



IMPERIAL VALLEY COLLEGE

Basic Course Information

Semester:	SPRING 2026	Instructor Name:	Cristopher Luna
Course Title & #:	PHYS 204 – General Physics III	Email:	cristopher.luna@imperial.edu
CRN #:	20958	Webpage (optional):	
Classroom:	2731	Office #:	2767
Class Dates:	02/17/26 – 06/12/26	Office Hours:	TBA
Class Days:	Monday & Wednesday	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

This course is designed to give an understanding of the fundamental principles of physics in the areas of waves, heat, light, relativity, quantum mechanics and atomic physics. (C-ID: PHYS 215 or PHYS 200S when used with IVC PHYS 200 + PHYS 202 + PHYS 204) (CSU/UC)

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

PHYS 200 and MATH 194 - 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. Solve problems involving temperature, heat, and the laws of Thermodynamics.
2. Solve problems involving geometric optics (reflection and refraction including lenses and mirrors).
3. Solve problems involving physical optics (interference, diffraction, and polarization).

Course Objectives

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

1. Solve problems involving interference, reflection, and transmission of transverse waves.
2. Solve problems involving velocity, frequency, energy, intensity, and the Doppler effect of sound waves.
3. Solve problems involving resonance, super-position and interference of standing waves in air, strings, rods and plates.
4. Solve problems involving temperature, thermometric properties, and temperature scales.
5. Solve problems involving thermal energy, heat capacity, latent heat, heat transfer, and the first law of thermodynamics.
6. Solve problems involving the kinetic theory of gases and the concepts of ideal gases.
7. Solve problems involving heat engines, refrigeration, entropy, and the second law of thermodynamics.
8. Solve problems involving Huygens' Principle, reflection, and refraction.
9. The student will solve problems involving images formed by plane mirrors, spherical mirrors, and thin lenses.
10. Solve problems involving interference of light waves, Young's Double Slit Experiment, and interference in thin films.
11. Solve problems involving single slit diffraction, resolution, diffraction gratings, and polarization.
12. Solve problems involving Einstein's Theory of special relativity.
13. Solve problems involving the hypothesis of Planck, Einstein's photoelectric effect, atomic spectra, and the Bohr theory of the atom.



14. Solve problems involving the wavelike properties of particles, the uncertainty principles, and the Schrodinger wave equation.
15. Solve problems involving the hydrogen atom, quantum numbers, electron spin, and the exclusion principle.

Textbooks & Other Resources or Links

Textbook: (required)

- Physics for Scientists and Engineers (4th Edition) with Mastering Access. Pearson. Knight, Randal D. ISBN: 9780135896419
 - Use the link from our bookstore to access special pricing for this book! **Do not buy it from Amazon, we have a discount!**

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. To facilitate this, you will be assigned problem sets on canvas for each chapter. Homework assignments will be worth 10% 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.

One or two labs may require the use of Python in a development environment. No prior programming experience is required—template scripts will be provided, and the actual coding will be minimal.

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. Groups are subject to change.

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 **three exams** during the semester, collectively worth **40% of your final grade**, along with a **final exam worth 20%**. Exams will primarily consist of free-response questions, with some multiple-choice questions when appropriate. The first three exams will cover specific chapters and will not be cumulative, see attached schedule for chapter breakdown. The final exam will cover material from the entire semester.

Partial credit will be awarded for relevant work shown on free-response questions. At the end of the semester, your **lowest score among the first three exams will be dropped**. However, **the final exam cannot be dropped**.

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.



Course Grading Based on Course Objectives

Component	Weight
Homework	10%
Lab Reports	30%
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.

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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! The slides will be made available but if you're not actively taking notes, it's harder to retain information.

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 15 – SHM and Pendulum	15
Week 2 2/23	Chapter 16 – Traveling Waves	16
Week 3 3/2	Chapter 16 – Traveling Waves	16
Week 4 3/9	Chapter 17 – Superposition	17
Week 5 3/16	Chapter 17 – Superposition & Exam 1 (in lab)	17
Week 6 3/23	Chapter 18 – Thermodynamics	18
Week 7 3/30	Chapter 19 – First Law of Thermodynamics	19
4/6	~SPRING BREAK~ ~No Class~	
Week 8 4/13	Chapter 20 – Second Law of Thermodynamics	20
Week 9 4/20	Chapter 21 – Heat Engines & Exam 2 (in lab)	21
Week 10 4/27	Chapter 33 – Wave Optics	33
Week 11 5/4	Chapter 34 – Ray Optics	34
Week 12 5/11	Chapter 34 – Ray Optics & Exam 3 (in lab)	34
Week 13 5/18	Chapter 36 – Relativity	36
Week 14 5/25	Chapter 36 – Relativity	36
Week 15 6/1	Chapter 37 & 38 – Modern Physics & Quantization	37 & 38
Week 16 6/8	Chapter 38 – Quantization	Final Exam

Anticipated Exam Schedule

EXAM 1	Chapters 15, 16, 17	Wednesday, March 18th
EXAM 2	Chapters 18, 19, 20, 21	Wednesday, April 22nd
EXAM 3	Chapter 33, 34	Wednesday, May 13th
FINAL EXAM	Comprehensive	Wednesday, June 10th



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*****