PHYS161 - General Physics: Mechanics and Particle Dynamics

Spring Semester, 2016

Course description: General Physics: First semester of a three-semester calculus-based general physics course. Laws of motion, force, and energy; principles of mechanics, collisions, linear momentum, rotation, gravitation, simple harmonic motion, and fluids.

Pre-requisite MATH 140

Co-requisite: MATH 141

Instructor

David C Buehrle
1330 Physics Building
x5-6045
dbuehrle@umd.edu;
Office hours: Thursdays 9:00 - 11:00 AM.

Lecture **SECTIONS 0101-0110: TuTh 2:00 – 3:15PM, Toll Physics Building Room 1412 (Large Lecture Hall)**
SECTIONS 0301-0309: MWF 2:00 – 2:50PM, Toll Physics Building Room 1412 (Large Lecture Hall)

Discussion Sections Discussion sections will be conducted by the Teaching Assistant, and are a forum where students can ask questions about the course material, where you will take your quizzes, and where problems will be worked out with student participation.

Section	TA		Day	Time	Room
0101	Josue Morales Cifuentes jmorale4@umd.edu	PHY 3307 x5 0409	M	9:00AM-9:50AM	PHY 1219
0102	Arber Masati amasati@umd.edu	PHY 0220 x5 5969	W	4:00PM-4:50PM	MTH 0105
0103	Josue Morales Cifuentes jmorale4@umd.edu	PHY 3307 x5 0409	F	9:00AM-9:50AM	PHY 0405
0104	Josue Morales Cifuentes jmorale4@umd.edu	PHY 3307 x5 0409	F	10:00AM-11:50AM	PHY 1204
0105	Yuewen Tan ytan@terpmail.umd.edu		M	9:00AM-9:50AM	PHY 1204
0106	William Bunting wbunting@umd.edu	PSC 3264 x5 5982	M	3:00PM-3:50PM	MTH 0304
0107	William Bunting wbunting@umd.edu	PSC 3264 x5 5982	M	4:00PM-4:50PM	MTH 0101

0108	Arber Masati amasati@umd.edu	PHY 0220 x5 5969	W	4:00PM-4:50PM	PHY 1219
0109	Arber Masati amasati@umd.edu	PHY 0220 x5 5969	M	4:00PM-4:50PM	PHY 1219
0110	Theodore Mefford tmefford@umd.edu	PHY 3101 x5 6191	M	3:00PM-3:50PM	PHY 1219
0301	Min-A Cho mina19@umd.edu	PSC 2122 x5 6189	Tu	3:00PM-3:50PM	PHY 0405
0302	Min-A Cho mina19@umd.edu	PSC 2122 x5 6189	Tu	4:00PM-4:50PM	PHY 1204
0303	Min-A Cho mina19@umd.edu	PSC 2122 x5 6189	Th	4:00PM-4:50PM	PHY 1219
0304	Theodore Mefford tmefford@umd.edu	PHY 3101 x5 6191	F	10:00AM-10:50AM	MTH 0101
0305	Theodore Mefford tmefford@umd.edu	PHY 3101 x5 6191	F	11:00AM-11:50AM	EGR 2154
0306	Theodore Mefford tmefford@umd.edu	PHY 3101 x5 6191	F	11:00AM-11:50AM	PHY 1204
0307	Steven McNamara smcnama1@terpmail.umd.edu		Th	3:00PM-3:50PM	CHM 0122
0308	Theodore Mefford tmefford@umd.edu	PHY 3101 x5 6191	Tu	4:00PM-4:50PM	MTH 0103
0309	Steven McNamara smcnama1@terpmail.umd.edu		Th	4:00PM-4:50PM	PHY 1204

Textbook

Required: **Physics for Scientists and Engineers** Volume 1, **Third edition**, by Randall D. Knight (Addison Wesley). Although your homework will be assigned on line through Mastering Physics from the third edition of Randall Knight, please note that insofar as the course material is concerned there is very little of any difference between the 2nd edition and the 3rd edition in regard to Vol. 1. There are significant differences in other volumes but not that of Vol. 1. Therefore, if you were to purchase a used 2nd edition of volume 1 you would not be missing out on anything important – the only difference would be that the assigned HW numbers from the 3rd edition on the Mastering Physics probably would not coincide with the HW problems from the second edition.

Lectures

Students are required to attend lectures, where announcements will be given, exams will be announced and administered, and the course material will be presented.

Preparation

Not all material will be directly covered in lectures. Students are responsible for reading and understanding all material in assigned chapters, whether or not this material is explicitly treated in the lectures.

Lab

No lab component in PHYS161

Homework

Homework will be done through Mastering Physics. ***You must submit your answers for the homework problems over the internet using the Mastering Physics web site (see below)***.

There are several advantages to electronic homework submission:
(1) You will know right away if your answer is right or wrong
(2) If you give a wrong answer, you can go back and try again to see if you can get the correct solution. You will be allowed 6 attempts for each question, so don't waste them.
(3) You are graded only on your final answers and get your score when you are done.
(4) The site also has a tutorial capability that you may find helpful.
Note that the software may randomize the numbers each time you make a new attempt on a problem, so be careful and remember that other students working on exactly the same problems are likely to have different numbers. The best way to do physics problems is first to work out carefully a general analytical solution to the problem and then plug in the numbers at the end. This is especially true if the numbers are being randomized each time so everyone has different numbers.

Why You Need to do the Homework: One of the main ways you can understand Physics is by doing the homework. Do not wait until the night before it's due to start working on your homework. The homework can be expected to be difficult and it counts a lot towards your final grade in enabling you to succeed on your exams. A sure way to get an F in this course is to not do the homework or not give yourself enough time to work on it.

Getting started in electronic homework submission: To turn in your homework, you need to go to:
http://www.masteringphysics.com/
The site is best accessed with a current version of Windows Explorer or Firefox. If you run into problems, check the system requirements. In the past, there have been major trouble issues working Mastering in Physics through Google Chrome so don't try using Google Chrome.
Registering and Gaining Access to Mastering Physics: In order to turn in your homework, you will need to register at the Mastering Physics website http://www.masteringphysics.com/. To register, you need two things - an access number and the class ID. **When you buy (new or used copy of) your textbook you will need to purchase a Mastering Physics access key number. The easy way to do this is to simply buy it on line from the above MP website.**

Your class ID is: PHYS161BUEHRLES2016

Exams

There will be two mid-term exams and a one 2 Hr. Final exam. You must take the Final exam in order to pass PHYS161.

All exams are closed book and closed note exams. For each exam, you may have one "cheat sheet" that contains physical constants and formulas. You may also have a calculator

Excuses

Missing an exam is not allowed without a valid documented excuse as defined by the University (medical problem, religious holiday, or serious family crisis). In all cases, a makeup exam must be completed in a reasonable amount of time or you will receive a score of zero for the exam. The makeup test or assignment, and the due date, must be arranged by consulting with Professor Buehrle as soon as possible after it becomes apparent that an exam date will be missed. Turning in late homework is not encouraged as it will result in a reduction of 10% of the points for every day late. If you are going to miss an assignment because of a religious holiday, it is your responsibility to inform the instructor in advance so that suitable arrangements can be made.

Final Grade

The final grade will be based on the components with the following weights:

Two mid-term exams: 2 x 20% = 40 %
Comprehensive Final Exam = 40 %
Homework and Quizzes = 20 %

The final grade will be set at the end of the semester after all work is completed. In assigning the final grade, I will be guided by the University of Maryland grading policy, quoted below:

- A+, A, A- denotes excellent mastery of the subject and outstanding scholarship. (90-100)
- B+, B, B- denotes good mastery of the subject and good scholarship. (80-90)
- C+, C, C- denotes acceptable mastery of the subject and the usual achievement expected. (70-79)
- D+, D, D- denotes borderline understanding of the subject. It denotes marginal performance, and it does not represent satisfactory progress toward a degree. (60-70)
- F denotes failure to understand the subject and unsatisfactory performance. (< 60)

Students with disabilities

Students with disabilities should meet with the instructor at the beginning of the semester so that appropriate arrangements can be made to accommodate the student's needs.

University Closure

In the event of a University Closure the department will do its best to accommodate students by scheduling make-up sessions or revision of the lab schedule.

Academic Integrity

All students will be expected to comply with the University of Maryland's academic integrity policies, including the code of academic integrity and the honor pledge. Failure to comply will result in a failing grade and will be reported to the Honor Council.