

Physics 1C – Fall 2022
Electrodynamics, Optics and Special Relativity

Instructor: Prof. J. Larkin
Email: larkin@astro.ucla.edu
Web: http://www.astro.ucla.edu/~larkin/
Office Hours: Fridays 3-4pm; or by appointment
Office: 3-937 Physics and Astronomy Building (PAB)

Course Description: Lecture/demonstration, four hours; discussion, one hour. Enforced requisites: course 1A, 1B, Mathematics 32A, 32B. Enforced corequisite: Mathematics 33A. Magnetic fields, Ampere's law, Faraday's law, inductance, and alternating current circuits. Maxwell's equations, electromagnetic waves, light, geometrical optics, interference and diffraction. Special relativity.

Physics	1C	LEC	3	LARKIN, J.E.	MTWF	2:00P-2:50P	KNSY PV	1220B
Physics	1C	DIS	003A	Jacob Tycko	W	3:00P-3:50P	ROYCE	150
Physics	1C	DIS	003B	Vincent Hou	W	4:00P-4:50P	MS	5147
Physics	1C	DIS	003C	Vincent Hou	W	5:00P-5:50P	MS	5147
Physics	1C	DIS	003D	Vincent Hou	F	10:00A-10:50A	ROYCE	162
Physics	1C	DIS	003E	Vincent Hou	F	11:00A-11:50A	BUNCHE	3143

Sections: Please attend assigned section. Worksheets during sections form 5% of your grade.

Jacob Tycko **Email:** jacobtycko@physics.ucla.edu
 Office Hours: Tuesdays 12-1pm
Vincent Hou: **Email:** vhou@physics.ucla.edu
 Office Hours: TBA

Lecture Times: MTWF 2:00-2:50 **Lecture Room:** 1220B Kinsey Pavilion
Required Textbooks: Young and Freedman, “*University Physics*” (15th Edition)

This course is part of the UCLA Inclusive Access program for “The Essential Cosmic Perspective”. Your course materials are being automatically provided to you, digitally, through the course website/CCLE before the first day of class or upon enrollment. The materials are being provided at a reduced and highly competitive price. You will receive an email from the UCLA Store with program details and cost sent directly to your email address on file with the UCLA Registrar. Check your spam folder if not received.

Everyone enrolled in this course is automatically a participant to start and will have access to the materials through 2nd week of class. Those remaining in the program after 2nd week will be billed for the materials directly to their BruinBill account and will continue to have access to the course materials. ***If do not wish to participate in Inclusive Access, you must opt-out by the Friday of 2nd week opt-out deadline or you will be charged.*** Those who opt-out will lose access to the digital materials starting week 3. If you have questions, contact inclusiveaccess@asucla.ucla.edu

Lecture Topics Covered:

1. Magnetic Field and Magnetic Forces (chapter 27)
2. Sources of Magnetic Field (chapter 28)
3. Electromagnetic Induction (chapter 29)
4. Inductance (chapter 30)
5. Alternating Current (chapter 31)
6. Electromagnetic Waves (chapter 32)
7. The Nature and Propagation of Light (chapter 33)
8. Geometric Optics (chapter 34)
9. Interference (chapter 35)
10. Diffraction (chapter 36)
11. Special Relativity (chapter 37)

Holidays: Veteran's Day: Friday, Nov 11
Thanksgiving: Thursday and Friday, Nov 24,25

Grading: The final will be **comprehensive** over the entire course.

Midterm 1: Week 4 Wednesday Oct 19, 2022	20%
Midterm 2: Week 8 Wednesday Nov 16, 2022	20%
Homeworks – Typically due Mondays at 2pm	20%
Worksheets in section (graded on effort)	5%
Final: Friday, Dec 9, 8:00am-11:00am	35%
Total:	100%

General Rules:

No makeup midterms: In extreme situations such as a written medical excuse, the final exam grade will be used for the missing midterm grade.

No late homeworks. I will drop your lowest score, so if something prevents you from completing the homework on time, that will be your dropped score.

The final exam MUST be taken for a passing grade.

Class Code of Conduct:

- Treat other students and participants with civility and respect. Diverse viewpoints encourage good discussions. Good ideas often come from the quietest participants. Rephrase, repeat, and correctly attribute them until those in authority can hear them.
- Be on time, end on time. Be in class on time, I will end class on time.
- Keep egos and biases in check. Please leave these outside the building. You may retrieve them when you leave.
- I aim to create an inclusive environment free from any form of disrespect, intimidation, bullying, discrimination, harassment, and retaliation. Please help me achieve that. This includes time in the classroom, office hours, study sessions, and ANY class-related activity.
- Please be mindful of your fellow students' learning and backgrounds and respectful of EVERYONE else in the classroom.
- As a group, we will avoid making inappropriate actions or statements based on characteristics such as age, race, ethnicity, sexual orientation, gender identity, gender expression, marital status, nationality, political affiliation, ability status, educational background, occupation, seniority etc.
- I ALWAYS welcome questions and hope you all feel free to interrupt lectures with them anytime.

Resources:

- There are NO excuses for cheating or any other form of academic dishonesty, and ALL work in this class MUST BE YOUR OWN. Midterms, finals, quizzes and labs must be completed by the student without assistance and in a manner consistent with standard testing procedures and regulations. Any cheating will be dealt with through the University. We follow the UCLA policies on intellectual integrity, which can be found at: <http://www.deanofstudents.ucla.edu/Student-Conduct>.
- The UCLA Astronomy division and your professor and teaching assistants are committed to promoting and fostering an inclusive environment to serve our diverse community of learners. Please visit our website at <http://www.astro.ucla.edu/content/astronomy-division-diversity-resources> to learn more about diversity resources and workshops. Our website also lists contact information for allies within the department who are actively working to address diversity issues. If you have questions, concerns, ideas, or feedback, we would love to hear from you!
- Title IX prohibits gender discrimination, including sexual harassment, domestic and dating violence, sexual assault, and stalking. Students who have experienced sexual harassment or sexual violence can receive confidential support and advocacy at the CARE Advocacy Office for Sexual and Gender-Based Violence, which is found on the 1st Floor of the Wooden Center West, CAREadvocate@caps.ucla.edu, (310) 206-2465. You can also report sexual violence or sexual harassment directly to the University's Title IX Office (2241 Murphy Hall) at titleix@conet.ucla.edu, (310) 206-3417.
- CAPS (Counseling and Psychological Services) offers 24-hour crisis counseling via phone (310-825-0768) as well as in-person short-term counseling for all students. Students can walk in Mon-Thurs. 9am - 4pm, Fri. 9am - 3pm and be seen by a Brief Screen Counselor on the same day, who will address immediate needs and determine future care as needed. Please visit www.counseling.ucla.edu for more mental health resources available on campus.