



IMPERIAL VALLEY COLLEGE

PHYSICAL SCIENCE 110

Course Syllabus – Summer 2013

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Office Hours: No office hours during summer school

Code: # 30151

Class Meetings: Monday through Thursday 10:00 AM - 12:10 P.M. in Room 2731.

Textbook: Conceptual Physics Science (4th Edition) ISBN 0-321-516958

Author: Hewitt, Paul G., John Suchocki, and Leslie A. Hewitt.

Prerequisite: None

Recommended Preparation: Math 091 with a grade of "C" or better.

Credit Units: 3.0

Course Philosophy

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 the liberal studies student.

Measurable Course Objectives and Minimum Standards for Grade of "C"

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 laws 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.
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. Understanding ionic, polar, covalent and metallic bonds.
18. Describe chemical reactions.
19. Understand the chemical properties of acids and bases.

INSTITUTIONAL LEARNING OUTCOMES (ISLOs):

1. Communication Skills
2. Critical Thinking Skills
3. Personal Responsibility
4. Information Literacy
5. Global Awareness

STUDENT LEARNING OUTCOMES (SLOs)

1. Conceptualize the fundamental differences between mass and weight and between speed and velocity, using illustrative examples.
2. Through experimentation involving the use of levers, students will investigate and apply the principle of Conservation of Energy to simple machines.
3. Distinguish between series and parallel circuits, identifying their advantages and disadvantages.

Grading Criteria

Course must be taken on a "letter-grade" (LG) basis only.

Grading Policy

The student's grade will depend on the following areas:

Special Project (Oral/Written)	20% (100points)
Homework	20% (100 points)
Exam # 1	15% (75 points)
Mid-term	20% (100 points)
Final Exam	25% (125 points)
Total	100%

All grades are calculated by using the standard scale of:

A = 100-90%	B = 89-80%	C = 79-70%
D = 69-60%	F = 59% and below	

Class Rules and Expectations

1. Students are expected to be actively involved in the learning process so failure is not a good choice; apply yourself, study, do not give up on the first try, attend class regularly, ask for help when needed, and always do your best!

2. Students are expected to attend class meetings regularly. After the second absence, if the student does not drop the class via Webstar, he/she will receive an "F" as final grade; so it is the student's responsibility to drop before the deadline.
3. ABSENCES. What constitutes an absence? Not showing up to class during a regular class meeting, or arriving more than 20 minutes after the beginning of the class, or leaving more than 20 before the end of the class.
 - a. Example: Class starts at 10:00 AM and ends at 12:10 PM. If you arrive after 10:20 AM you are absent. If you leave before 11:50 AM you are marked absent. If you leave the room for more than 20 minutes for whatever reason, you are absent.
4. TARDIES. What constitutes a tardy? Arriving within the first 20 minutes after the beginning of the class or leaving within the last 20 minutes before the end of the class (3T = 1A).
 - a. Example: Class starts at 10:00 AM and ends at 12:10 PM. If you arrive between 10:01 AM and 10:20 AM you are marked tardy. If you leave between 11:51 AM and 12:10 PM you are marked tardy as well as if you "disappear" from the room for no more than 20 minutes (i.e. having lunch). If you need to use the restroom, you are expected to return within a reasonable time period.
 - b. If you are late to class, please enter the room quietly, do not distract your classmates, and avoid talking to them to find out what is going on in class (it is your responsibility to arrive on time). On the second offense you will be dropped from class.
5. If a student reaches the third absence after the deadline, his/her grade will be reduced one letter grade for each subsequent absence.
 - a. Example: your current grade is an "A." On the 3rd absence you will get a final grade of "B." On the 4th one, your grade is "C," and on the 5th one, a "D." Beyond that, your final grade is "F." Exceptions include-for example- hospitalization for several days and with appropriate documentation.
6. Deadline to drop the class with a "W" is July 23, 2013. Late drops on graded classes will require that the student receive an F.
7. Class materials such as a notebook or binder with lined or quad ruled paper, pen, pencil, scientific calculator, and the textbook will be brought to every class meeting.
8. It is up most important that students review the material to do well on exams. Students are encouraged to form study groups to meet regularly to keep up with assignments and to study for tests/mid-term/final exam.
9. Late assignments will not be accepted. It is student's responsibility to turn assignments in when they are due regardless he/she is absent (no excuses!).
10. Students will not be allowed to make up an exam or final exam.
11. The work is individual which means that you are responsible for what you turn in. Identical assignments will not be accepted; failure to comply will result in a "zero" for that specific assignment.
12. No photocopied textbooks are allowed. No audible pagers, cell phones, and music players (IPODs, MP3, etc.) allowed during class time. You will be dropped on your second offense for disturbing the class in this manner.
13. No food or drinks are allowed in the classroom.

14. No children are allowed in the classroom.
15. Absences attributed to the representation of the college at officially approved conferences and contests and attendance upon field trips will not be counted as absences (this includes sports). However, the student is responsible for notifying the instructor and for the work done in class. If your absence coincides with an exam, it is student's responsibility to contact the instructor via e-mail or by phone before the following class meeting to make it up. Failure to do so will result in a "zero" for that particular exam.
16. Classroom Etiquette-In class, it is expected that you will treat your instructor and each other with respect. Do not talk when the instructor is lecturing except to ask a question to the instructor or answer a question posed to the class. Feel free to ask questions as needed and listen when someone else is asking a question because you may have the same one.
17. Discipline: you need to understand that this is a college class so appropriate behavior is expected at all times (i.e. not speaking out of turn, raise your hand to talk and wait until acknowledged, paying attention, avoid side comments, not answering your cell phone in class, working in assignments for another class, etc.). For this reason, no discipline problem will be tolerated.
 - a. First offense: warning.
 - b. Second offense: student will immediately be dropped from the class.
18. Academic Integrity- If a student is found cheating in a test or assignment, he/she will receive a grade of zero for the test. If cheating is repeated, he/she will receive a grade of F for the course and will be immediately dropped from the class.
19. Any student with a documented disability who may need educational accommodations should notify the instructor or the Disabled Student Programs and Services (DSP & S) office as soon as possible. DSP&S, Room 2117, Health Sciences Building, (760) 355-6312.
20. Special Project:
 - a. Option a: A written report and PowerPoint presentation will be assigned according to students' preferences and presentation dates will be according to the calendar of topics. The written report should be about five pages long, size 12, double space, at least five bibliography sources, about 20 slides, and a one-page summary for classmates.
 - b. Option b: You may present to a "group of students" of any grade level of your choice. Refer to www.cde.ca.gov for CA Science Content Standards. Make a detailed lesson plan with the standard(s) addressed, goal(s) of your lesson, activities, and assessment. Bring copies for your classmates and teach the lesson to them. Demos and visuals are highly recommended.
 - c. Please refer to grading rubric found in the webpage.
 - d. Bring your own computer for the presentation.
21. Homework: The purpose of homework is to provide students with additional practice to reinforce concepts and help them to get ready for tests. For each chapter you will need to answer any combination of problems, questions, and exercises for a total of twenty (20), not answered previously in class. Each HW assignment is due two days after the chapter completion. Example: if we finish chapter 1 on May 22nd, HW is due May 24th. No exceptions!
22. Calendar: please see below.

WEEK # DAY	CORE CONTENT	% OF COURSE	READING	ASSIGNMENT DUE
1-June 24	Syllabus / Introduction Patterns of Motion and Equilibrium	7%	Chapter 1	
1-June 25	Patterns of Motion and Equilibrium	7%	Chapter 1	
1-June 26	Newton's Laws of Motion	7%	Chapter 2	
1-June 27	Momentum and Energy	5%	Chapter 3	
2- July 01	Newton's Law of Universal Gravitation Review for Exam # 1	2%	Chapter 4	
2- July 02	Exam # 1			Exam # 1 Chapters 1-4
2- July 03	Thermal Energy and Thermodynamics	5%	Chapter 6	
2-July 04	NO CLASS			
3-July 08	Heat Transfer and Change of Phase	6%	Chapter 7	
3-July 09	Static and Current Electricity	7%	Chapter 8	Presentations
3-July 10	Magnetism and Electromagnetism	6%	Chapter 9	Presentations
3-July 11	Waves and Sound	4%	Chapter 10	Presentations
4-July 15	Light Waves Properties of Light	4%	Chapter 11	Presentations
4-July 16	Review for Mid-term			Presentations
4-July 17	Mid-term Exam			Mid-term Chapters 6-11
4-July 18	Atoms and the Periodic Table	4%	Chapter 12	Presentations
	Atomic Models	5%	Chapter 12	
5-July 22	The Atomic Nucleus	8%	Chapter 13	Presentations
5-July 23	Elements of Chemistry	6%	Chapter 14	Presentations
5-July 24	How Atoms Bond	5%	Chapter 15	Presentations
5-July 25	Mixtures	4%	Chapter 16	Presentations
6-July 29	Chemical Reactions	5%	Chapter 17	Presentations
6-July 30	Acids and Bases	5%	Chapter 18	Presentations
6-July 31	Review for Final Exam			---
6-August 01	Final Exam	---		Final Exam Chapters 12-18