejinh@glue.umd.edu	405-6189	PHY 3103BM	1-2 PM, W 2-3 PM
Buckley Hopper	hopperb@physics.umd.edu	405-6073	PHY 4219	Th 1-2PM
Nicholas Setzer	nsetzer@physics.umd.edu	405-6192	PHY 4223	M 10-11AM, W 2-3PM
Ram Sriharsha	harsha@glue.umd.edu	405-6192	PHY 4223	TH 11 AM-1 PM

\*You may also meet your instructor or TA by appointment.

You may also meet with any other Phys 121 TAs as shown on the attached schedule.

Text: PHYSICS, J. Cutnell & K. Johnson, Fifth Ed., (J. Wiley & Sons, Inc., 2002).  
Physics 121 Laboratory Manual (2003 edition)

The publisher of your textbook has also established a web site for students using this text. It is located at <http://www.wiley.com/college/cutnell>. It has a physics glossary, some multiple choice questions to test your understanding, and other features.

Occasionally, reading the same material in a different book facilitates comprehension. You may find the following supplementary texts helpful. They will be on reserve in the Engineering and Physical Sciences Library (EPSL). Ask for them under the lecturer's name CHANT, DRAGT, BHAGAT.

Gary L. Buckwalter and David M. Riban, COLLEGE PHYSICS (QC21.2.B814, 1987)  
Paul A. Tipler, COLLEGE PHYSICS (QC21.2.T546, 1987)  
Hans Breuer, PHYSICS FOR LIFE SCIENCE STUDENTS (QC23.B817)  
Serway and Faughn, COLLEGE PHYSICS (QC21.2.S378)

## Homework:

Weekly problem sets are given on the attached schedule. The homework will be collected and one of the problems (to be selected at random) will be graded on a scale of 0 to 10. The remaining problems will be graded qualitatively on a scale of 0 to 2 (i.e. 0 = no valid attempt, 1 = valid attempt, 2 = correct or nearly so). The eight highest homework scores will be used in computing your grade. The remaining 4 (out of 12) will be dropped.

Homework is due and will be collected in class on Tuesday of the week indicated. Therefore, you should start on each homework assignment the week before. Please staple papers and write your **name, discussion section, and date due**.

**You are strongly urged to do the homework.** It is an essential part of the course. Learning physics is like learning to play the piano: practice, practice, practice. You cannot learn by watching. Experience shows that people who do not do the homework fail the course. The hour exams will test your ability to solve problems of the type given in the homework. **You have not learned the material if you cannot do the problems.** You are encouraged to discuss the problems among yourselves, to work together, and to ask questions about problems you cannot do.

## Tests:

- a) There will be three (3) regular hourly exams as noted on the attached schedule. **You must take two of them to pass the course.** If you wish, you may take all three. In that case, your lowest score will be discarded. In general, unless there are very unusual circumstances (e.g. major illness), there will be no other make-up exams. All exams are closed book. If the University closes because of snow on a scheduled exam day, or if the exam is disrupted, or must be cancelled for any other reason, then it will be given during the next scheduled lecture period.
- b) In accord with the Official Final Examination Schedule, the final exam date for Physics 121 is Friday, May 16, from 8:00 - 10:00 AM. **You must take the final exam to pass the course.**
- c) At the beginning of each exam you be required to sign the following Honor Pledge: "I pledge on my honor that I have not given or received any unauthorized assistance on this examination." Academic dishonesty is a serious offense which may result in suspension or expulsion from the university. In addition to any other action taken, the normal sanction is a grade of "XF", denoting "failure due to academic dishonesty", and will normally be recorded on the transcript of the offending student.
- d) Valid excuses: If you have a valid excuse for missing an exam or homework, see me to arrange what to do about it, **before-hand if at all possible.** After the fact excuses will require validation and may not be acceptable. (Wanting to leave early before a holiday is NOT a valid excuse.) You must speak to me. Your TA does not have the authority to excuse you from any required class activity.

## Solutions:

Solutions for homework and exams will be posted on the Web and outside the lecture halls. They will also be available on reserve in the Engineering and Physical Sciences Library (EPSL) under the name DRAGT/CHANT. In case of difficulty with HW problems consult the *Physics - Student Study Guide* by J. Cutnell & K. Johnson, available in EPS Library Course Reserve, together with HW solutions.

Note: The answers at the back of the book and in the Student Study Guide are sometimes wrong.

### Extra Copies:

Extra copies of all material handed out in class will be available in a box outside the instructor's office door, PHY-3124. Materials are handed out in class only once. If you are not there, it is your responsibility to get a copy from the box.

### Grade Records:

All Homework, Lab, and Exam scores will be posted by Buckley number outside my office door. With your permission, a Buckley number (named in honor of the author of the Buckley Amendment concerning student privacy rights and adopted by the U.S. Congress and Senate) will be assigned to you. You should check from time to time to make sure your scores correct. Keep all your old Homework, Labs, and Exams as evidence of your scores.

Laboratory: (Web address <http://physics.umd.edu/courses/Phys121/wth/Spring2003/>)

Ten experiments are scheduled. **All must be done. You may work together in labs, but your reports must be your own.** To assure the efficient use of limited time, it is essential to study the laboratory manual **beforehand**. Each lab is worth 20 points. In addition, you will receive two extra bonus points for handing in a correct prelab, when one is called for, at the **beginning** of the lab period. Thus, on most labs, it is possible to get 22 points. It should be possible to finish your lab report by the end of the lab period in most cases. Lab reports are due one week after the laboratory. Unless you make special provisions with the TA, late lab reports will receive no credit. However, all labs must be handed in. **If you do not hand in all lab reports, you will fail the course.** Prof. W. Hill is in charge of the laboratories.

Experiments should be done at the regularly scheduled time. The make-up periods are only for experiments that you missed because of special and pressing circumstances. Two make-up Lab sessions have been scheduled. The first session is for labs 1 through 5 and the second is for labs 6 through 10. You can make up a lab during **any** of the regularly scheduled Physics 121 laboratory sessions during those weeks. TAs and lab technicians will be available to assist you at these times.

### Electronic Calculators:

You are required to do calculations during exams, quizzes, labs, and on homework with a scientific calculator that includes the following functions: trig, log, exponential, and arbitrary roots and powers.

### Grading System:

a)	exams (best 2 of 3, 2 required)	30%
b)	final exam (required)	30%
c)	homework (best 8 of 12)	15%
d)	lab reports (all required)	25%

There will be the following approximate relation between total scores (computed as above) and letter grades:

<u>Total Score</u>	<u>Letter Grade</u>
90 and above	A
80-89	B
70-79	C
60-69	D
below 60	F

### Extra Help:

Physics is a difficult subject. You should not hesitate to look for extra help if you have great difficulty in doing the homework problems, or in following the book or the lectures. Beyond consulting with your fellow students, there are several avenues of help open.

- a) The Instructor will be available after each lecture period to answer questions. Appointments can be made at that time for more extended visits, or call 301-405-6053, or send email to [dragt@physics.umd.edu](mailto:dragt@physics.umd.edu) to make an appointment. You are encouraged to ask for help at the first sign that you're having trouble.
- b) The Teaching Assistants are also available during their regular office hours, and by appointment. See the attached schedule.
- c) The Slawsky Clinic in room 1214 (see attached memo) offers extensive free tutoring services. The clinic staff consists of retired professional physicists, who have a great deal of experience in helping students improve their problem solving skills.