

Providence Extension Program

Conceptual Physics • 2016-2017

Class times • M/W 10-11am; T/R 10-11am & 11am-12pm

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Office hours: M/T/R 4-7pm; F 8-9am

Textbook

Physics, A First Course, Tom Hsu, Ph.D., CPO Science (2012), ISBN 978-1-60431-203-4

Materials Needed

Notebook paper (looseleaf or in a notebook), pen or pencil, scientific or graphing calculator, ruler with English and Metric units

Prerequisites

Pre-Algebra (recommended to have taken or be concurrently taking Algebra 1)

Course description

This course is a study of the interactions and properties of the physical universe. The focus of the course will be the development of an intuitive, conceptual understanding of the fundamental principles of physics, and a deeper understanding of the nature of God as seen through His creation. Students will collect, analyze, and evaluate experimental data. Mathematics will be employed to describe various events and ideas. Topics include Newtonian mechanics, wave motion, electromagnetism, and work and energy. If time allows, relativity and quantum theory will also be introduced.

Grading Scale and Weights

A:	90 to 100	Homework	25%
B:	80 to 89	Tests	45%
C:	70 to 79	Labs	20%
D:	60 to 69	Participation	10%
F:	0 to 59		

Other information

Please make use of the above contact methods for help with homework during the week (including weekends). If you call and there is no answer, please leave a message. Do NOT send texts or contact me via Engrade, please. Whether you send an email or leave a voicemail, please remember that I am teaching all day each weekday, so I might not get to respond immediately.

Class Time

The co-op classes will be as scheduled according to PEP. The time will be used to lecture over the module being covered that week, answer any questions from the reading, problems, or tests, and work practice problems. The intent of the lecture is to (a) give an extensive preview/review of the reading assignment for the week, and (b) demonstrate and explain the mathematics involved by working practice problems. Students are expected to take notes and copy examples worked out in class for later reference, and are expected to be in class on time with the appropriate materials.

Homework

Homework will be assigned for each chapter, and will be graded by the instructor. The homework assignments must be turned in to the instructor by the due date that they are assigned. Penalties may be applied to late assignments.

Tests

Tests will be administered online, via ClassMarker. The tests will be closed- book and closed-notes unless otherwise specified; the test is to be taken at one sitting, supervised by the parent, and within a 75-minute timeframe. A 10% deduction may be taken for every class period after the due date that a test must be extended. If a student has questions regarding an exam, he/she may try to contact the instructor for help, but should still complete all items as thoroughly as possible. The student should notify the instructor of any misunderstood or unclear items immediately during or after the test (via phone or email). This is the only opportunity to dispute problems. Concessions will not be made for any reason if this testing procedure is not followed.

Labs

Some class time will be used to conduct laboratory experiments. Handouts will be either provided in class or emailed to students to be printed out and brought to class. Please read all labs before coming to class so you are familiar with the set-up and expectations during class, and come to class with any necessary items (calculator!) you may need.

Quarter	Week #	Date	Day	Content	Quarter	Week #	Date	Day	Content
1	1	8/22/16-8/26/16	M/T	Ch. 1 - Describing the Physical Universe	3	17	1/9/17-1/13/17	M/T	Ch. 12 - Electric Circuits
			W/R					W/R	
	2	8/29/16-9/2/16	M/T	Ch. 2 - Describing Motion		18	1/16/17-1/20/17	M/T	Ch. 13 - Electrical Systems
			W/R					W/R	
	3	9/5/16-9/9/16	M/T	Labor Day		19	1/23/17-1/27/17	M/T	Ch. 14 - Electrical Charges and Forces
			W/R	W/R					
	4	9/12/16-9/16/16	M/T	Ch. 3 - Laws of Motion		20	1/30/17-2/3/17	M/T	Ch. 15 - Magnetism
			W/R					W/R	
5	9/19/16-9/23/16	M/T	Ch. 4 - Conservation Laws	21	2/6/17-2/10/17	M/T	Ch. 16 - Electromagnets and Induction		
		W/R				W/R			
6	9/26/16-9/30/16	M/T	Ch. 5 - Forces in Equilibrium	22	2/13/17-2/17/17	M/T	Ch. 17 - Fields and Forces		
		W/R				W/R			
7	10/3/16-10/7/16	M/T	Ch. 6 - Systems in Motion	23	2/20/17-2/24/17	M/T	Ch. 18 - Harmonic Motion		
		W/R				W/R			
8	10/10/16-10/14/16	M/T	Ch. 7 - Machines, Work, and Energy	24	2/27/17-3/3/17	M/T	Ch. 19 - Waves		
		W/R				W/R			
9	10/17/16-10/21/16	M/T	Ch. 8 - Energy Flow and Systems	3/6/17-3/17/17			Spring Break		
		W/R		W/R					
10	10/24/16-10/28/16	M/T	Ch. 9 - Matter and Energy	4	25	3/20/17-3/24/17	M/T	Ch. 20 - Sound	
		W/R					W/R		
11	10/31/16-11/4/16	M/T	Ch. 10 - The Atom	26	3/27/17-3/31/17	M/T	Ch. 21 - Light and Color		
		W/R				W/R			
12	11/7/16-11/11/16	M/T	Ch. 11 - Relativity	27	4/3/17-4/7/17	M/T	Ch. 22 - Optics		
		W/R				W/R			
13	11/14/16-11/18/16	M/T	Ch. 9 - Matter and Energy	28	4/10/17-4/14/17	M/T	Ch. 23 - The Physical Nature of Light		
		W/R				W/R			
11/21/16-11/25/16		Thanksgiving Break			29	4/17/17-4/21/17	M/T	Ch. 22 - Optics	
14	11/28/16-12/2/16	M/T	Ch. 9 - Matter and Energy	30			4/24/17-4/28/17		M/T
		W/R			W/R				
15	12/5/16-12/9/16	M/T	Ch. 10 - The Atom	31	5/1/17-5/5/17	M/T	Ch. 23 - The Physical Nature of Light		
		W/R				W/R			
16	12/12/16-12/16/16	M/T	Ch. 11 - Relativity	32	5/8/17-5/12/17	M/T			
		W/R				W/R			