

Conceptual Physics Spring 2016

Section	PHYS-D010-61 CRN: 01749
Instructor	Dr. Patrick Huet
Email	huetpatrick@fhda.edu
Office	S13
Office Hours	Wed, 4:30-5:30 PM
Lecture Hours	Mon & Wed, 5:30-7:45 PM
Textbook	Conceptual Physics, 11/12 th Edition, Hewitt
Prerequisites	Qualifying score on Intermediate Algebra Placement Test or Mathematics 105 or Mathematics 114
Final Exam Date	(TBC) Monday, June 20, 6:15-8:15 PM
Course Website:	Masteringphysics.com; courseID PHUET14734

Course Description:

This course is a non-technical introduction to the ideas and principles of physics from a purely conceptual standpoint. Although few mathematical techniques will be used, the course will remain accurate in its description of our understanding of the physical laws of Nature. We will touch upon the major developments of physics from early ages to this modern era. We will also attempt to highlight applications of physics to technology and society. This is a broad topic and this course will not be able to cover the subject in its entirety. We will start with a general overview of science and its evolution, proceed with a description of space and mechanical motion, the study of Newton's laws, energy and momentum conservation. Then, we will move on to describing the structure and properties of matter, heat and thermodynamics, electricity and magnetism, light, and waves. We will attempt to make time for discussions on such topics as relativity, quantum mechanics, particle physics and astrophysics that are the highlights of 20th century physics and to connect to our present understanding of the physics of the universe, including the recent news on the discovery of the Higgs particle, gravitational waves and dark energy.

Textbook and additional reading:

Our official textbook is *Conceptual Physics*, Hewitt, 11/12th edition. Supplemental and optional reading material will be posted on the course website as the course progresses. The course website is masteringphysics.com and will also be used for homework, announcements and other documents sharing. A one-time registration is required. An access code can be purchased during online registration.

Student Learning Outcomes:

Critically examine new, previously un-encountered problems, analyzing and evaluating their constituent parts, to construct and explain a logical solution utilizing, and based upon, the fundamental laws of physics in general.

Readings and Class Participation:

You must attend class regularly. If you do not regularly attend, you will be dropped from the class. This course includes class discussions. Part of your final grade will depend on your contributions in class. Make sure you do the assigned reading prior to the class, so that you are prepared to answer questions.

Homework and Quizzes:

Homework problems are assigned weekly from each chapter of the textbook and are completed online on masteringphysics.com. Grading is done automatically - Remember that you need to create an account to access this website. Once logged on, your calendar will show you the homework assignment as well as its due date. For material that depart from the textbook, additional assignments may be provided in the form of reading of science articles and question/problem sets or essay questions.

There will be quizzes to test your knowledge of the material (lecture and textbook material) as well as your problem solving ability – Homework will also prepare you for the latter.

Exams:

There will be a midterm set in class time and a comprehensive final exam at the end of the course. Both will count toward your final score, and there will be no make-up tests. In order to do well on the exams, attend all classes, read the textbook, review the quizzes, and do the homework problems. To get credit for the answer on an exam, you must make it clear that you understand the reasoning that got you to the answer.

Presentation

Each student in the class will be expected to prepare and present a ten-minute talk to deliver to the class in the final weeks of the course. You should demonstrate that you understand the scientific ideas discussed in this course.

Grading Policy:

Grade A	88-100%
Grade B	76-88%
Grade C	64-76%
Grade D	52-64%

Class Participation & Attendance	20%
Homework & Quizzes	20%
Presentation	20%
Midterm	20%
Final Exam	20%

Grading of homework, quizzes, presentation, and exams will emphasize conceptual understanding and critical thinking. Students' participation and attendance contribute significantly to the final grade and constitute a critical factor in rounding off to the final grade (Extra credits).

Academic Integrity:

Students must adhere to the general principles of academic integrity. Plagiarism or other form of violation of academic integrity may result in a failed grade.

Disability Support Services:

Let your instructor know if you need any support in that regard.