

# Physics 270 Sections 0101-0104 Spring 2012

Electrodynamics, Light, Relativity, and Modern Physics

**INSTRUCTOR:** *T M. Antonsen Jr.*

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Office hours: MW 2-4 or by appointment. Please do not hesitate to contact me if you have questions at all.

**TEACHING ASSISTANT:** *Eric Voorhies*

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0104 Physics

405-58577

Office hours: T 1-3, Th 10-12, F 10-12

**IMPORTANT WEB SITES:**

**Class Website:** [elms.umd.edu](http://elms.umd.edu)

**Mastering Physics:** [www.masteringphysics.com](http://www.masteringphysics.com)

**LECTURES:** Phy 1412

**TIME:** MWF 1:00-1:50

**0101** W..... 2:00pm- 2:50pm (**MTH 0106**)

**0102** M..... 3:00pm- 3:50pm (**MTH 0302**)

**0103** W.....11:00am-11:50am (**MTH B0421**)

**0104** Th..... 8:00am- 8:50am (**PHY 0405**)

**COURSE DESCRIPTION:** Electrodynamics, Light, Relativity and Modern Physics

**TEXT:** Physics for Scientists and Engineers – A Strategic Approach, Second Edition, by Randall D. Knight

We will cover chapters 33-36, 20-24, and 37-41. You will also be responsible for material in earlier chapters, so be sure to have access to these.

**LAB:** PHYS270 and PHYS271 (lab) 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 PHYS270 and PHYS271. If you believe that you have

completed the lab in a previous semester, you should go to Student Services (Room 1120, Physics Building) during the second week of this semester to have your grade verified. PHYS.271 is run separately and is organized by [Professor La Porta \(alaporta@umd.edu\)](mailto:alaporta@umd.edu) this semester.

**MASTERING PHYSICS:** We will be using Mastering Physics for assignments and managing the course. To register for the course on [Mastering Physics \(http://www.masteringphysics.com/\)](http://www.masteringphysics.com/) the instructions are shown below. You will need your student ID and the following course ID: MPANTONSEN95843. Use of Mastering Physics will begin with the first assignment so sign up soon.

**LECTURE SCHEDULE:** A tentative lecture schedule is shown below. This schedule is tentative and will be updated during the semester. There is a lot of material to be covered; not all will be covered in lecture. You are expected to have read the relevant sections of the text *before* the material is discussed in lecture. By the same token, the lectures will include some material not in the text, so attendance at lectures is essential.

**LECTURE NOTES:** I post my lecture notes online before hand. A good approach is to print these out, bring them to lecture, and make additional notations on the pages. This is preferable to attempting to write down everything I say and write.

**CLICKERS:** I intend to use clickers during the lectures. The primary reason is to gather information on your comprehension of the material and keep you engaged in lecture. I will use your level of participation as a form of extra credit in determining your final grade should you be on the border between two grades. Information about clickers can be found at <http://www.clickers.umd.edu/>. According to OIT the system works also with smart phones, laptops, and tablets. Check out the link above for more info.

**EXAMS:** There will be four exams: three midterms and a final exam. The lowest midterm score (after normalization) for each student will be dropped. Exams will be closed book. However, you will be permitted to bring one sheet of paper with formulas you find important written on both sides. The writing should not be so small that I can't read it. All exams will be "curved" before the final tabulation of grades.

**HOMEWORK:** There will be two types of homework problems: Mastering Physics problems of a tutorial nature, which you do online, and more traditional problems that I will assign and post on the course web site. The more traditional problems will emphasize your problem solving skills and your ability to explain in writing what you have done. Good solutions will contain an equal mix of words and symbols, all symbols will be defined, and formulas for the answers will be presented before numerical values are obtained. (An exception is if you do a side calculation to justify an approximation that you would like to use.) Generally put, you should write the solution as if it is to be read by one of your classmates, not an instructor who already knows the answer. Late homework will not be accepted unless accompanied by a compelling excuse.

**RECITATIONS:** Recitations will be devoted primarily to discussion of problem solutions. On occasion quizzes based on the previous week's homework will be given. Beware, a quiz may be given on Monday, but not Wednesday or Thursday, and vice versa.

**GRADING:** Your PHYS270 course grade will be computed on the basis of 475 points apportioned as follows:

Best two of three midterms	200
Final:	150
Quizzes	25
Homework	100
Total	475

This score will then be combined with the Phys 271 grade  $PHYS271/PHYS270=1/3$  to arrive at a final grade. Remember you must pass both courses to pass PHYS270

For the 270 portion of your score all grades are curved and normalized so that the means and standard deviations are matched. Generally speaking, the mean marks the border between C and B. One standard deviation above the mean marks the border between B and A. This is just a general guideline and deviations occur when extra information (such as clicker participation) is added in.

## PHY270 Sections 0101-0104 (Antonsen)

Spring 2012

### Tentative Schedule

Week	Dates	Chapters	Comments
1	Jan. 25 - 27	33.1 –33.4	Introductions
2	Jan. 30-Feb 3	33.5-33.8, 34.1	
3	Feb. 6-10	34.2 –34.8	
4	Feb. 13 -17	34 .9, 35.1 – 35.5	
5	Feb. 20-24	35.6 – 35.7, 36.1-36.2	
6	Feb. 27 – March 2	36.3-36.5, 20.1-20.2	Exam #1 Mon. Feb. 27
7	March 5-9	20, 21	Review of Waves
8	March 12 - 16	22.1-22.4	
9	March 19 - 23		Spring Break
10	March 26 –30	23.1 – 23.6	

11	April 2 - 6	25.1 – 25.4	Exam #2 Mon. April 2
12	April 9 - 13	37.1 – 37.8	
13	April 16 - 20	38.1 – 38.9	
14	April 23 - 27	39.1 – 39.7	
15	April 30 -May 4	40.1 – 40.6	Exam #3 Monday May 7
16	May 7 - 9	41.1 – 41.3	Common Final Exam  TBD



Dear Student:

In this course you will be using MasteringPhysics®, an online tutorial and homework program that accompanies your textbook.

**What You Need:**

- ✓ **A valid email address**
- ✓ **A student access code** (Comes in the Student Access Kit that may have been packaged with your new textbook or is available separately in your school's bookstore. Otherwise, you can purchase access online at [www.masteringphysics.com](http://www.masteringphysics.com).)
- ✓ **The ZIP code for your school: 20742**
  
- ✓ **A Course ID: MPANTONSEN95843**

**Register**

- Go to [www.masteringphysics.com](http://www.masteringphysics.com) and click **New Students** under **Register**.
- To register using the Student Access Code inside the MasteringPhysics Student Access Kit, select **Yes, I have an access code**. Click **Continue**.

–OR– **Purchase access online:** Select **No, I need to purchase access online now**. Select your textbook and whether you want to include access to the eText, and click **Continue**. Follow the on-screen instructions to purchase access using a credit card. The

purchase path includes registration, but the process may differ slightly from the steps printed here.

- **License Agreement and Privacy Policy:** Click **I Accept** to indicate that you have read and agree to the license agreement and privacy policy.
- Select the appropriate option under “Do you have a Pearson Education account?” and supply the requested information. Upon completion, the **Confirmation & Summary** page confirms your registration. This information will also be emailed to you for your records. You can either click **Log In Now** or return to [www.masteringphysics.com](http://www.masteringphysics.com) later.

### **Log In**

- Go to [www.masteringphysics.com](http://www.masteringphysics.com).
- Enter your Login Name and Password and click **Log In**.

### **Enroll in Your Instructor’s Course and/or Access the Self-Study Area**

Upon first login, you’ll be prompted to do one or more of the following:

- **Join your MasteringPhysics course** by entering the **Course ID** provided by your instructor.
- Enter a Student ID, if prompted. Your instructor *may* provide specific instructions on what to enter. If so, be sure to enter this information EXACTLY as instructed.

Click **Save** and **OK**.

Congratulations! You have completed registration and have enrolled in your instructor’s MasteringPhysics course. To access your course from now on, simply go to [www.masteringphysics.com](http://www.masteringphysics.com), enter your Login Name and Password, and click **Log In**. If your instructor has created assignments, you can access them in the **Assignments Due Soon** area or by clicking **View All** in this area. Otherwise, click on **Study Area** to access self-study material.

### **Support**

Access Customer Support at [www.masteringphysics.com/support](http://www.masteringphysics.com/support), where you will find:

- System Requirements
- Answers to Frequently Asked Questions
- Additional contact information for Customer Support, including Live Chat

