

## ***PHYSICS 172 Fall 2021***

### **INSTRUCTORS:**

**Lecture, M/W, CPA 150, 10:00am-10:50am, Stephan Haas**

Office	SSC 211A
Office Hours	Mondays at 11am (after class): <a href="https://usc.zoom.us/j/92566736662?pwd=Y3dGOHE4cWxqdnQ1TWtDdzZZNmdYUT09">https://usc.zoom.us/j/92566736662?pwd=Y3dGOHE4cWxqdnQ1TWtDdzZZNmdYUT09</a>
Phone Number	213-740-4528
email	shaas@usc.edu

**Discussion Section, T/Th, GFS 116, 10:00am-10:50am, Wade Hsu**

Office	PHE 610
Office Hours	Tuesdays and Thursdays at 2pm: <a href="https://usc.zoom.us/j/7201743724">https://usc.zoom.us/j/7201743724</a>
Phone Number	213-740-0305
email	cwhsu@usc.edu

### **Course Materials**

#### **Required for the Lecture (free, online)**

<https://openstax.org/details/books/university-physics-volume-2>

<https://optics.byu.edu/docs/opticsBook.pdf>

#### **Other Books**

Halliday, Resnick, Walker, *Fundamental of Physics*, Eighth Ed. (Wiley, 2008).

Knight, *University Physics*, Second Ed. (Pearson/Addison-Wesley, 2008).

Ohanian and Markert, *Physics for Engineers and Scientists*, Third Ed. (Norton, 2007).

E. M. Purcell, *Electricity and Magnetism*, Second Edition

Resnick, Halliday, Krane, *Physics*, v.1, Fifth Ed. (Wiley, 2001).

Serway and Jewitt, *Physics for Scientists and Engineers*, Seventh Ed. (Brooks/Cole, 2007).

Tipler and Mosca, *Physics for Scientists and Engineers*, Sixth Ed. (Freeman, 2008).

Richard Wolfson, *Essential University Physics*, Volume 2, Pearson/Addison Wesley.

**NOTES on LABORATORY** – The laboratory director is Dr. Gokhan Esirgen. His email is [esirgen@usc.edu](mailto:esirgen@usc.edu). His office is KAP-B19, and his office phone is 213-740-1138. The laboratory grade is worth 20% of your total course grade. Your lab TA will help you figure out how to perform the experiments and how to troubleshoot when they are not working.

**HOMEWORK** – The homework will consist of written problems designed by the instructors. The homework will be posted on Blackboard in the assignments section and collected via Blackboard. Late homework is not accepted.

**MIDTERMS** – There will be two midterms, which will be held during at the lab location during the lab time. There will be no labs during exam weeks. The first midterm will be on Friday, October 1, covering the first module of the course. The second midterm will be on Friday, November 5, covering the second module of the course. Each midterm will be worth 20% of your total course grade.

**EXAM Final** – The final exam will be on Monday, December 13 from 8:00am until 10:00 am. The final will cover the entire class, with an emphasis on the last module of the course, and it will be worth 20% of your total course grade.

### **GRADING SUMMARIZED:**

<b>Item</b>	<b>Percent towards total course grade</b>
Homework	20
Midterm One	20
Midterm Two	20
Final Exam	20
Laboratory Grade	20
<b>Total</b>	<b>100</b>

**LECTURE NOTES** – One of the best ways of learning physics is to copy your lecture notes over neatly and clearly and see if you can understand them without the instructor filling in the narrative. This combined with reading your book is a tremendous exercise for learning the material. If you do this you will find that the homework is a lot easier.

**DISABILITIES** – Students who need to request accommodations based on a disability are required to register each semester with the Disability Services and Programs. In addition, a letter of verification to the instructor from the Disability Services and Programs is needed for the semester you are enrolled in this course. If you have any questions concerning this procedure, please contact the course instructor and Disability Services and Programs at (213) 740-0776, STU 301.

**ASSISTANCE** – In addition to lecture, the instructor and Lab TAs have office hours that can be used to answer questions you may have about concepts or particular homework problems. Also, the solutions to written homework problems are posted on Blackboard after the homework is turned in.

### **ADDITIONAL ASSISTANCE:**

#### **(a) Study Groups**

One of the most effective ways to learn new material is to teach it to others. To this end, we encourage you to work together in learning the material, and in doing homework assignments. If you have friends also enrolled in the course, in any section, feel free to discuss homework problems, *approaches* to solutions, and even solutions, though again you are cautioned not to simply copy each other's solutions.

(b) Viterbi Academic Resource Center <http://viterbi.usc.edu/tutoring>

The Viterbi Academic Resource Center office is located in the Ronald Tutor Hall of Engineering, Room 222, and provides two kinds of services. It provides free individual and group tutoring with tutors screened by the School of Engineering. For more information contact the Engineering Student Affairs Office, RTH 110. Other contacts: 740-3381, [viterbi.tutoring@usc.edu](mailto:viterbi.tutoring@usc.edu).

### OUTLINE OF TOPICS COVERED, APPROXIMATE WEEKLY SCHEDULE:

Week	Dates	Chapters	Topics
1	Aug. 23	UP Ch. 5	Electric Charges and Fields
2	Aug. 30	UP Ch. 6	Gauss's Law
3	Sept. 6	UP Ch. 7	Electric Potential
4	Sept. 13	UP Ch. 8	Capacitance
5	Sept. 20	UP Ch. 9	Current and Resistance
6	Sept. 27	UP Ch. 5-9	Review
Midterm One	Friday, Oct. 1	During Lab	Topics of Weeks 1-6
7	Oct. 4	UP Ch. 11	Magnetic Forces and Fields
8	Oct. 11	UP Ch. 12	Sources of Magnetic Fields
9	Oct. 18	UP Ch. 13	Electromagnetic Induction
10	Oct. 25	UP Ch. 14	Inductance
11	Nov. 1	UP Ch. 11-14	Review
Midterm Two	Friday, Nov. 5	During Lab	Topics of Weeks 7-11
12	Nov. 8	UP Ch. 16, PLO Ch. 1	Maxwell's Equations
13	Nov. 15	UP Vol. 1 Ch. 15 & 16	Oscillations and Waves
14	Nov. 22	PLO Ch. 2	Electromagnetic Plane Waves and Refractive Index
15	Nov. 29	PLO Ch. 3	Reflection and Refraction, Dissipative Media
Final Exam	Dec. 13	8:00am – 10:00am	Cumulative

**Important Dates Fall Semester 2021**

Aug. 23	Fall semester classes begin in Session 001
Aug. 23 - 27	Late registration and change of schedule
Sept. 6	Labor Day, University Holiday
<b>Sept. 10</b>	<b>Last day to register and add classes for Session 001</b>
<b>Sept. 10</b>	<b>Last day to drop a class without a mark of "W," except for Monday-only classes, and receive a 100% refund for Session 001</b>
<b>Sept. 10</b>	<b>Last day to change enrollment option to Pass/No Pass or Audit for Session 001</b>
<b>Sept. 10</b>	<b>Last day to purchase or waive tuition refund insurance for Session 001</b>
<b>Oct. 8</b>	<b>Last day to drop a class without a mark of "W" and receive a 100% refund or change to Pass/No Pass or Audit for Session 001</b>
Oct. 14-15	Fall Recess
<b>Nov. 12</b>	<b>Last day to drop a class with a mark of W for Session 001</b>
Nov. 24-28	Thanksgiving Break
Dec. 3	Fall semester classes end
Dec. 4-7	Study days
Dec. 8-15	Final examinations
Dec. 16- Jan. 9	Winter recess