

Advanced Placement Physics C

Mechanics

2324

My Assumptions:

You have a personal motivation to be in this class

We are all worthy of being treated as adults

We are Mindful, Honorable and Supportive

Class Agreements:

- **listening to personal music during independent work**
- **ability to pick your own groups (within size restrictions)**
- **we are allowed to eat in class as long as there are no ants**

Class Motto:

Prevention is always better than a Cure.

Grades: will consist of these parts:

Summative Assessments **75%**

Summative indicates that the assignment is designed for you to bring together understandings of topics to express depth of understanding

Includes: Evaluations, Projects, Labs, Presentations and more

Formative Assessments **15%**

Formative indicates that the design of the assignment is for you to develop, or form, a greater understanding of a topic

Includes: Readings, Labs, Activities, Experiments, Problem Sets, Videos, and more.

Habits of Work **10%**

Development of timeliness, initiative, goal-setting, participation and reflection skills

Includes: Reflections, Surveys, Outlines, and more.

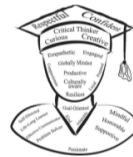
Web Site: www.physicsisphun.education: All materials for the class will be available from the class Google Classroom site. We will be using Google applications a whole bunch this year. The website is a resource and a link to most things physics. We will be using lots of technology this year so be ready to use web based resources along with your personal technology during and outside of the school day.

Grade Book: Final grades will be reported using the school Aspen grade book. Running grades will be recorded in our Google Classroom. Hopefully with the new system running grades will regularly be transferred to Aspen. Google Classroom will always be your best source of current grades and assignments. You are responsible to check your grade for any missing work.

MHS Grading Policies - Fall of 2023

Mission and Vision:

At Melrose High School, we strive to create meaningful learning opportunities for all students and to communicate with students and stakeholders about student progress using accurate, transparent, and consistent grading practices that facilitate continuous growth and inspire challenge.



Minimum Grading

- The lowest grade a student may receive on a report card is **50**, regardless of student performance on summatives.
- The lowest grade a student may receive on an attempted assignment is a **50**.
- Assignments that are not turned in/completed/ plagiarised will receive a code of "No Credit."
- Assignments may be turned in up to two weeks after the due date with no point deduction from the assignment grade for lateness.

Universal Categories Policy

All categories in Aspen are set as the following:

- **75% Summative** Assessments
- **15% Formative** Assessments
- **10% Habits of Work**

Additionally, the "Average Mode" will be set as "Category Total Points."

Revision Policy

All students may revise/retake summative assessments for up to **full credit** after the following steps have been taken:

1. Analyze feedback and conference with the teacher.
2. Demonstrate efforts to re-learn content and skills by turning in missing formative assignments and/or revisiting practice work.
3. Reflect on the learning process, which may include explaining changes they have made and why they made them, and examining how they will continue to grow and improve their understanding and skills.
4. Additionally, artifacts related to retake/revision policies, including this reflection, should be added to the student's portfolio.

Class Structure: Class will have 2 parts: Preparation & Application

Preparation

(to prepare for class)

This will consist of assignments and resources that you should accomplish before class starts so that you are ready for the application of that content during class. Many times these will be different types of media about the content of the class. These are formative assignments.

Application

(during class)

The main parts of this section of class will be a discussion of student questions about the content and then activities designed to further the student's understanding of the topic. It is important to take advantage of this time with your classmates and teacher for interactions about the concepts involved in understanding the topic. These assignments are designed to enhance and deepen the student's understanding of the content. At times assignments will take multiple class times or depending on student pace might need to be finished outside of class time..

Problem Sets: All problem sets are done through the textbook website which is WebAssign.

When we do example problems the work we do will be posted in GC so that you can review what was done during class. This is helpful so that you can concentrate on understanding what we are doing during class, not just writing everything down for later review. We will talk about problem solving formats. The approach to problems in this class is different from what you have done in other classes. It will be a little strange at first but is the approach that I believe maximizes your understanding and learning from the problems. I do not expect you to come to class with all the problems correct but I do expect you to come with all attempted. Problem sets are broken in suggested sections during our learning of the content.

Course Outline / Order of Topics: Look at the AP[®] Physics C Mechanics course description for more information.

Unit01 Kinematics

Unit02 Newton's Laws of Motion

Unit03 Work, Energy, and Power

Unit04 Systems of Particle and Linear Momentum

Relativity

Unit05 Rotation

Unit06 Oscillations

Unit07 Gravitation

After the Exam:

Text Book: We will be using Physics for Scientists and Engineers 10th edition. The text is available online, the way the majority of students choose to access it, as well as hard copy. We will also be using a variety of web resources as supplements to this primary text. One such resource is a text from OpenStax. This is a free text that students can, and are encouraged to read as a supplement to our primary text. Links to this text and our ebook can be found on the web site and in GC.

Tasks: These are some of the best conceptual learning tools in the course. We will do these in a variety of formats during the year. The activities come from a book *TIPERs, Sense Making Tasks for Introductory Physics*.

What we are doing: This will be kept constant and updated on the Google Calendar for the class. You are responsible to know what we are doing in class each day and due dates. It might be a good idea to add the class calendar to your personal calendar. The easiest way to get at the calendar is on the class website.

Applications and Evaluations: Class time will be spent exploring the concepts and doing activities, labs and example problems to further student understanding of the topics in depth. The activities will use guided inquiry in conjunction with both live demonstrations and computer generated simulations to answer open ended questions and explore the topics before. Students are expected to prepare by doing the assigned content and participate fully in all class activities. Evaluations and exams formatting and problem content will be based on the AP[®] Physics 1 exam. These will consist of multiple-choice and free-response sections. While the initial exams will not be of the length of AP[®] exams our goal will be to work at a speed so that all students will be able to complete the exam in the spring within the time allowed. We will also be using many resources from AP[®] Classroom during the year.

Practice Exams & Practice Exam Problems: Students will also complete past AP[®] Physics C exams with increasing frequency as the class moves closer to the AP[®] exams in May.

Laboratory: During the course we will do many labs. Many of the labs will require extended time which when possible will be provided during class time but students should be ready to devote personal time to completing lab work. Laboratory work will comprise a minimum of 20% of class time during the course. Students are required to keep all lab experiments, data, and reports. This should be kept for the entire course to serve as a portfolio of the student's laboratory work. Many of the labs will be done using computer-based sensors or video or simulations but some will also use more traditional data gathering. Labs will involve students designing and performing inquiry based experiments. There will be different levels of lab reports based on the type and structure of the lab.

Extra Help: I get to school early every day and normally stay late. I am glad to work with you any time that I am free. I have preparation blocks during the day so if you are free to reach out to me and we can set up a meeting. Normally in the evening I can make time, contact me. If you are stuck, reach out to me, put the physics away and move on to something else. We will solve it together.

Physics+C: Physics+C courses involve the study of the forces and laws of nature affecting matter, such as equilibrium, motion, momentum, and the relationships between matter and energy through a computational lens. In these courses, students decode, analyze, modify, and conduct virtual experiments with computer models of scientific phenomena. These

courses include components on computer modeling and simulation, computational thinking, and computational science. We will be doing some coding of simulations in this course.

Contact Information:

I can be reached at: bcochran@melroseschools.com you can reach out through school email or chat

