Physics 161 General Physics: Mechanics and Particle Dynamics
Fall, 2008
Professor Wolfgang Losert

**** Final exam time:** Tuesday Dec 16, from 6:30 to 8:30 PM

Syllabus

First semester of a three-semester calculus-based general physics course. Laws of motion, force, and energy; principles of mechanics, collisions, linear momentum, rotation, and gravitation.
Pre- or corequisite: MATH141.

Professor: Wolfgang Losert, wlosert@umd.edu 3359 AV Williams Bldg, 301-405-0629
Office hours: - 12.30 pm-1.30pm Tuesday; 2pm - 3pm Thursday
- email / call to make an appointment at other times.

This course covers basic physical principles in the fields of mechanics. "Understanding" physical principles will require a combination of knowledge of equations (e.g. Newton's Laws), and experience (through lots of practice in homeworks and discussion sections) in how to apply them to real world problems.

Lecture Tu.Th *11:00am-12:15pm* (PHY 1410), Physics Building

Discussion with Teaching Assistants (TA) (starting 9/2!):

0201 Th..... 8:00am- 8:50am (PHY 0405) Dis
0202 Tu..... 2:00pm- 2:50pm (PHY 1402) Dis
0203 W..... 3:00pm- 3:50pm (PHY 1219) Dis
0204 W..... 4:00pm- 4:50pm (MTH 0105) Dis

TA : Amir Najmi anajmi1@umd.edu

Required course materials:

1) Textbook: Knight: Physics for Scientists and Engineers, Volume 1, **Second Edition** ISBN: 978-0-3-2151671-8

2) Mastering Physics Access Card (valid for 2 years and all volumes of Knight, i.e. you should only need to buy this once for the three semester physics sequence) ISBN: 978-0-3-2151639-8

NOTE: if you buy a used book you need to separately purchase access to "Mastering Physics" the online homework webservice. You can buy access e.g. from www.mypearsonstore.com

We will NOT need the workbook, though the bookstore sells a bundle that includes the student workbook.

3) RESPONSE CARD RADIO FREQUENCY KEYPADS (RF clickers)

- see clickers.umd.edu for more information on buying and registering your clicker. You will be able to use the same clicker in several other classes as well. ** We use RF clickers ****

ONLINE Lecture Materials and grades: http://www.elms.umd.edu (access with your University password, already set up)

ONLINE Homework: Mastering Physics http://www.masteringphysics.com/
Mastering Physics Course ID: **LOSERTPHYS161F2008 (use your university ID as your identification # when you register)**

Grading

Homework	**30%**
2 Midterm Exams:	**30%**
Quizzes and class participation	**15%**
Final Exam	**25% **Must take the final to pass the class**

Homework (consists of TWO parts)

1) Weekly web based homework assignments using Mastering Physics **due Tuesday at 10.50 am starting September 8.**

2) Written step by step solutions to ONE of the problems at the beginning of class (the goal is to practice writing out the solution to a problem step by step, including the equation steps, and written explanations for each step.
Homework is extremely important as it will help you understand how to apply the equations and concepts covered in class. It is extremely difficult to do well in this course without carefully doing the homework. Giving explanations for your steps is also extremely important. In exams, I will give partial credit for correct explanations, even if the math is incorrect.

Quizzes/class participation

You will need to complete a short quiz at the start of some lectures. Class participation will be judged based on the number of clicker questions you answer during lecture (you will not be judged on whether you answer the questions correctly. *If you*

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Midterm Exams

There will be two 75 minute in class midterm exams, ***tentatively*** scheduled for: **Tuesday, October 7 and Thursday November 13** These exams will have questions similar to the homework and quizzes. Each counts 15% toward your course grade.

Final Exams

There will be a 2 hour final exam. The final exam is cumulative. It is scheduled for **Tuesday Dec 16, from 6:30 to 8:30 PM**

Discussion

You must attend the discussion section to which you are assigned. Your TA will cover material that may not be covered elsewhere. Please come prepared and ask lots of questions, i.e. read the chapters, review your lecture notes, and try the homework problems. Remember, the TA is there to help you when you are stuck, not to dole out answers. You should also remember that your TA is also a student, in this case a graduate student, and also has to take classes, do homework and teach other sections.

Tutoring

It is very important not to fall behind in this class, since each chapter builds on all previous chapters! If you fall behind—or if you want to avoid falling behind, please come to the office hours of your TA or to my office hours. You can also use a free tutoring service in the Physics Department: the Slawsky Clinic. It is run by a group of retired senior physicists. It is located in Room 1214 in the Physics building. The time reserved for PHYS161 is Mon-Fri 11-12, and 2-3. . However, you can usually get help at any time they are open, from10 AM until 3 PM. See http://www.physics.umd.edu/academics/ugrad/slawsky.html

Honor Code

The University of Maryland, College Park has a nationally recognized Code of Academic Integrity, administered by the Student Honor Council. This Code sets standards for academic integrity at Maryland for all undergraduate and graduate students. As a student you are responsible for upholding these standards for this course. It is very important for you to be aware of the consequences of cheating, fabrication, facilitation, and plagiarism. For more information on the Code of Academic Integrity or the Student Honor Council, please visit http://www.shc.umd.edu.
To further exhibit your commitment to academic integrity, remember to sign the Honor Pledge on all examinations and assignments: "I pledge on my honor that I have not given or received any unauthorized assistance on this examination (assignment)."

Tentative Schedule as of 8/31/2008

Week	Lecture #	Dates	Main Topics	Chapter in Knight
1	1,2	Sept 2,4	Concepts of Motion, Units, and Dimensions	Chapter 1
2	3,4	Sept 9,11	1-D Motion and Vectors	Chapters 2, 3
3	5, 6,	Sept 16,18	2-D Kinematics and Dynamics	Chapter 4
4	7,8	Sept 23,25	Force and Motion	Chapter 5
5	9,10	Sept 30,Oct 2	Motion along a line	Chapter 6
6	**11**	**Tuesday, October 7**	**Exam I**	**Chapters 1-6**
6	12	Oct 9	Newtons third law	Chapter 7
7	13,14	Oct 14,16	Newton's 3rd law and 2D motion	Chapter 7
8	15,16	Oct 21,23	2D motion	Chapter 8
9	17,18	Oct 28,30	Impulse and Momentum	Chapter 9
10	19,20	Nov 4,6	Energy	Chapter 10
11	21	Nov 11	Review	
11	**22**	**Nov 13**	**Exam 2**	**Chapters 7-10**
12	23,24	Nov 18,20	Work	Chapter 11
13	25	Nov 25	Rotation Rigid Body	Chapter 13
14	26,27	Dec 2,3	Gravity	Chapter 12
15	28,29	Dec 9,11	Review	
16		**Tuesday Dec 16, 6:30 to 8:30 PM**	**Final EXAM**	**Chapter 1-13**