

# Physics 207 - General Physics I

Fall 1995

The first of an introductory physics sequence, this course will survey mechanics, mechanical waves, and thermodynamics. Prerequisite: Calculus (Math 221 or equivalent).

## Contents

Lecture  
Discussion sections  
Laboratory  
Homework  
Sections  
Hour Exams  
Final Exam  
Grading  
Consultation Room  
Complaints and Concerns  
Alternative References  
General Advice  
Syllabus  
Special Friday Lectures

## Instructor

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## Text

Serway, *Physics for Scientists & Engineers with Modern Physics*, third edition (updated).

## Lab manual

Rolfson and Richards, *Laboratory Experiments in General Physics*, 1995 edition.

## Other materials

- Lab notebook preferably hard bound with cross-hatched ruling. Bring it to your first laboratory meeting.
- Calculator with trigonometric, exponential, and logarithmic functions.

## Lectures

8:50 am MWTF in 1300 Sterling Hall. This course moves quickly. Read the assigned material before

lecture. The lectures supplement the reading. Friday lectures are optional except for exams and for honors students. Everyone is encouraged to attend. Attendance will be taken.

## Discussion sections

Your discussion section will be led by your Teaching Assistant (TA). Quizzes will occasionally be given in your discussion section and will count toward your grade.

## Sections

1. 301/601 1:20-4:15p M, 4300 Sterling, 8:50 TR 2323 Sterling, John Kelly
2. 302/602 12:03-3:00 T, 4300 Sterling, 3:30 MW 2323 Sterling, Greg Jacko
3. 303/603 3:30-6:25p T, 4300 Sterling, 12:05 MW 3401 Sterling, Greg Jacko
4. 304/604 7:05-10:00p T, 4300 Sterling, 4:35 TR 1327 Sterling, John Kelly
5. 305/605 12:05-3:00p W, 4300 Sterling, 8:50 TR 2327 Sterling, Kyle Altman
6. 306/606 3:30-6:25 W, 4300 Sterling, 9:45 TR 2323 Sterling, Kyle Altman
7. 307/607 7:05-10:00p W, 4300 Sterling, 11:00 TR 1407 Sterling, Ian Nelson
8. 308/608 12:05-3:00p R, 4300 Sterling, 1:20 MW 1412 Sterling, Ian Nelson

## Laboratory

Follow the "General Instructions" in the laboratory manual (pages 1-3). The experiments are to be written up during the laboratory period in the lab notebook. Have your lab instructor initial and date the work before you leave the lab. Do not take your lab notebook home except with permission of your instructor. The lab is in 4300 Sterling Hall.

## Homework

The homework problems are assigned in the syllabus for each week and should be handed in at the first discussion section the following week. Late problem sets will not be accepted. Homework will count toward your grade. You may work with others on the homework, but do not simply copy someone's solutions. The solutions will be discussed in your discussion section and placed on reserve in the Physics Library (4220 Chamberlin Hall).

## Hour Exams

Hour Exams will be given during the Friday lecture as follows

1. September 29, Chapters 1-5
2. October 27, Chapters 6-11
3. December 1, Chapters 12-18

The exams will be closed-book, but you will be allowed one 8 1/2 x 11-inch sheet of notes. The exams will be graded and handed back in your first discussion section of the following week. Solutions will be discussed and placed on reserve in the Physics Library (4220 Chamberlin Hall). There will be no makeup exams.

## Final Exam

The final exam will be at 2:45 pm on Tuesday, December 19 (room to be announced). It will cover the entire course (Chapters 1-22) with equal weight. You will be allowed two 8 1/2 x 11-inch sheets of notes.

## Grading

The course grade will consist of the following components

- 3 hour exams 300 points
- Final exam 200 points
- Laboratory 100 points
- Homework & discussion 100 points
- TOTAL 700 points

Lab, homework and discussion grades will be assigned by your TA and will be normalized to the distribution on the hour exams. Letter grades will be assigned based on the total number of points accumulated.

## Consultation Room

Room 1402 Sterling is staffed by TA's from Physics 207 and 201 during much of the week. See the schedule card on the door. You may ask questions of any of the TA's or come during the hours that your TA is there. You may also make an appointment with your TA at any mutually convenient time and place.

## Complaints and Concerns

If you have a non-subject matter question or concern that cannot be resolved by your TA or professor, contact Jean Buchlman, Instructional Program Manager (afternoons in 2520 Sterling Hall, 262-2629).

## Alternate References

To see the same topics explained differently, try the following (on reserve in Physics library - 4220 Chamberlin)

- Halliday and Resnick, *Fundamentals of Physics*
- Giancoli, *General Physics*
- Rusubak, *Tools for Problem-Solving*

## General Advice

Physics is not something you read and memorize, rather it is something you learn how to do. TRY the following study procedure

1. Read the chapter prior to lecture, so that you will know what it's about.
2. Listen carefully to the lecture and take notes.
3. Work problems, and more problems, going back through the chapter to clarify points as they come up.

Be honest with yourself and others. Science can not exist without integrity.

## Physics 207 Fall 1994 Syllabus

References are to Serway, Physics, 3rd edition (updated), Lab manual is Rollerson and Richards, 1995 edition.

### Weak Reading - Problems - Lab

1. 09/04 Ch 1 - 1: 4.14,34,43,57,61 - no lab
2. 09/11 Ch 2,3 - 2: 4.16,24,35,50,53; 3: 7.14,20,42,48,72 - M1
3. 09/18 Ch 4,5 - 4: 8.16,19,28,36,43; 5: 12.29,38,50,76,87 - M4
4. 09/25 Review - Exam (9/29) Chapters 1-5 -MS-
5. 10/02 Ch 6,7 - 6: 11.20,28,32,42,49; 7: 10.18,27,47,54,88 M6
6. 10/09 Ch 8,9 - 8: 2.5,12,18,26,45; 9: 9.14,28,43,57,66 - M14
7. 10/16 Ch 10,11 - 10: 2.10,21,26,36,39; 11: 4.24,29,36,39,41 - M9
8. 10/23 Review - Exam (10/27) Chapters 6-11 - M3
9. 10/30 Ch 12,13 - 12: 6.8,21,30,42,56; 13: 12.16,23,32,42,49 - M15
10. 11/06 Ch 14,15 - 14: 4.15,26,36,45,51; 15: 3.13,21,28,43,74 - S1
11. 11/13 Ch 16,17 - 16: 1.7,17,30,36,54; 17: 1.12,26,38,46,57 - S3
12. 11/20 Ch 18,19 - 18: 7.11,30,45,50,60; 19: 5.8,31,45,64,75 - makeup
13. 11/27 Review - Exam (12/1) Chapters 12-18 - B2
14. 12/04 Ch 20,21 - 20: 11.31,37,45,60,81; 21: 6.14,24,31,39,75 - B4
15. 12/11 Ch 22 - 22: 7.15,20,27,28,42 - makeup
16. Final Exam (12/19) Chapters 1-22

## Physics 207 Fall 1995 Special Friday Lectures

- Sep 8 D. Carlsmith - Problem Solving and Error Analysis
- Sep 15 Frames of Reference (Tim)
- Sep 22 J. Cameron - Physics of the Body
- Sep 29 Exam (Chap 1 - 5)
- Oct 6 The Pleasure of Finding Things Out (Feynman video)
- Oct 13 C. Sprott - Chaos and Randomness
- Oct 20 R. Morse - Physics at the South Pole
- Oct 27 Exam (Chap 6 - 11)
- Nov 3 C. Sprott - Fractals
- Nov 10 H. Gommel - Black Holes, Neutron Stars, and all that
- Nov 17 D. Carlsmith - Physics at 1e-15 meters
- Nov 24 Thanksgiving recess
- Dec 1 Exam (Chap 12 - 18)
- Dec 8 D. Carlsmith - The Wonders of Physics (Fun lecture)
- Dec 15 No Class

### D. Carlsmith