University of Maryland
Department of Physics
Physics 260 – Fall 2014
"General Physics: Vibration, Waves, Heat, Electricity and Magnetism"
Lecture Date and Time: M 7:00 – 8:50 PM, W 7:00 – 7:50 PM
Lecture Room: 1410 Physics Building

Instructor: **Dr. Hailu Gebremariam** **email:** **hailu@umd.edu**
Office: **3107 Physics Building** **Phone:** **x5-6204**

Office Hours: **MW 6:00 – 7:00 PM**

Discussion schedule:

Section	Date and Time	Room	TA
0401	W 8:00 – 8:50 AM	0405	Hui, King Lam: Office – 0104 Phys. Bldg. Email: huikinglam@hotmail.com
0402	W 6:00 – 6:50 PM	1219	Hui, King Lam: Office – 0104 Phys. Bldg. Email: huikinglam@hotmail.com
0403	M 6:00 – 6:50 PM	1219	Hui, King Lam: Office – 0104 Phys. Bldg. Email: huikinglam@hotmail.com

Lab sections: You must enroll in Physics 261 and complete all the labs in order to pass Physics 260.

Textbook: ***Physics for Scientists and Engineers with Modern Physics byRandall D. Knight (Addison Wesley), Volumes 1, 2, 3 and 4, third edition.***

- If you buy a new textbook, you must get it with an access number to a Materingphysics.com.
- If you buy a used copy, you will need to also purchase an access number which you can do on-line or at the bookstore.

MasteringPhysics.com will be used to assign and collect most of the Homeworks.
Note that we will be using material in four different volumes!

Recommended Textbooks: There are many good physics books that cover much the same material as Knight. When you are having trouble understanding something in Knight, you may find it helpful to look elsewhere. Recommended texts include:

1) Physics for Scientists and Engineers, Volumes 1 and 2, 6th Edition, by Raymond A. Serway and John W. Jewett, Jr., 6th edition, Thomson.
2) Physics by Paul A. Tipler, 3rd edition,
3) Fundamentals of Physics by David Halliday, Robert Resnick, and Jearl Walker, 7th edition, Wiley.

There are also earlier editions of these and other calculus-based physics textbooks printed in the last 20 years that contain much the same material. They often can be purchased quite inexpensively on the web or at local used book stores or found in the Engineering and Physical Sciences Library.

Official Course Description:
Prerequisite: MATH141 and PHYS161.
Corequisite: PHYS261.
Credit only granted for: PHYS142, (PHYS260 and PHYS261), or PHYS272.

Second semester of a three-semester calculus-based general physics course. Vibrations, waves, fluids; heat, kinetic theory, and thermodynamics; electrostatics, circuits, and magnetism. PHYS260 and PHYS261 must be taken in the same semester and the grade for the courses will be combined into a single grade for both. To pass, students must complete passing work in both PHYS260 and PHYS261.
If purchasing used books additional software may be required.

Homework: Homeworks will be assigned electronically on Masteringphysics.com. ***You must answer all the problems on the site.*** The first time you log on to masteringphysics.com you will need to enter the course id, which is **"MPGEBPHYS260FALL2014"**. The due date for the problems on Mastering physics.com will be chosen when we complete a chapter(s) needed for the particular assignment. **Late homework will NOT be accepted**. Homework on Masteringphysics will be graded by the computer.

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 5 attempts for each question, so don't waste them.***
3) You are graded only on your final answers and you will know your score when you are done.
4) The site also has a tutorial capability that you may find helpful.

Note that the software will 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 will have other numbers! The best way to do physics problems is first to work out carefully a general solution 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.

Quizzes: In order to test your progress and to encourage attendance quizzes will be given on Mondays in the lecture period.

Exams: Two midterm exams and one final exam will be given. In computing your grade, ALL midterm exams will be counted. You must take the final exam to pass the course. All exams will be closed book. One cheat (formula) sheet will be allowed for each midterm exam. Calculators are allowed during exams, but you are not allowed to use any device with phone, photo, web, messaging or text display capabilities during an exam. If you cannot attend an exam at the scheduled time, see the Professor before the exam! If you miss an exam with a ***valid excuse***, a makeup exam will be given and it is your responsibility to arrange this in a timely fashion with the instructor. Students are responsible for all material, including that covered in assigned reading, lectures and homework. Material from any part of the course can appear on a test, quiz or homework, whether or not it was covered in the lectures.

Midterm exams: **Monday October 06, Monday November 03.**

Final exam: **Tuesday, December 16, 2014, 6:30 – 8:30 PM**

Grading:

Homework – 15 %
Quizzes – 10 %
Midterm exams (15% each) – 30 %
Final Exam – 20 %
Lab – 25%(if all labs completed, F otherwise)

At the end of the semester all Lab, exam, quiz and homework grades will be added with the above weighting and a final letter grade will be assigned depending on the distribution of total scores.

***Important Notes**:

1) YOU MUST BE ENROLLED AND COMPLETE ALL THE LABS IN PHYSICS 261 IN ORDER TO PASS PHYSICS 260. There are no exceptions. Students who do not complete all of the experiments in physics 261 will automatically get an F in both Physics 260 and Physics 261. Don't believe anyone who tells you differently.
2) You must take the Final exam in order to pass the course.
3) No homework or exam scores will be dropped. Missing a homework assignment or exam will not be allowed without a valid documented excuse (medical problem, religious holiday, or serious family crisis). In all cases, the assignment or makeup exam will need to be completed in a reasonable amount of time to get credit. The new due date and assignment must be arranged by consulting with Dr. Hailu Gebremariam as soon as possible after it becomes apparent that there will be a problem. If you are going to miss an exam or assignment because of a religious holiday, it is your responsibility to inform the instructor of any intended absences for religious observances in advance, so that suitable arrangements can be made.

Discussion Sections: You must attend your discussion section and you must go to the section you have been assigned. Your TA will cover material (homework and exams) that may not be covered elsewhere. Please come prepared so you can ask questions, *i.e.* read the assigned chapter and work on the homework problems. Remember, the TA is there to explain things and give help when you are stuck, not to dole out answers. Also, don't forget 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. TA's are still learning, are very busy, and are not highly paid for all their effort. Please be respectful and understanding and expect that they treat you with the same respect and understanding.

Help with understanding the material: Physics and engineering are cumulative: the knowledge learned at each stage builds upon previous knowledge. If you find that you are falling behind, seek help early on, rather than waiting until just before an exam. Help can be obtained by:

- Attending your discussion section.
- Visiting the Slawsky Clinic, Mon. – Fri., in room 1140 Physics Building.
- Going to the office hours of your instructor or TA.
- The Learning Assistance Service (2201 Schoemaker Bldg., 301-314-7693) helps students with time management, reading, note taking, and exam preparation skills.

Phys 260 Schedule for Fall 2014 (subject to change).

	Date	Topics	Knight Chapter
Week 1	09/01	**Labor Day – NO CLASS**	
	09/03	**A Macroscopic Description of Matter**	**16**
Week 2	09/08		**16**
	09/10		**16**
Week 3	09/15	**Work, Heat, and the First Law of Thermodynamics**	**17**
	09/17		
Week 4	09/22	**The Micro/Macro Connection**	**18**
	09/24		
Week 5	09/29	**Heat Engines and Refrigerators**	**19**
	10/01		
Week 6	**10/06**	**Exam 1**	
Week 6	10/08	**Traveling Waves**	**20**
Week 7	10/13	**Traveling waves**	**20**
	10/15	**Superposition**	**21**
Week 8	10/20	**Superposition**	**21**
	10/22	**Electric Charges and Forces**	**25**
Week 9	10/27	**Electric Charges and Forces**	**25**
	10/29	**The Electric Field**	**26**
Week 10	**11/03**	**Exam 2**	
Week 10	11/05	**Gauss's Law**	**27**
Week 11	11/10	**Gauss's Law**	**27**
	11/12	**The Electric Potential**	**28**
Week 12	11/17	**The Electric Potential**	**28**
	11/19	**Potential and Field**	**29**
Week 13	11/24	**Potential and Field**	**29**
	11/27	**Thanksgiving – NO CLASS**	
Week 14	12/01	**Current and Resistance**	**30**
	12/03	**Fundamentals of Circuits**	**31**
Week 15	12/08	**Fundamentals of Circuits**	**31**
	12/10	**Review**	
		Tuesday, December 16, 2014 6:30 – 8:30 PM Final	