University of Southern California (USC)

Dornsife College of Letters, Arts and Sciences/Department of Physics & Astronomy

PHYS 135b: Physics for the Life Sciences

Section 50362, Fall 2021

Instructor: Hamid R. Chabok, Ph.D.
Office Address: SHS 361
Email: chabok@usc.edu

Class schedule: Three times a week on Monday/Wednesday/Friday 12:00-12:50 am in SLH 102

Office hours: Twice a week on Monday/Wednesday 09:00 -09:30 AM
Other appointments should be scheduled in advance.

Course Description

The subject matter of this course includes electricity and magnetism, optics, relativity, and nuclear physics. The goal of the course is to teach you how to approach and solve physical problems and how to develop an intuition for the important physical properties that affect a given situation.

Required Course Materials

Required for lectures:
"D. Nemeschansky, Physics 135b USC, Fall 2021, USC Custom Publishing." This is available online. Instructors for how to download the course reader will be provided on Blackboard. This course reader will serve as our textbook for the course, as well as the source of all homework assignments. It has been written specifically for USC's 135b class!
Required for lab:
General Physics Laboratory Manual (available online through the laboratory Blackboard page). Questions concerning the laboratory should be referred to the Lab Director, Dr. Gökhan Esirgen (KAP B19; Email: esirgen@usc.edu). Although the lab is factored into your PHY 135b grade, it is run entirely separately from the lecture portion of the course.

Assignments and Grading Policy

1. Grades are based on homework, quizzes, two midterms, and final exam.
2. There are 10 weekly quizzes, starting from the 2nd week, and each quiz has 1.5 points.
3. There are 5 homework, each has 2 points.
4. There are 2 midterms, midterm-I has 15 points, and midterm-II has 20 points.

The overall grade will be determined as follows:

Assignment	Percentage
Final Exam	30%
Midterm Exam I	12.5%
Midterm Exam II	12.5%
Quiz (x10)	15%
Homework (x5)	10%
Labs	20%
Total:	**100%**

Grading Scale

Letter Grade	Quality Grade	Percentage	Letter Grade	Quality Grade	Percentage
A	4.0	≥ 93%	C	2.0	≥ 73%
A-	3.7	≥ 90%	C-	1.7	≥ 70%
B+	3.3	≥ 87%	D+	1.3	≥ 67%
B	3.0	≥ 83%	D	1.0	≥ 63%
B-	2.7	≥ 80%	D-	0.7	≥ 60%
C+	2.3	≥ 77%	F	0.0	< 60%

COURSE PACING GUIDE/SCHEDULE OF ASSIGNMENTS

✓Participation in class discussions and asking about unclear subjects is extremely important and encouraged.

✓Students are responsible for all information given in class whether they are there or not. Students are expected to attend the class on time and wait until the end of the lecture.

✓The final exam must be taken in order to pass the class.

Course Communication

Interaction with Instructor

The Instructor will make every effort to communicate frequently with students through announcements and postings within the Blackboard site. Questions can be sent to the Instructor via email [chabok@usc.edu].

As a student, you should expect to receive assignment feedback and responses to postings within 48 hours. The Instructor will post an announcement alerting the students if he will be unavailable for more than a day.

Turnaround/Feedback

During the week (M-F) I will check Messages and emails several times a day. If you have a concern and send me an email message, you can expect a response within two days.

Course & University Policies

Students with Disabilities

Any Student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me (or to TA) as early in the semester as possible. DSP is located in STU 301and is open 8:30 a.m. - 5:00 p.m., Monday through Friday. http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html, (213) 740 – 0776n
(Phone), (213) 740-6948 (TDD only), (213) 740-8216 (FAX), ability@usc.edu

Academic Honesty/Student Conduct

Many incidents of plagiarism result from students' lack of understanding about what constitutes plagiarism. However, you are expected to familiarize yourself with USC's policy on plagiarism. All work you submit must be your own scholarly and creative efforts. At USC, plagiarism is defined as the act of using ideas, words, or work of another person or persons as if they were one's own, without giving proper credit to the original sources.

As a USC student, you must behave with honor and integrity at all times. The University in its quest for truth and knowledge embraces honesty and integrity. These fundamental values must not be compromised. The trust and respect among professors, students and the society need to be vigilantly protected. Cheating and plagiarism can be neither justified nor condoned as this would destroy the ideals and purposes of higher education. Students enter the University to gain the knowledge and tools necessary for participation in society. Academic integrity is one foundation for a society based on trust and honesty. Therefore, the University takes seriously its responsibility for academic honesty. For more information, refer to (www.usc.edu/dept/publications/SCAMPUS/

FACULTY LIASION

All classes in the Department of Physics & Astronomy have an assigned Faculty Liaison to serve students as a confidential, neutral, informal, and independent resource when they wish to discuss issues concerning their course without directly confronting their instructor. The Faculty Liaison for this class is
Dr. Jack Feinberg, feinberg@usc.edu, 213-740-1134, SSC 327

COVID REQUIREMENTS

Students are expected to comply with all aspects of USC's COVID-19 policy. Failure to do so may result in removal from the class and referral to Student Judicial Affairs and Community Standards. https://coronavirus.usc.edu/

Tentative Course Outline/Schedule of Assignments

Week	Topic	Readings, Assignments, Deadlines:
Week 1 08/23, 08/25, 08/27	• Electricity (Ch. 17)	• Expected readings: Course Syllabus • Assignment: **Syllabus Quiz (Quiz #1)** uploaded on **Mon**. • Assignment Due: N/A • Prepare for topic: Read Slides for Week 1
Week 2 08/30, 09/01, 09/03	• Electric Potential (Ch. 18)	• Expected readings: Week 1 lecture materials • Assignment: **Quiz #2** on **Fri**. at 12 pm, **Homework #1** assigned on Fri. • Assignment Due: **Syllabus Quiz (Quiz #1)** on **Fri**. at 11 am • Prepare for topic: Read Slides for Week 2
Week 3 09/06, 09/08, 09/10	• Electric currents and Resistance (Ch. 19) • Mon: Labor Day	• Expected readings: Week 2 lecture materials • Assignment: **Quiz #3** on **Fri**. at 12 pm • Assignment Due: **Homework #1 on Fri. 11:00 am** • Prepare for topic: Read Slides for Week 3
Week 4 09/13, 09/15, 09/17	• Electric Circuits (Ch. 20)	• Expected readings: Week 3 lecture materials • Assignment: **Quiz #4** on **Fri**. at 12 pm • Assignment Due: N/A • Prepare for topic: Read Slides for Week 4
Week 5	• Magnetism (Ch. 21)	• Expected readings: Week 4 lecture materials • Assignment: **Homework #2** assigned on Mon., Quiz **#5** on **Fri**. at 12 pm

Week	Topic	Readings, Assignments, Deadlines:
09/20, 09/22, 09/24		• Assignment Due: N/A • Prepare for topic: Read Slides for Week 5
Week 6 09/27, 09/29, **10/01**	• Comprehensive Review	• Expected readings: Past Weeks lecture materials • Assignment: N/A • Assignment **Due: Homework #2** on Mon. 11:00 am • Prepare for topic: N/A
Week 7 10/04, 10/06, 10/08	• Electromagnetic Induction and Faraday's law (Ch. 22) **Midterm Exam I: October 5, 5:00 – 6:30pm**	• Expected readings: N/A • Assignment: **Quiz #6** on **Fri**. at 12 pm • Assignment Due: **N/A** • Prepare for topic: Read Slides for Week 7
Week 8 10/11, 10/13, 10/15	• Electromagnetic waves (Ch. 23) • Fri: Fall Recess	• Expected readings: Week 7 lecture materials • Assignment: **Homework #3** assigned on Wed. • Assignment Due: N/A • Prepare for topic: Read Slides for Week 8
Week 9 10/18, 10/20, 10/22	• Geometrical optics (Ch. 24)	• Expected readings: Week 8 lecture materials • Assignment: **Quiz #7** on **Fri**. at 12 pm • Assignment Due: **Homework #3** on Mon. 11:00 am • Prepare for topic: Read Slides for Week 9
Week 10 10/25, 10/27, 10/29	• Wave properties of light (Ch. 25)	• Expected readings: Week 9 lecture materials • Assignment: **Quiz #8** on **Fri**. at 12 pm, **Homework #4** assigned on Fri. • Assignment Due: **N/A** • Prepare for topic: Read Slides for Week 10
Week 11	• Wave properties of light (Ch. 25)	• Expected readings: Past Weeks lecture materials • Assignment**: N/A** • Assignment Due: **Homework #4** on Mon. 11:00 am • Prepare for topic: N/A

Week	Topic	Readings, Assignments, Deadlines:
11/01, 11/03, **11/05**		
Week 12 11/08, 11/10, 11/12	• Special Relativity (Ch. 26) **Midterm Exam II: November 9, 5:00 – 6:30pm**	• Expected readings: N/A • Assignment: **Quiz #9** on **Fri**. at 12 pm • Assignment Due: N/A • Prepare for topic: Read Slides for Week 12
Week 13 11/15, 11/17, 11/19	• Special Relativity (Ch. 26) • Quantum Physics (Ch. 27)	• Expected readings: Week 12 lecture materials • Assignment: **Quiz #10** on **Fri**. at 12 pm • Assignment **Due: N/A** • Prepare for topic: Read Slides for Week 13
Week 14, 11/22, 11/24, 11/26	• Nuclear Physics (Ch. 28) • Wed- Fri: Thanksgiving Holiday	• Expected readings: Week 13 lecture materials • Assignment: **Homework #5** assigned on Mon. • Assignment **Due: N/A** • Prepare for topic: Read Slides for Week 14
Week 15 11/29, 12/01, 12/03	• Comprehensive Review	• Expected readings: Past Weeks lecture materials • Assignment: **N/A** • Assignment **Due: Homework #5** on Mon. 11:00 am • Prepare for topic: N/A
Week 16	• **Final Exam: Wed 12/08 2-4pm**	

Calendar of Assignments & Dates

Due Date	Assignment	#Points
09/03	Syllabus Quiz (Quiz #1), 11:00 am	1.5

09/03	Quiz #2 at 12 pm	1.5
09/06	Holiday: Labor Day	
09/10	Homework #1, 11:00 am	2
09/10	Quiz #3 at 12 pm	1.5
09/17	Quiz #4 at 12 pm	1.5
09/24	Quiz #5 at 12 pm	1.5
09/27	Homework #2, 11:00 am	2
Tue, October 5, 5:00 – 6:30pm	**Midterm Exam-I**	12.5
10/08	Quiz #6 at 12 pm	1.5
10/15	Holiday: Fall Recess	
10/18	Homework #3, 11:00 am	2
10/22	Quiz #7 at 12 pm	1.5
10/29	Quiz #8 at 12 pm	1.5
11/01	Homework #4, 11:00 am	2
Tue, November 9, 5:00 – 6:30pm	**Midterm Exam II**	12.5
11/12	Quiz #9 at 12 pm	1.5
11/19	Quiz #10 at 12 pm	1.5
11/24	Holiday: Thanksgiving Holiday	
11/26	Holiday: Thanksgiving Holiday	
11/29	Homework #5, 11:00 am	2
Wed 12/08 2-4pm	**Final Exam**	30

[3]Final Examination Policy

Student Scheduling Conflicts

No student is permitted to omit or take early a final examination and no instructor is authorized to permit a student to do so.

Students should plan in advance to avoid scheduling conflicts in their final examinations. If a student is scheduled for two final examinations at the same time, the student should request to take one of the examinations on a different day or time. If a student is scheduled for more than two final examinations in one day, the student may request to take one of the exams on a different day or time. In either situation the student must contact the professors involved no later than two weeks prior to the scheduled examination date and request an accommodation. If an accommodation cannot be arranged, the student should contact USC Testing Services at testing@usc.edu or (213) 740-7166 for assistance.
Faculty are reminded that grades are due 96 hours after the university-scheduled final examination day and time. Therefore, it might not be possible to accommodate late student requests for an alternate, makeup final examination after the published examination period.

Religious Observance Conflicts

When a final examination is scheduled at a time that conflicts with a student's observance of a holy day, faculty members should accommodate a request for an alternate examination date and time. A student must discuss a final examination conflict with the professor no later than two weeks prior to the scheduled examination date to arrange an acceptable alternate examination date and time.

The student and/or professor may reach out to the Office of Religious Life (213-740-6110 or vasoni@usc.edu, Dean of Religious Life) for guidance.

Documented Emergencies

In the case of a documented emergency that occurs after the withdrawal date and/or during the final exam period, students should consult the professor about receiving a grade of Incomplete (IN) for the semester. Faculty and students alike should refer to the rules regarding the mark of Incomplete at the time of the request.

The Registrar's recommended definition of emergency:

"An unforeseeable situation or event beyond the student's control that prevents her from taking the final examination or final summative experience." Based on this definition, a student may not request an IN before the withdrawal deadline. The rationale is that the student has the option to drop the course until the withdrawal date. The grade of IN exists so there is a remedy for illness or emergency, which occurs after the deadline to withdraw.

[3]From USC website