

SRJC



Physics 20 Lecture
Fall 2019
**General Physics
Lecture Part I**

Instructor: Jan Kmetko, jkmetko@santarosa.edu
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Phone: 707-521-7805
Office Hours: Mon: 11:30-1:30
Tue: 12:30-1:30
Wed: 12:30-1:30

Lectures: Lark Hall, 2009

Section 0481: Tue and Thu 1:30 – 3:00
Section 1592: Tue and Thu 3:00 - 4:30

Course Description:

This course uses vectors and algebra to investigate translational and rotational motion, Newton's laws, conservation of momentum and energy, oscillations, mechanical waves (including sound), fluid mechanics, and thermodynamics.

Prerequisites: Concurrent Enrollment in PHYS 20L; AND Course Completion of MATH 25 and MATH 58 OR Completion of MATH 27 or higher (MATH) OR appropriate placement based on AB705 mandates.

Recommended Preparation: One year of high school physics; OR Course Completion of PHYS 1

Required Materials:

Textbook: Openstax (free): <https://openstax.org/details/books/college-physics>

Download (free) or buy: ISBN - 13: 978-1-938168-00-0

Access: to your Canvas account and the internet

Flashcards: to be given out in class. Bring the cards with you to every lecture class – you will need to use them to communicate with me during class.

By Thursday, August 22, you should do the following:

- Login to the Class Webpage on Canvas
- start reading Chapter 2 and prepare for the in-class reading quiz on 8/29
- Start the first HW assignment due on 8/27. Find the Homework posted in Canvas.

Course Assignments and Grading:

Reading Quizzes 6%

At the beginning of each Thursday lecture, there will a 4-minute reading quiz. This quiz will check that you have read the book material before the lecture as listed in the class schedule below. You may not start the quiz late. Late arrival or absence will result in no credit. One quiz, with the lowest score, will be dropped from your final reading quiz score.

Homework 20%

There will be 6 or 7 problems and a worksheet due every week; you can find the assignments on the class Canvas page. You must turn in your own homework in person, at the beginning of each Tuesday class. Your homework will not be accepted if you are late, or absent. One homework, with the lowest score, will be dropped from your final homework score. Grading of each problem: solved correctly, 3pts; done with minor errors, 2 pts; unsolved but attempted, 1pt; skipped, 0 pts. Work must be shown. The key will be posted weekly Canvas.

Participation 6%: Post a link on the Discussion board to a cool Youtube video, or a simulation, or an applet that relates to the physics covered in class. Include four to five sentences explaining the relevance, what part of the material the link relates to and why you find it interesting. Title the thread as “my participation link.” Due: throughout the semester, by Dec 5.

Intra-Semester Exams 17% each

There will be three in-class, closed book exams on 09/26 (Thu), 10/31 (Thu), 12/05 (Thu). Each exam will last 1 class period. One 3×5 index card is allowed, but must be submitted with the exam. You may hand-write anything you want on both sides of the card. There are no make up exams.

Final Exam 17%

The final exam will cover all of the class material (comprehensive).

Final Exam Schedule

Section	Date and Time
0481	Thu, Dec 19, 2019 1:00 PM - 3:45 PM
1592	Thu, Dec 17, 2019 1:00 PM - 3:45 PM

Grading at a Glance:

Reading Quizzes	6%
Homework	20%
Participation	6%
Intra-Semester Exams	3×17%
Final Exam	17%
Total	100%

Scales

Grade	A	B	C	D	F
Final Score	90-100	80-90	70-80	60-70	less than 60

Student Learning Outcomes

Upon completion of this course, the student will be able to:

1. Apply physics principles and laws to analyze and solve physics problems in mechanics, fluids, waves, and thermodynamics through critical thinking, problem solving, mathematical modeling, and laboratory experimentation.
2. Measure and analyze real-world experimental data related to principles of physics, including appropriate use of units and significant figures.

The complete course outline for PHYS20 can be found at the SRJC homepage under “Schedules & Catalog” → “Course Outline Information”.

Course Policies

Attendance

Attendance is required. Students who fail to attend the first class meeting will be dropped by the instructor. The instructors are required to drop all No-Show students immediately following the second class meeting. Throughout the semester, you may be dropped if you miss four or more classes. It is your

responsibility to drop if you stop attending. If you are late to class on the day of the reading quiz or leave the class early, you will not receive credit for the reading quiz. If you are late to class on the day when homework is due, your homework will be counted late and you will receive no credit for it. Consult the Student Handbook for further official rules. Students on the wait list are considered enrolled in the section. Unregistered students must attend the first day of class. If a space opens, I will raffle off the spot after class. The unregistered student must be present to play the lottery.

The Drop-the-lowest Score Policy

There is no distinction between excused and unexcused absences in this course. For more details, please see [section 3 in 8.1.5P-D](#) of the SRJC College Catalog. Since absences cannot be excused, to provide flexibility in unforeseen circumstances, one homework, and one reading quiz with the lowest score will be dropped from the calculation of the final grade. Exam scores cannot be dropped. There are no make-up exams.

Accommodations

If you need disability related accommodations for this class, such as a note taker, test taking services, special furniture, etc., please provide the Authorization for Academic Accommodations (AAA letter) from the Disability Resources Department (DRD) to the instructor as soon as possible. You may also speak with the instructor confidentially during office hours about your accommodations. If you have not received authorization from DRD, it is recommended that you contact them directly.

Academic Integrity

Cheating, plagiarism, collusion, and other academic misconduct will not be tolerated. Please consult section 3.11P of the Academic Policy in the Policy Manual for definitions and procedures. The instructor reserves the right to award zero credit in the event of academic misconduct.

Commitment to Respect

We are all responsible for creating a positive, inclusive learning environment that supports a diversity of experiences with regard to race, religious creed, color, national origin, ancestry, ethnic group identification, physical disability, mental disability, medical condition, genetic condition, marital status, sex, gender, gender identity, gender expression, genetic information and sexual orientation.

Important Dates

Last Day to Add without instructor's approval:	Sunday, Aug 25, 2019
Last Day to Add with instructor's approval:	Sunday, Sept 8, 2019
Last Day to Drop and be eligible for enrollment/course fee refund:	Sunday, Sept 1, 2019
Last Day to Drop without a 'W' symbol:	Sunday, Sept 8, 2019
Last Day to Drop with a 'W' symbol:	Sunday, Nov 17, 2019

Scroll to the next page for Class and Lab Schedule.

	Tuesday	Thursday
Aug 20	1D Motion: Displacement, Velocity (2.1 – 2.3)	1D Motion: Acceleration, Free Fall (2.4 – 2.6)
Aug 27	1D Motion: Problem Solving (2.7 – 2.8)	2D Motions, Vectors (3.1 - 3.3)
Sep 3	Projectile Motion (3.4 – 3.5)	Forces, Newton's Laws (4.1 – 4.4)
Sep 10	Application of Newton's Laws (4.5 – 4.7)	Friction (5.1)
Sep 17	Uniform Circular Motion (6.1 – 6.3)	Kinetic Energy, Work-Energy Theorem (7.1 – 7.3)
Sep 24	Conservative Forces, Potential Energy (7.4 – 7.5)	Exam I (2,3,4,5,6)
Oct 1	Power (7.6 – 7.8)	Linear Momentum, Impulse (8.1 – 8.3)
Oct 8	Momentum Conservation, Collisions (8.4 – 8.5)	PGE outage (school closed)
Oct 14	Torque (9.1 – 9.3)	Static Equilibrium, Problem Solving (9.4 – 9.6)
Oct 22	Rotational Motion (10.1 – 10.3)	Angular Momentum (10.4 – 10.6)
Oct 29	Natural hazard (school closed)	Natural hazard (school closed)
Nov 5	Fluids, Pressure (11.1 -11.4, 11.6)	Exam II (7,8,9,10)
Nov 12	PDA Day (No Class)	Temperature, Ideal Gas Law (13.1 ,13.3)
Nov 19	Heat, Heat Capacity, Phase Changes (14.1 – 14.4)	Laws of Thermodynamics (15.1 – 15.3)

Nov 26	Carnot Cycle, Heat Engines (15.4 – 15.5)	Thanksgiving Day (No class)
Dec 3	Oscillations: SHM (16.1 – 16.4)	Exam III (11,12,13,14,15)
Dec 10	Waves, Interference (16.5 – 16.9)	Sound, Physics of Hearing (17.1 – 17.4)
	Final: Sec 1592: Dec 17; 1:00-3:45	Final: Sec 0481: Dec 19; 1:00-3:45