

Chemistry Academy
DEPARTMENT OF PHYSICS
Physics 2A
Physics – Mechanics
Web page @ Tritoned

Summer Session 2 **August 1, 2016**

INSTRUCTOR: Dr. Mark Paddock mpaddock@ucsd.edu
 Office: 1622 Mayer Hall Addition,
 Office Hours: before class in Natural Sciences Building, Room 2303
 Phone: 534-2504

COURSE COORDINATOR: Anthionette Moore, tmoore@physics.ucsd.edu

2A TEACHING ASSISTANT: Paul Rozdeba, prozdeba@physics.ucsd.edu

TUTORS/MENTORS: Mustafa Ali, Mgali@ucsd.edu
 Amy Schwartz, abschwartz117@gmail.com
 Thomas Steele, tsteele@ucsd.edu
 Zulfar Ghulam-Jelani, zughulam@ucsd.edu
 Kayleigh Adams, kay.anne.adams@gmail.com

CLASS SCHEDULE:

Lectures: MTWTHF 10:20 – 11:50am, 2A Check Schedule

Quizzes: Monday, August 8, Monday, August 15, Monday, August 22;
 Monday, August 29

Discussion Sessions: Thursdays, 8:30 – 10:20am in Natural Sciences Building, 2303

Final Exam: 2A Friday, September 2, 1:00 – 3:59pm

Final Examination: The final examination will cover all of the material of the course. Please check your exam schedule and inform the instructor of any conflicts.

TEXT: Knight, Physics for Scientists and Engineers: A Strategic Approach, 4th Edition, Volume 1

PREREQUISITES: Math 10C or 10D or 20C. Trigonometry, vectors and calculus will be used in lectures, problem sets and exams.

Help Is Available: Course TA
 Course Tutors/Mentors
 Online Sources

Students with Disabilities: Students with a verified disability may be entitled to appropriate academic accommodations. Please contact the Office for Students with Disabilities at 858-534-4382 or via e-mail at osd@ucsd.edu.

Academy Dishonesty: Please read “UC Policy on Integrity of Scholarship” in the UCSD General Catalog.

Course Format: Physics 2A-B-C is a lecture course covering mechanics, electricity and magnetism, waves and modern physics. This sequence is suitable for students majoring in Physics, MAE, ECE or CSE. Other majors should check with their departments for the appropriate sequence. Physics 2A deals with mechanics.

The course will consist of Prelecture Engagements, Worksheets, Interactive Lectures, Homework and Tests. Students will form revolving groups of about 5 students for work on worksheets and projects. Assistance is available from the course TA and Course Tutors/Mentors as well as the instructor.

Worksheets: Will be provided in class when appropriate.

HW Assignments: Problem sets are assigned as selections from each text chapter. The graded homework will be through Mastering Physics, which is an online homework submission and grading tool.

Quizzes: Quizzes will be given beginning the second full week of lectures. Your lowest quiz lowest score will be dropped. **There will be no make-up quizzes.**

Clickers: You have the opportunity to participate in lecture by utilizing the in-class Interwrite PRS system (clickers). Before you use the clickers for the first time, be sure to enter in your student ID under the setup menu. Points for the clickers will mostly be assigned by participation. Every question given in lecture is worth 4 points, you will be given 3 points for merely answering with 1 point for answering correctly.

Reading Quizzes: Reading quizzes will be given before each lecture on material to be read in the textbook. They will consist of some easy problems based on the reading.

Grading Policy:

Quizzes	40%	(top three scores)
Final Exam	20%	
Online PreLecture/Homework	25%	
Clickers/Inclass	15%	

Harassment, Sexual or Otherwise: Harassment means unwelcome advances or requests and/or other verbal or physical conduct of a disturbing nature. Such conduct has the purpose or effect of unreasonably interfering with an individual’s work or academic or academic environment in any University activity or program. Such behavior is not acceptable in the University setting.

TIPS FOR SUCCESS:

Wonder - Being a good scientist begins with wondering about the world around you. As you take this course, look for phenomena in your everyday life that relate to topics discussed in class. Consider a scientific explanation for the things you observe.

Ask Questions - Asking questions during class is essential to your success. Try not to worry that your questions might sound foolish – it's almost guaranteed that other students have the same questions. If your question doesn't get covered during class *please* see me during office hours, or make arrangements with me to meet another time. The sooner you come in for help, the sooner you can get back on track.

Read the text before coming to class - Reading Quizzes – When you come to class, I assume that you have already read the assigned sections in the text and done the reading quizzes. Preparing beforehand will help you get the full benefit of the in-class discussion and activities.

Keep up with the assigned homework problems – Physics is more skill-based than knowledge-based: compared to a subject like history, there aren't as many individual facts you need to know, but you need to be able to apply a small number of fundamental concepts to a wide variety of situations. This means that you cannot just read the material, you have to *practice* it in order to understand it. You also need to give it time to sink in. Putting off homework until a dory or two before the exam is the most frequent cause of poor quiz scores. Start the homework as soon as you can. You should plan on spending at least an hour or two on the homework every day.

Do the problems more than once – After you have solved the problems, do them over again a day or so later. Work through each of the required exercises and problems at least twice – more if needed until you feel completely comfortable with the problems. When you really understand a problem, you will be able to just to find the correct answer, but also to explain the solution to another student in the class. You should be able to explain not just *what* you do at each step, but *why* you do it that way. Also, try to imagine different variations of the problem. How else could the problem be asked? What could be added to the problem to make it more complicated (but still solvable)? What other variables could be included or asked for? Then try to solve these new imagined variations. This will help encourage your brain to learn skills and techniques, not just memorize the steps to solve one particular problem.

Form a study group – The most effective way to learn physics is to discuss problems with another student, or in a group of three or four students. If you are stuck on problem, someone else in the group may come up with the “missing piece” that lets you solve the problem. If you already know how to do a problem, explaining it to other students helps to solidify your understanding. Talking through the problems with other students will give you a much better understanding of physics concepts. Most people find the study group works better if everyone first tries to do the homework on his/her own before meeting together. This allows the group to focus on the areas where people are having difficulty. I will also set up a discussion group on Blackboard where you can ask questions of other students – more details on this will be available in class.

Add/Drop - Use WebReg to add/change/drop, drop from waitlists. See Sharmila Poddar (534-3290; spoddar@physics.ucsd.edu) in the Physics Department, Student Affairs Office Mayer Hall Addition, Room 2561, if you have any problems with WebReg. If you need advice, see the TA or the instructor, **but they do not sign any cards.**

TENTATIVE COURSE SCHEDULE

<u>Week</u>	<u>Date</u>		<u>Topics</u>	<u>Lecture</u>
1	Aug. 1	M	Introduction/Chapter 1	Chapter 1
	Aug. 2	Tu	Chapter 1	Chapter 1
	Aug. 4	Th	Chapter 2	Chapter 2
	Aug. 5	F	Chapter 2	Chapter 2
2	Aug. 8	M	Quiz 1, Chapter 3	Chapter 3
	Aug. 9	Tu	Chapter 4	Chapter 4
	Aug. 11	Th	Chapter 5	Chapter 5
	Aug. 12	F	Chapter 5	Chapter 5
3	Aug. 15	M	Quiz 2, Chapter 6	Chapter 6
	Aug. 16	Tu	Chapter 7	Chapter 7
	Aug. 18	Th	Chapter 8	Chapter 8
	Aug. 19	F	Chapter 8	Chapter 8
4	Aug. 22	M	Quiz 3, Chapter 9	Chapter 9
	Aug. 23	Tu	Chapter, 10	Chapter 10
	Aug. 25	Th	Chapter 11	Chapter 11
	Aug. 26	F	Chapter 12	Chapter 12
5	Aug. 29	M	Quiz 4, Chapter 13	Chapter 13
	Aug. 30	Tu	Chapter 13	Chapter 13
	Sept. 1	Th	Review	Review
	Sept. 2	F	FINAL	FINAL