

PHYSICS 100 FALL 2018

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Lecture hours: MWF 10-10:50 AM
Office hours: MW 4-5:30 PM and by appointment

WELCOME TO PHYSICS 100. This general education course provides credit in

- Category E (Physical Science)
For students who began college in Fall 2015 or after (New GE).
- Category III (Scientific Inquiry)
For students who began college prior to Fall 2015 (Old GE)

Physics 100 is intended for the non-science major without much previous background in the sciences and mathematics. The course is primarily conceptual, i.e., there will be few instances in which you will be required to perform long calculations or to memorize complicated formulas. The goal of the course is to introduce you to a variety of natural phenomena and the physical theories that have been developed to describe them. Just as you don't have to be a sculptor to appreciate art or a violinist to appreciate music, you don't have to be a nuclear theorist to appreciate physics.

LEARNING OBJECTIVES:

- (1) Acquire a qualitative understanding of physical concepts ranging from Newton's Laws of Motion to the quantum theory of radiation and matter.
- (2) Gain an appreciation for physics as the basic science that underlies most of modern technology.
- (3) Be able to apply ideas and insights from physics to everyday life beyond the university.

TEXTS:

- Paul Hewitt: *Conceptual Physics*, 12th Edition, Pearson (2015).
You can rent a book or buy either a used or new book. You should be able to get by with an older edition – only the Homework Problems differ substantially between editions, and I will post these online.

- *Physics 100 Lab Manual.*

This can be downloaded from the course website. There is nothing to buy.

BLACKBOARD SITE:

The PHYS 100 website is maintained on Blackboard at <https://blackboard.usc.edu> . Under the home page you will find

- a copy of this lecture syllabus and schedule
- a running archive of lecture videos for this semester
- Homework and Quiz assignments
- a record of your scores on assignments and exams.

READING AND QUIZZES:

A very short online Quiz, typically five multiple-choice questions, will be assigned **prior to each class meeting after August 20**. The Quizzes will cover the new reading, as well as ideas from the previous class.

The Quizzes may be taken by logging onto Blackboard through a web browser or through the Blackboard Mobile Learn app, available free of charge at the iTunes App Store or Google Play. You can take each Quiz up to three times, so it will be possible to correct mistakes. Please note only your final submission will be counted, even if your score is higher on a previous submission.

Each Quiz will be **due at 10:10 AM on the day of class**, but it would be better to take them ahead of time unless you are desperate. The Quizzes account for 10% of the final course grade.

HOMEWORK:

Homework exercises will be assigned weekly and will be turned in online as either a Word or pdf attachment. The homework exercises will be short and generally qualitative - they are intended to reinforce ideas and to develop logical reasoning, rather than to provide practice in algebra. It should be possible to do a Homework in an hour or less if you have been keeping up with class.

Homework will be **due at 10:10 AM each Wednesday beginning in Week 2**. No late homework will be accepted. The Homeworks account for 10% of the course grade. Collaboration on homework is *encouraged*, but you should turn in your own work, not a copy of a group solution.

LABORATORY:

A laboratory component is included in Physics 100 as part of the university's general education requirement. **The lab sections meet for the first time during Week 2**,

then every two weeks after that. The lab manual is available online at the course website. There is no cost for a manual.

The complete lab schedule is as follows:

Week of . . .	Topic
August 27	Basic aspects of physics
September 10	Acceleration down an incline
September 24	Projectile motion
October 8	Fluids
October 22	Waves
November 5	Electric circuits
November 19	THANKSGIVING WEEK - NO LABS
November 26	Light and color

The rubric for lab grading will be explained during the first meeting. The lab accounts for 20% of the course grade.

MIDTERM AND FINAL EXAMS:

The course will have two midterm exams and a comprehensive final exam. The midterm exams are scheduled for the regular class meeting periods on **Wednesday, September 26** and **Wednesday, October 31**. You must take both midterm exams. Your higher midterm score will account for 20% of the course grade, and your lower midterm score for 15% of the course grade.

The final exam is scheduled for **Monday, December 10, 8 - 10 AM**. The final exam accounts for 25% of the course grade, and you must take the final exam in order to pass the course.

All exams are closed book, consist of multiple choice questions, and are machine-graded. **There are no makeup exams.**

SUMMARY OF COURSE GRADE:

Quizzes (taken online)	10%
Homework (submitted online)	10%
Laboratory	20%
Midterms	
Low Score	15%
High Score	20%
Final Exam	25%
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Total:	100%

STUDENTS WITH DISABILITIES:

Students who need to request accommodations based on a disability are required to register each semester with the Office of Disability Services and Programs (DSP). In addition a letter of verification to the instructor from DSP is needed for the semester you are enrolled in this course. If you have any questions concerning this procedure, please contact the instructor and DSP at GFS 120, 740-0776.

ACADEMIC INTEGRITY:

Homework assignments may be done in collaboration with other students, but you should hand in your own work, not a group solution. **Under no circumstances should students seek out homework solutions from alumni of Physics 100 or from any other printed or online solution sets/manuals.** Failure to abide by this rule will result in a zero for the Homework portion of the grade.

Academic integrity violations on any exam will result in an F for the course.

SCHEDULE

Week	Date	Chapters	Topics	HW Due Date
1	8/20	1–3	About Science Newton's First Law Linear Motion	8/29
2	8/27	3–5	Linear Motion Newton's Second Law Newton's Third Law	9/5
3	9/5	5–6	Newton's Third Law Momentum	9/12
4	9/10	6–8	Momentum Energy Rotational Motion	9/19
5	9/17	8–9	Rotational Motion Gravity	9/26
• MIDTERM EXAM I – Wednesday, September 26 – Chs. 1–8 •				
6	9/24	13–14	Liquids Gases	10/3
7	10/1	15–16	Temperature and Heat Heat Transfer	10/10
8	10/8	17, 19	Change of Phase Vibrations and Waves	10/17
9	10/15	20–22	Sound Musical Sounds Electrostatics	10/24

Week	Date	Chapters	Topics	HW Due Date
10	10/22	22–24	Electrostatics Electric Current Magnetism	10/31
• MIDTERM EXAM II – Wednesday, October 31 – Chs. 9, 13–17, 19–22 •				
11	10/29	24–25	Magnetism Electromagnetic Induction	11/7
12	11/5	26–28	Light Color Reflection and Refraction	11/14
13	11/12	28-29, 31	Reflection and Refraction Light Waves Light Quanta	11/28
14	11/19	31	Light Quanta	
• THANKSGIVING BREAK – November 21–25 •				
15	11/26	32–33	The Atom and the Quantum The Atomic Nucleus	
• FINAL EXAM – Monday, December 10, 8–10 AM – Cumulative •				

IMPORTANT DATES

Last day to change to PASS/NO PASS – September 7

Midterm Exam #1 – September 26

Last day to drop without a mark of W – October 5

Midterm Exam #2 – October 31

Last day to drop with a mark of W – November 9

Last day of class – November 30

Final Exam – December 10