

**Syllabus For Physics 260, Fall 2019**  
**Prof. Rabindra N. Mohapatra**

**Lecture hours: TTh-2:00-3:15; Phys. Bldg Room 1412**

Text book for the course is: “**University Physics**” by Young and Freedman, 14th edition (Pearson).

**Office hours: tentative: Monday: 2:00-3:00; Thursday 3:30-4:30; I am aware that these times may conflict with the class schedule for some of you; if that happens, you can come to my office at other time by appointment.**

**My office : Rm 3156, Physical Science Complex; (Not the Physics Bldg where classes are held.) X56022; e-mail: rmohapat@umd.edu**

Physics 260 is the second of a three semester introductory physics course for engineers and other sciences. It consists of two regular weekly classes to be conducted by me and one hour-long discussion class for each section to be conducted by the TAs. There is a lab for this course (Phys. 261) for which there is a separate meeting time. The physics 261 (LAB) will be graded separately from the Phys. 260 class. The final grade for Phys. 260 will be based on the home works, class quizzes, three midterms and a final exam. This will not include the grade for the lab. (i.e. Phys 261). The Phys 261 grade will be decided by the lab instructor. Note however that lab (Phys 261) is an important part of this course. If you do not pass Phys. 261 separately, you will not pass the course and have to retake the whole course again. So please pay special attention to the lab.

Below is a description of the organization of the Phys. 260 course.

**Discussion session:** In addition to regular classes T-Th 2-3:15, there will be a one hour discussion session every week for different sections at different times. Please check the schedule of discussion classes for your section. Purpose of the discussion session is to go over the material that you went over in the class, but mainly to solve problems (other than the ones assigned as homework) and clear up difficulties with concepts and math steps etc. Please attend these classes regularly and make good use of them.

**Teaching Assistants:** Your teaching assistant will take the discussion classes, grade midterms, final and quizzes. If you have any questions on the grades, home works, quizzes etc, you need to talk to me and not the TAs

If you do not follow any math step discussed in the class, I can clear up in the office hours or ask the TA in the discussion class. Do not delay clearing up the difficulties-otherwise they will pile up and halt your progress.

### **Important dates for Phys. 260 students;**

*midterm dates are tentative and may change depending on how the course progresses. If they change, they will be announced in the class two weeks before.*

First day of classes	Aug.27
Midterm I	Thursday Sept. 26
Midterm II	Tuesday, Oct. 29
Midterm III	Thursday, Nov. 21
Final Exam.	Dec. 12 (6:30-8:30 PM)

### **Homeworks, Quizzes, Midterms and Grading**

There will be one weekly 15 minute quiz in the class, on one of the two class days. The day of the quiz will be random depending on a suitable breakpoint between chapters and it will cover the chapter covered during the preceding week and you will need the ideas from previous chapters. The quiz will be graded and will count towards your final grade. No quiz will be dropped. So make sure to take all the quizzes. Quizzes are an important test of how much you are understanding the material in the class.

#### **Online home works**

There will be weekly online homework assignments; they will be graded automatically and will also count towards your final grade. The online homework assignments will be from the web site of the book [masteringphysics.com](http://masteringphysics.com) and may not necessarily be similar to the quiz problem. They are designed to test your understanding of the subject matter being discussed.

You need to register for this using the course ID below:

**MPMOHAPATRA5500515**

Registering in mastering physics should be done before the first day of class. Talk to me if you need help with this. There are time limits on the assignments and if you miss them once, there is no way to correct for this later on.

When solving problems, read the instructions carefully before you start working since there are only few chances to click on the answer button. Any technical problems with mastering physics website should be resolved by sending a message to **[support@masteringphysics.com](mailto:support@masteringphysics.com) and not to me.**

#### **Midterms**

There will be three midterm exams and all of them will count towards the final grade. The final exam will cover material covered during the whole semester.

The **final grade** will be decided as follows:

Home works(Mastering Phys.)	45
Quizzes(in class)	50
Midterms; $3 \times 60$	180
Final	125
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Total	400

**Honors section** Those enrolled in the honors section will have to work on a physics project and write a 10 page report at the end of the semester for extra 20 points. You can either pick a project topic on your own (with my approval of the topic) or ask me for one. You will be required to check in with me once every four weeks during the semester to discuss your progress. Please pick the topic during the first week of classes.

**Missing an Exam:** You must have a valid, medical excuse acceptable by the rules of the university to make up if you miss any of the midterms or the final exam. The excuse must be presented to the Professor (and not the TA) **before** the exam. How the missed exam will be made up, will be decided by the professor at that time, assuming the excuse is acceptable. Under very special circumstance, an incomplete final grade may be issued- see the specific University rules for this and how an incomplete grade can be changed to a regular grade.

**Responsibility:** You are responsible for everything in every covered chapter, unless a specific section was explicitly excluded. Your goal should be to be proficient in the subject matter of the course and to acquire the ability to solve problems using the course material. *Please attend every class and read up the class material before coming to the class. This always makes it easier to understand the material being discussed in the class.*

**HELP AVAILABLE:** If you have any difficulty at all understanding the material, please clear it up as soon as possible. If a difficulty is not cleared up right away, it generally leads to more trouble later on till it grinds your physics progress to a complete halt. It may then be too late. So (*let me repeat again*), clear up your difficulties as soon as they arise without any delay. **THIS IS VERY IMPORTANT!!**

Take advantage of my office hours which are given above. If the announced hours are not convenient for some reason, send me a e-mail (rmohapat@umd.edu) to set up an appointment. Alternatively, you can contact the people at the Physics (Slawsky) clinic in the first floor of the Physics building (Toll bldg) which offers free help.

**Always remember: key to really learning physics is to solve as many problems as possible and not necessarily the ones assigned in the class.** Physics involves new ideas and new equations which are not part of your daily thinking. The more problems you solve, the more familiar you feel with the the ideas and equations and easier it becomes to use them for problem solving. Some suggestions

to improve your understanding of the material:

- *Read the chapter being covered before coming to the class- so that you have some familiarity with the material- it is then a lot easier to stay focussed in the class.*
- Try to solve at least four or five physics problems every day in addition to assigned homework problems.
- A useful technique is to first form a visual image of the problem before you attempt to solve it. Draw diagrams for every problem. You will learn in the class how to do this in various cases.

### Chapters from Young-Freedman book Covered

A **tentative** schedule is as follows:

<b>Date</b>	<b>Topics covered</b>	<b>chapter</b>
Wk 1	8/27-8/29	Chapter 17
Wk 2	09/03-09/05	Chapter 17+18
Wk 3	09/10-09/12	Chapter 19
Wk 4	09/17-09/19	Chapter 20
Wk 5	09/24	Review
Wk 5	09/26	midterm 1
Wk6	10/01-10/03	Chapter 15+16
Wk7	10/08-10/10	Ch. 16+21
Wk8	10/15-10/17	Ch. 21+22
Wk9	10/22 -10/24	Ch. 22+Review
Wk 10	10/29	Midterm II
Wk 10	10/31	Ch.23
Wk11	11/05-11/07	Ch. 24
Wk 12	11/12-11/14	Ch. 25+26
Wk 13	11/19	Review.
Wk14	11/21	Midterm III
Wk 14	11/26	Ch. 26
Wk 15	12/03-12/05	Ch. 26+Review for Final
Wk15	12/12 : 6:30-8:30 PM	<b>final exam:</b> entire semester's work