

CASPER COLLEGE COURSE SYLLABUS

Physics 1310: College Physics I

Semester/Year: Fall 2015

Lecture Hours: 4

Time: 9:00 – 9:50 AM

2:00 – 3:50 PM

Lab Hours: 2

Day: MTThF

W

Credit Hours: 4

Room: PS209

PS204

Instructor's Name:

Mr. Paul Marquard

Office Phone: 268-2250

Email: marquard@caspercollege.edu

Instructor's Contact Information: E-mail is the easiest way to get in touch with the instructor; e-mail is checked continuously while in the office and is checked at home multiple times. You may also call the instructor's office at any time; if the instructor is not available, leave a voice mail and your call will be returned as soon as possible.

Office Hours: MTTh 10 – 10:50 AM, T 1 – 1:50 PM, Th 11 – 11:50 AM or By Appointment

Course Description: A first semester course in physics designed for those majoring in physics, engineering, mathematics, or physical sciences. Topics covered are mechanics and heat.

Statement of Prerequisites: MATH 2200, Calculus I

Goal: The Physics Department will instruct students on knowledge gathering techniques and the understanding of basic physical concepts at a level appropriate to the class level and the student's individual career goals. A well instructed physics student will be able to take a problem, analyze it both qualitatively and quantitatively, find a solution, and present the solution to others in an appropriate manner conducive to the knowledge level of the audience.

In Physics 1310/1320/2310/2320, students will gain a knowledge of advanced physical concepts and their applications in everyday life. Students will use both qualitative and quantitative problem-solving skills to answer a variety of physics problems based around engineering and science concepts.

Outcomes:

Passing students should:

- Be proficient in SI unit conversions
- Understand physical properties of objects, such as volume, density, and weight/mass
- Be able to use linear and angular kinematics in a variety of situations
- Be able to recognize vectors and scalars
- Understand and use mathematical concepts such as dot products and cross products
- Qualitatively and quantitatively describe motion/force in two and three-dimensions using force diagrams
- Be able to recognize, and quantitatively consider, situations that involve conservation of energy, conservation of momentum and conservation of angular momentum
- Qualitatively and quantitatively describe angular motion
- Be able to create and solve basic problems dealing with situations in equilibrium
- Qualitatively and quantitatively describe gravity and harmonic motion

- Be able to apply the rules of calculus where possible in the settings above

Methodology: This course will utilize the flipped classroom. Lectures will be presented in an electronic format, usually on YouTube. Class time will be spent with demonstrations, laboratory work, problem solving, and assessments.

In class problem solving will include homework and other problems broken down into a series of questions students will learn to ask themselves in order to learn the problem solving process. Students will work in groups of 2 – 4 with ample opportunity to discuss problems with each other and receive feedback from the instructor at hand. The instructor will answer questions with more questions (the Socratic dialogue) in order to guide students to the solution. The objective here is to teach the student how to solve problems by asking themselves the right questions and not by following similar example problems. This process is meant to improve the student’s critical thinking skills.

Laboratory sessions will occur weekly. Labs will include manual measurements as well as measurements using computer based laboratory equipment. Students will perform the labs and write up lab reports as instructed during the first day of class. Grading will stress the student’s ability to make observations of what they are seeing and measuring in lab. Observations and conclusions are stressed in grading more than numeric data and calculations. I am interested in what you learned by performing the lab more than whether or not your data says you did it right. Lab experiences are fair game for exams.

Evaluation Criteria (repeats for spring semester):

Top 3 Exams	30%
Homework	15%
Labs	15%
Quizzes	20%
Comprehensive Final	20%
Total Points	100%

Lab grading procedures will be presented during the first lab meeting.

Grading Scale for the Course:

$$90\% \leq A \leq 100\%$$

$$80\% \leq B \leq 89\%$$

$$70\% \leq C \leq 79\%$$

$$60\% \leq D \leq 69\%$$

$$0 \leq F \leq 59\%$$

Required Text, Readings, and Materials: *Sears & Zemansky’s University Physics*, 13th ed. by Young & Freedman. Access to Mastering Physics is also required.

Calculator:

A standard scientific calculator (one that can do scientific notation, exponents and trigonometric functions) will suffice. Graphing calculators are allowed, but not necessary nor required. Some calculator restrictions may exist for some exams. More details will be given before the exams.

Class Policies:

Homework will not be accepted after it is due.

Make-up Labs will not be given unless arranged prior to the scheduled lab.

Exams and quizzes: If you are aware that you will have to miss an exam, let the instructor know as early as possible. A make-up exam may be given if the situation merits, and will take place outside of the regularly scheduled class period. If class is canceled the day of an exam it will be given on the next class meeting.

Quizzes will never be announced.

Last day to change to an audit or withdraw from the course is Nov 12, 2015.

Student Rights and Responsibilities: Please refer to the Casper College Student Conduct and Judicial Code for information concerning your rights and responsibilities as a Casper College Student.

Chain of Command: If you have any problems with this class, you should first contact the instructor in order to solve the problem. If you are not satisfied with the solution offered by the instructor, you should then take your problem through the appropriate chain of command starting with the Department Head of Physics and Engineering, then the Dean of the School of Science, and lastly the Vice President for Academic Affairs.

Academic Dishonesty - (Cheating & Plagiarism) Casper College demands intellectual honesty. Proven plagiarism or any form of dishonesty associated with the academic process can result in the offender failing the course in which the offense was committed or expulsion from school. See the Casper College Student Code of Conduct for more information on this topic.

Official Means of Communication: Casper College faculty and staff will employ the student's assigned Casper College email account as a primary method of communication. Students are responsible to check their account regularly. This is also, where you will find course evaluation links during course evaluation periods.

ADA Accommodations Policy: If you need academic accommodations because of a disability, please inform me as soon as possible. See me privately after class, or during my office hours. To request academic accommodations, students must first consult with the college's Disability Services Counselor located in the Gateway Building, Room 344, (307) 268-2557, bheuer@caspercollege.edu. The Disability Services Counselor is responsible for reviewing documentation provided by students requesting accommodations, determining eligibility for accommodations, and helping students request and use appropriate accommodations.

TENTATIVE COURSE SCHEDULE (Subject to Change)

Week	Chapter Section Readings	Comments
Aug 24 – 28	Chapter One	
Aug 31 – Sept 4	Chapter Two	
Sept 8 - 11	Chapter Three	
Sept 14 – 18	Chapter Four	Exam One
Sept 21 – 25	Chapter Five	
Sept 28 – Oct 2	Chapters Six	
Oct 5 – 9	Chapter Seven	
Oct 12 - 16	Chapters Eight	
Oct 22 - 23		Short week
Oct 26 – 30	Chapter Nine	
Nov 2 – 6	Chapter Ten	
Nov 9 – 13	Chapter Eleven	
Nov 16 – 20	Chapter Twelve	
Nov 23 – 24	Chapter Thirteen	Short week
Nov 30 – Dec 4	Chapter Fourteen	
Dec 7 – 11		
	Final Exams	TBA
		Lab practical schedule is to be determined.