



Basic Course Information

Semester:	Spring 2026	Instructor Name:	Cristopher Luna
Course Title & #:	PHYS 110 – College Physics II	Email:	cristopher.luna@imperial.edu
CRN #:	21184	Webpage (optional):	
Classroom:	2731	Office #:	2767
Class Dates:	02/17/26 – 06/12/26	Office Hours:	TBA
Class Days:	Tuesday and Thursday	Office Phone #:	(760) 355 - 5720
Class Times:	6:00 PM – 9:10 PM	Emergency Contact:	Silvia Murray: 760-355-6201
Units:	4	Class Format/Modality:	Face-to-Face

Course Description

The course is part of a two-semester sequence whose contents may be offered in other sequences or combinations. Core topics include optics, electricity and magnetism and atomic and nuclear physics. (CSU)

Course Prerequisite(s) and/or Corequisite(s)

PHYS 105 - with a grade of "C" or better.

Student Learning Outcomes

Upon course completion, the successful student will have acquired new skills, knowledge, and or attitudes as demonstrated by being able to:

1. Demonstrate an understanding of the basics of the fields of electricity, magnetism, wave mechanics, optics, and modern physics, and their corresponding physical laws by correctly describing and identifying the concepts relevant to these fields.
2. Given new situations, by using various trigonometric and algebraic techniques with some discussion of relevant calculus concepts students will correctly solve a variety of physical situations by a proper application of the principles, laws, and concepts of physics.
3. Given a particular laboratory physical objective in electricity, magnetism, wave mechanics, optics, or modern physics, students will correctly construct a physical system, learn to use and manipulate laboratory apparatus, and correctly make and analyze measurements of these physical systems and write a lab report.

Course Objectives

Upon satisfactory completion of the course, students will be able to:

1. Outline and apply the fundamental concepts of static electricity.
2. Describe, use, and synthesize the concepts of electric field and electric potential.
3. Identify the basic components of a DC electrical circuit.
4. Solve problems involving DC electrical circuits.
5. Apply and adapt conservation of energy and conservation of charge (Kirchhoff's laws) in the solution of DC circuits.
6. Analyze and use the fundamental concepts of magnetism.
7. Investigate the effects of changing magnetic fields using Faraday's and Lenz's laws.
8. Identify the basic components of an AC electrical circuit.
9. Use and synthesize the concepts of electricity and magnetism in the understanding of electromagnetic waves.
10. Understand and characterize the connection between electromagnetic waves and light.
11. Describe and solve basic problems involving light - both geometrical and physical optics.
12. Explore and examine the transition from classical theory to the theory of relativity.



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13. Understand and apply the principles of the special theory of relativity to solve problems.
14. Investigate and recognize the limitations of classical physics which necessitated the introduction of quantum theory.
15. Understand, explain, and diagram the fundamental structure of atoms and nuclei.
16. Develop and utilize calculus techniques for the analysis of topics such as the electric field of a line charge and RC circuits.
17. Support, practice, and synthesize the above learning objectives through directed laboratory work.
18. Apply fundamental physical concepts to understand life-science phenomena and solve physical problems involving living systems.

Textbooks & Other Resources or Links

Textbook:

- Knight, R. D., Jones, B., & Field, S. (2022). College physics: A strategic approach (4th ed.). Pearson. ISBN: 9780135896358
 - **This is a custom ISBN for IVC and includes a discount! Please use the link on canvas!**

Course Requirements and Instructional Methods

This course will be taught entirely in-person, make sure you're on time every session!

Homework: Homework serves as a valuable tool to reinforce your understanding of the topics covered in class and to prepare for upcoming tests. We are using Pearson's MyLab for homework assignments this semester which can be purchased at a discount directly from Canvas. Homework assignments will be worth 15% of the total grade.

Laboratory: You will complete **up to 9 lab experiments** throughout the semester, working in randomly assigned groups of three. Each group will submit one lab report per experiment via the Assignments tab in Canvas.

Effective communication with your lab partners is important. It is your responsibility to coordinate with your group and schedule any additional meetings needed to complete lab reports. Claiming credit for work you did not contribute to is considered academic dishonesty and will be penalized.

Lab Reports: Lab reports should be typed with all relevant figures labeled and properly referenced. Please generate your graphs in excel or in Matplotlib, do not include hand-drawn graphs or tables. Please see the lab report format document on canvas.

Exams: There will be **3 exams** during the semester, collectively worth **40% of your final grade**. Exams will primarily consist of free-response questions, with some multiple-choice questions when appropriate. Each exam will cover specific chapters and will not be cumulative, see attached schedule for chapter breakdown. **Your lowest of the 3 exam scores will be dropped.**

Final Exam: There will be a final exam that is worth 20% of your final grade. Exam will consist of free-response questions, with some multiple-choice questions when appropriate. This exam can include material from the previous 3 exams.

Partial credit will be awarded for relevant work shown on free-response questions.

IMPORTANT

There will be no make-up assignments or exams unless you have a verifiable compelling reason. If you have documentation demonstrating unforeseen and extreme circumstances for yourself or other family members, please contact me as soon as possible. It is your responsibility to notify me and provide me with those documents so we can arrange an assignment make-up. Forgetting to turn in assignments, not checking e-mail, planned events, etc. are not valid excuses.

No Exceptions.

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Course Grading Based on Course Objectives

Component	Weight
Homework	15%
Lab Reports	25%
Midterm Exams	40%
Final Exam	20%

Description of Grading Scale	Distribution
A standard grade distribution will be followed.	A: 90% - 100%
	B: 80% - 89.9%
	C: 70% - 79.9%
	D: 60% - 69.9%
	F: 0% - 59.9%

Academic Honesty (Artificial Intelligence -AI)

IVC values critical thinking and communication skills and considers academic integrity essential to learning. Using AI tools as a replacement for your own thinking, writing, or quantitative reasoning goes against both our mission and academic honesty policy and will be considered academic dishonesty, or plagiarism unless you have been instructed to do so by your instructor. In case of any uncertainty regarding the ethical use of AI tools, students are encouraged to reach out to their instructors for clarification. **Any work that is found to be AI assisted will result in an automatic score of zero without the opportunity to resubmit the assignment.**

Course Policies

Initial Class Attendance:

Students are required to attend the first session of the course or complete the first mandatory activity for online classes. Failure to do so will result in automatic removal from the class roster. Students seeking readmission will follow standard procedures outlined in the General Catalog for adding classes.

Regular Attendance:

Attending classes is crucial for grasping the content and concepts covered. Students are expected to attend all class sessions, actively participate in discussions, and engage in class activities. I will keep a record of attendance during each class. Continuous, unexcused absences that exceed the equivalent of 3 class hours per week may result in the student being dropped from the course.

Excused Absences:

Students are allowed a reasonable number of excused absences due to illness, emergencies, or officially approved events (conferences, contests, field trips). **Proper documentation is required.** In cases of excused absences, you are responsible for obtaining missed class materials, notes, and assignments from classmates. It's advised to communicate with your peers to stay up to date on class content.

Classroom Conduct:



Our class thrives on a respectful and collaborative classroom atmosphere. Your engagement and behavior significantly impact the learning experience. Please approach each session with respect for me (your instructor), peers, and the content. Actively participate in discussions, foster inclusivity, and avoid distractions from personal devices. Disruptive behavior, offensive language, and personal attacks have no place in our environment. Maintain focus during lectures, raise questions appropriately, and embrace a supportive attitude.

Any distractions will be addressed with a warning, and repeated disruptive behavior may lead to temporary removal from the classroom. Let's work together to ensure a positive and enriching learning environment for everyone involved.

Academic Integrity:

Maintaining the highest standards of academic integrity is paramount here at Imperial Valley College. Plagiarism, which includes presenting someone else's work, ideas, or words as your own without proper attribution, will not be tolerated. Any form of academic dishonesty undermines the learning process and diminishes the trust within our community of learners. It is essential that all assignments and contributions reflect your genuine efforts and understanding. Upholding academic honesty not only preserves the integrity of your work but also respects the intellectual property of others. Any instances of plagiarism will result in appropriate actions, following the college's established guidelines. **Any work that is found to be plagiarized will result in an automatic score of zero without the opportunity to resubmit the assignment.**

Tips

- Make sure to be on time every day!
- Read the lecture notes online after class, it helps you remember what we covered!
- Read the book! There's a ton of figures and links for you to explore the subject and get clarification on difficult concepts. You can go at your own pace and supplement the book with your notes.
- Pay attention during lectures and take notes!
- Come to office hours!

If you're struggling with the class, please let me know, there may be additional resources that I can provide you with to ensure that you can succeed in this class!

IVC Student Resources

IVC wants you to be successful in all aspects of your education. For help, resources, services, and an explanation of policies, visit <http://www.imperial.edu/studentresources> or click the heart icon in Canvas.



Anticipated Class Schedule/Calendar

The schedule below follows the chapter numbering and titles from *Physics for Scientists and Engineers, 4th Edition* by Randall Knight. Chapter names and numbering may vary between different textbooks, but topics remain the same.

Date or Week	Lecture Topic	Read Chapters
Week 1 2/16	Chapter 20: Charges and Forces	20
Week 2 2/23	Chapter 20: Fields	20
Week 3 3/2	Chapter 21: Electric Potential + Energy	21
Week 4 3/9	Chapter 22: Current, Ohm's Law, and Power	22
Week 5 3/16	Chapter 23: Circuits	23
Week 6 3/23	Chapter 23: Circuits & Exam 1 (Ch 20-23)	23
Week 7 3/30	Chapter 24: Magnetism and Forces	24
4/6	~SPRING BREAK~ ~No Class~	
Week 8 4/13	Chapter 25: Electromagnetic Waves & Induction	25
Week 9 4/20	Chapter 17: Wave Optics	17
Week 10 4/27	Chapter 17: Wave Optics & Exam 2 (Ch 24, 25, 17)	17
Week 11 5/4	Chapter 18: Ray Optics	18
Week 12 5/11	Chapter 27: Relativity	27
Week 13 5/18	Chapter 27 & 28: Relativity & Intro to Quantum	27 & 28
Week 14 5/25	Chapter 28: Quantum Physics & Exam 3 (Ch 18, 27, 28)	28
Week 15 6/1	Chapter 30: Nuclear Physics	30
Week 16 6/8	Review	Final Exam

Anticipated Exam Schedule

EXAM 1	Chapters 20, 21, 22, 23	Thursday, March 26th
EXAM 2	Chapters 24, 25, 17	Thursday, April 30th
EXAM 3	Chapters 18, 27, 28	Thursday, May 28th



FINAL	Comprehensive	Thursday, June 11
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Note 1: The schedule is tentative regarding the chapters covered. We may spend more or less time on specific chapters depending on the needs of my students.

Note 2: The content of the course material may be changed based upon other priorities.

*****Subject to change without prior notice*****