



IMPERIAL VALLEY COLLEGE

Basic Course Information

Semester:	FALL 2023	Instructor Name:	Cristopher Luna
Course Title & #:	PHSC 110: Physical Science	Email:	cristopher.luna@imperial.edu
CRN #:	10039	Webpage (optional):	
Classroom:	2731	Office #:	2767
Class Dates:	08/14/23 – 12/09/23	Office Hours:	M/W 9:45 AM – 10:45 AM Tuesday 1 PM – 2:30 PM Thursday 1 PM – 1:30 PM
Class Days:	Monday & Wednesday	Office Phone #:	TBA
Class Times:	11:20 AM – 12:45 AM	Emergency Contact:	Silvia Murray: 760-355-6201
Units:	3	Class Format/Modality:	Face-to-Face

Course Description

This course is designed to give an understanding of the fundamental principles of physics and chemistry as they relate to the structure and properties of matter and the principles of motion and energy, for liberal studies students. (CSU, UC credit limited. See a counselor.)

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

None

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. Conceptualize the fundamental differences between mass and weight and between speed and velocity, using illustrative examples.
2. Comprehend and apply the principle of Conservation of Energy to simple machines, e.g. levers.
3. Distinguish between series and parallel circuits, identifying their advantages and disadvantages.

Course Objectives

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

1. Describe the motion of objects based on position, displacement, velocity, speed and acceleration.
2. Recognize that forces (pushes and pulls) such as gravity, magnetism and, friction act on objects and may change their motion if these forces are not in balance.
3. Recognize the differences between kinetic energy, potential energy, work, power, and their application to machines.
4. Know the difference between weights and masses and weights of objects using the Universal Law of Gravitation.
5. Know the difference between temperature and heat and know the law of thermodynamics.
6. Describe the methods of heat transfer and know the phases of matter and how one phase is converted to another.
7. Recognize the differences between electrical forces, voltages, currents, resistance, series circuits, and parallel circuits.
8. Understand the origin of magnetic forces and their application in meters, motors, and generators.
9. Describe wave motion including longitudinal and transverse waves and applications to sound waves.
10. Understand the origin of light waves and the application of frequency to the electromagnetic spectrum and color.
11. Know the difference between reflection and refraction of light.

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12. Understand the composition of the atom and the classification of atoms by the periodic table.
13. Understand atomic structure and identification of atoms using a spectroscope.
14. Understand properties of the nucleus including fission, fusion, and radioactive decay.
15. Recognize physical and chemical properties of elements and compounds.
16. Understand mixtures and determining means of classifying and separating them.
17. Understand Ionic, polar, covalent, and metallic bonds.
18. Describe chemical reactions.
19. Understand the chemical properties of acids and bases.

Textbooks & Other Resources or Links

Textbook: Conceptual Physical Science (6th Edition) with Mastering Physics OR Conceptual Physical Science (6th Edition) /A la Carte Edition. Pearson. Hewitt, Paul G., John Suchocki, and Leslie A. Hewitt. ISBN: 9780134060491

We are using Hewitt's "Conceptual Physical Science, 6th Edition" textbook for our course. Be sure to purchase the access code to gain access to your homework assignments! Homework is done online so if you choose to purchase a pre-owned book, you'll need to pay for online access. The most affordable way to get the book and access to homework is to buy the e-book + Mastering Physics bundle from their site! The bundle's ISBN is 9780134091983.

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, we'll be using an online platform for assignments at

<https://mlm.pearson.com/enrollment/luna36040>

The course ID is **luna36040**

Enrollment will be open from 08/14/23 to 09/09/2023. Please note that signing up for homework won't be possible after this date. All assignments must be completed by 12/15/23, 11:59 PM, after which the course will be inaccessible. For precise dates, refer to the Pearson webpage, as they may vary slightly from the setup.

Take advantage of a 14-day free trial before subscribing. You'll find Student Registration Instructions at the end of the course syllabus.

Please see the last page for registration instructions, thank you!

Discussions: There will be several in-class activities that you'll need to complete in groups for this class. In-class assignments may be written summaries, short calculations, discussions, etc., which will be due at the end of class. This will also include your participation in the activities and engagement during lectures.

Quizzes: There will be a quiz at the end of every chapter which may include questions that are multiple choice, true/false, matching, or fill in the blank. Quizzes will be available on Fridays at 8 AM and close two days later, Sunday at 11:59 PM. See canvas for quiz dates!



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Midterm Exams: There will be **3 Midterm Exams** worth 15% each during the semester. Midterms will be mostly multiple choice but may include other formats such as T/F and fill in the blank questions. Each Midterm will cover specific chapters and will not be cumulative. You will have the entire class period to complete your exam, please bring a pencil and a Scantron 882-E. Make sure it's an official "Scantron Brand" scantron, other brands do not work on our grader.

Final Exam: You will have a comprehensive final exam covering material from every chapter we studied worth 20%. The Final Exam will be mostly multiple-choice questions but may also include other question formats such as true/false, matching, or fill in the blank. You will have the entire class period to complete your exam, please bring a pencil and a Scantron 882-E. Make sure it's an official "Scantron Brand" scantron, other brands do not work on our grader.

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

Homework: 15%

Quizzes/Discussions: 20%

Midterm Exams: 3 Exams, 15% each, total weight: 45%

Final Exam: 1 comprehensive final exam, total weight: 20%

Grading Scale:

A: 90 – 100%

B: 80 – 89%

C: 70 – 79%

D: 60 – 69%

F: 59% and below

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

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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.

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

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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

Date or Week	Lecture Topic (Monday)	Lecture Topic (Wednesday)	Assignments
Week 1 08/14 – 08/18	Chapter 1: Patterns of Motion & Equilibrium	Chapter 1 & 2: Motion and Newton's Laws	
Week 2 08/21 – 08/25	Chapter 2: Newton's Laws	Chapter 2: Newton's Laws	
Week 3 08/28 – 09/01	Chapter 3: Linear Momentum	Chapter 3: Linear Momentum & Energy	
Week 4 09/04 – 09/08	Labor Day! No Class!	Exam 1: Chapters 1 – 3.3 (Momentum only)	
Week 5 09/11 – 09/15	Chapter 3: Energy & Work	Chapter 3: Energy & Work	
Week 6 09/18 – 09/22	Chapter 4: Gravity	Chapter 4: Projectiles and Satellites	
Week 7 09/25 – 09/29	Chapter 6: Thermal Energy and Thermodynamics	Chapter 6: Thermal Energy and Thermodynamics	
Week 8 10/02 – 10/06	Chapter 7: Heat Transfer	Exam 2: Chapters 3.4 - 7	
Week 9 10/09 – 10/13	Chapter 8: Static Electricity	Chapter 9: Electromagnetism	
Week 10 10/16 – 10/20	Chapter 9: Electromagnetism	Chapter 10: Waves and Sound	
Week 11 10/23 – 10/27	Chapter 10 & 11: Waves and Sound	Exam 3: Chapters 8 – 11	
Week 12 10/30 – 11/03	Chapter 12: Atoms and the Periodic Table	Chapter 12: Atoms and the Periodic Table	
Week 13 11/06– 11/10	Chapter 13: The Atomic Nucleus and Radioactivity	Chapter 14 & 17: Elements of Chemistry & How Chemicals React	
Week 14 11/13– 11/17	Chapter 14 & 17: Elements of Chemistry & How Chemicals React	Chapters 15 & 16: How Atoms bond and Molecules Attract	
Week 15 11/20– 11/24	Thanksgiving Break! No Classes!	Thanksgiving Break! No Classes!	
Week 16 11/27– 12/01	Chapters 15 & 16: How Atoms bond and Molecules Attract	Chapter 18: Two Classes of Chemical Reactions	
Week 17 12/04– 12/08	Final Exam Review	Final Exam	

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*****

Mastering Physics Registration Instructions

To register for PHSC 110: Physical Science:

1. Go to <https://mlm.pearson.com/enrollment/luna36040>
2. Sign in with your Pearson student account or create your account.
3. Select any available access option, if asked.
 - Enter a prepaid access code that came with your textbook or from the bookstore.
 - Buy instant access using a credit card or PayPal.
 - Select Get temporary access without payment for 14 days.
4. Select Go to my course.
5. Select PHSC 110: Physical Science from My Courses.

If you contact Pearson Support, give them the course ID: luna36040

To sign in later:

1. Go to <https://mlm.pearson.com>
2. Sign in with the same Pearson account you used before.
3. Select PHSC 110: Physical Science from My Courses.