

AP Physics C: Mechanics Course Syllabus

Text: Physics for Scientists and Engineers: 8th Edition, Serway and Jewett.

Description

This course is designed for students who have taken AP Calculus AB and it will prepare the student for more advanced college physics courses in the field of engineering. Previous physics experience is recommended, but not required. This particular course will only focus on mechanics and will cover the following 6 major topics: kinematics; Newton's laws of motion; work, energy, and power; linear momentum; circular motion; and oscillations and gravitation. Students should expect a college-like experience in which there will be high expectations regarding attitude, work ethic, and maturity. Material will be presented in a mixture of lecture and small group collaborative learning. In addition, there will be laboratory experiences to supplement the lectures and small group activities.

Schoology Website

Use the Schoology website to get due dates and assignments for labs and homework, chapter test and unit test dates, and all downloads (including PowerPoint presentations, lab sheets, formula sheets, HW keys, and topic lists). You should check the website at least every other day.

Supplies

1. Graphing calculator
2. Binder with college ruled paper and graph paper split into the following categories (used solely for this class)
 - a) All documents from the "General Forms" folder in Schoology; AP formula and constant sheets IN SHEET PROTECTORS
 - b) Notes
 - c) Homework
 - d) Labs (You must keep an organized lab notebook in case your college requests to see it for verification that you completed it)
3. Textbook (keep at home unless otherwise noted)
4. ½ inch binder for your mini thesis project
5. 100 sheets of college ruled paper (I will keep this in my room and provide paper for your tests and test corrections)

Evaluation

Points will be assigned for chapter tests, unit tests, and the mini thesis project in the following breakdown. The 2nd percentage in each category applies if you have SUCCESSFULLY completed a mini thesis in one of my other classes and you opt out of the mini thesis assignment this year.

Summative (90% or 100%): This includes all chapter tests and unit tests. Points will be assigned within the summative category to accurately reflect the value for each test. Unit tests will be 222 points and chapter tests will be 100 points. I will explain how I arrived at these values during class.

Homework (10% or 0%): This will be your grade for the Mini Thesis project.

Letter grades will be assigned at the end of each 9-week term in the following manner.

A = 89.50-100% B = 79.50-89.49% C = 69.50-79.49% D = 59.50-69.49% F = below 59.50%

I will give you grade updates periodically. You will also have access to your grades through the Home Access Center on eSchool Plus.

Unit Tests and Chapter Tests

Unit tests and chapter tests will be a combination of multiple choice and free response questions. In addition to mathematical and conceptual questions on each chapter test, there will also be lab based questions on every chapter test. The lab questions ARE NOT eligible for test corrections and will have their own section on the test. Chapter tests will be given at the beginning of class and will be 45 minutes long. Unit tests will be given at the end of a unit and will be at least two class periods long. All unit tests will be comprised of old AP test questions. You will receive a review packet of old AP questions for each unit so you are prepared for the test. There will be time at the end of the year when we will do practice AP tests that include all topics. All chapter and unit tests that you take will be used for review at the end of the year.

If you are absent the day before a test and we did not cover any new material or review for the test, you will take the test at the scheduled time. If you are absent the day of the test and no new material or review was missed, you will take the test when you come back. If you were absent for new material or review, you will receive the same amount of days to catch up as you were absent. Tests are naturally comprehensive, as some of the concepts overlap among topics.

Testing Rules

1. All you need is something to write with and your AP formula sheets. You MAY NOT WRITE ANYTHING on your AP formula sheets and they MUST be in sheet protectors. A scientific calculator will be provided for your tests. You may not use a graphing calculator on MOST tests.
2. I will provide you with 2 sheets of paper for your work when you take a chapter test. If you do not return 2 sheets to me with your chapter test, you will receive a zero. You may get extra paper during the test if necessary.
3. All cell phones must be turned off. If you are caught using a cell phone for any reason during the chapter or unit test, you will receive a zero.
4. There will be no sharing of calculators. I will provide one for you.
5. No bathroom breaks during the test unless there is an emergency. If you do go to the bathroom, you must leave your phone in the drop box.
6. Test corrections must be complete and correct. Conceptual questions must have a correct and thorough explanation (not just restating the answer) and math questions must show ALL work. THERE WILL BE NO TEST CORRECTIONS FOR THE AP UNIT TESTS OR THE LAB BASED CHAPTER TEST QUESTIONS. However, there will be an AP type curve that will be applied to unit tests. During end of the year review, you will have an opportunity to look at your old tests.

Test Correction Rules

1. On the day following the chapter test (in most cases), the student will receive his/her grade. Only the numeric grade and numbers of incorrect answers will be given. There will be a topic list on my website that explains the topic of each question.
2. The student then has THREE mornings (8:15-9:15) to complete test corrections. Students who cannot come in during these hours can arrange for lunch accommodations.
 - a. The student can only complete corrections on ONE of those three days. The student may come in to look at their test and ask questions before they begin corrections, but once the student decides to begin corrections there will be no opportunity to ask questions and the environment will be identical to a testing situation.
 - b. For example, if the chapter test is on Monday, the student should get his/her grade by Tuesday. Then, the student has Wednesday, Thursday, or Friday to come in for test corrections.
 - c. The student will attempt to correct as many of the previously incorrect answers as possible.
 - i: In order to receive half of the previous points back, the student MUST SHOW ALL WORK and indicate the new answer. Of course, the new answer must be correct. Incorrect answers and answers with no work will result in zero points. Conceptual questions must have a correct and thorough explanation.
 - ii: Students cannot lose points by participating in test corrections. Their score can only go up and there is NO 85% CAP. If a student got a 98 and wants to do corrections to get a 99, they are allowed to.

3. Notes WILL NOT be allowed during test corrections. The only reference the student may use during test corrections is the work they did during the test. I will staple this work to the test when you turn it in.

***Test corrections are meant to reward those students who do their work and are willing to put in a little extra time for a better grade. The goal is for the students to go back and improve their understanding of the concepts or problems they did not do well on. OVERALL CURVES ON CHAPTER TESTS WILL NOT BE GIVEN.

Test Correction Procedures

1. I will have your chapter test at my desk. When I give you your test, take a seat.
2. Take out a separate sheet of paper and write TEST CORRECTIONS on the top of the page.
3. For multiple choice, put the number of the problem you got wrong and write AND circle your new answer. If the problem is conceptual, explain why your new answer is correct. No explanation or a wrong explanation equals 0 points. If the problem is math based, show all work you used to get the new answer. The work MUST be correct to get the credit.
4. For free response/essay problems, only redo the parts you missed. Write the number and the part (a, b, or c for example) and show all work needed to get the correct answer. Circle the correct answer. If you received continuation points (cont.), you DO NOT have to redo it.

Test Retake Policy: Full test retakes will be available on all CHAPTER tests assuming that the original score was below a 70% and they have attempted test corrections. If the score was a 70% or higher, the student will already have the opportunity to achieve an 85% or higher with normal test corrections. Full test retakes will be available only during the last 2 weeks of each quarter and have a maximum score of 85%. The student must sign up for the retake and take it before school or during lunch.

Homework

There will be homework assignments after each concept is taught. Problems will come from the book and occasionally there will be problems from supplemental AP material. All problems are expected to be done by the specified due date. If you can't get the answer, you should at least set up the problem like we did in class or refer to the homework steps document for guidance. For conceptual questions, you must give an acceptable explanation. If you write nothing, you have obviously not given the required effort. If you do not do the homework I can assure you that you will not do well on the exams. Physics is learned through practice. Just knowing the concepts and watching me do the problems is not enough. Students are also expected to read ahead and be prepared for the material being presented that day.

Attendance

Being in class is absolutely vital to your success in this course. If you know you will be absent for a valid reason (school activity, family issue), please inform me so I can give you your assignments ahead of time. CHECK SCHOOLGY FOR ASSIGNMENTS IF YOU ARE ABSENT!! ABSENTEEISM IS NOT AN EXCUSE. If the student is absent, they are expected to watch the Livescribe and be prepared when they return.

Class Rules

1. NO ELECTRONIC DEVICES OF ANY KIND AT ANY TIME!!!! READ THE SIGN ON THE WALL.
2. Respect the equipment and your classmates.
3. If you need to use the bathroom, take a bathroom pass from the front of the room and place your phone in the drop box at the front of the room. If you take your phone with you to the bathroom during a test or quiz, your test or quiz will be picked up and graded as is.

Lab

1. Some labs will have an "inquiry" component. Before we perform the lab that I have created for you, you will create your own lab designed to measure the related variables. A checklist for these inquiry labs will be in the "General Forms" folder on Schoology.
2. PRINT THE LAB SHEET AND RUBRIC FROM SCHOOLGY AND BE PREPARED ON LAB DAYS. Being absent and saying you didn't know we were having a lab is not an excuse. The lab dates will be on the board calendar and they will be on Schoology.
3. All students are expected to exhibit mature behavior during all labs. Any horseplay will not be tolerated.
4. There will be a grading rubric posted online that tells you exactly what I expect for each lab. I highly recommend that you use these rubrics so you don't miss anything. There will also be a sample lab report posted for each lab 1 or 2 days before the chapter test so you can compare your answers and explanations to mine. We will also have a lab discussion as part of the chapter test review. There will be questions based on the lab reports on almost every chapter test so it is important that you do the lab reports in order to answer the test questions correctly. THERE ARE NO TEST CORRECTIONS ON LAB BASED QUESTIONS.

*** Syllabus is subject to change***