ADVANCED PLACEMENT PHYSICS C @ FHS 2023-2024 _Instructor: Mr. Marc Reif

E-mail: marc.reif@fayar.net External Website: http://fysicsfool.info

Lesson Plans and Homework: https://tinyurl.com/apc2324 Gclass code: fw5qg5b

Problem Assignments: www. masteringphysics.com AP Classroom Join Code Mechanics: LRGMXZ

AP Classroom Join Code E&M: Z7YARY

INTRODUCTION

Congratulations on choosing AP Physics C, the ultimate science course at FHS! This course is called "Physics for Scientists and Engineers" at many American universities. It is the most difficult course many students take in the first two years of college. High school students usually take this class because they are interested in a career in physics, chemistry, computer science, or engineering, although many are just looking for an intellectual challenge.

I have several goals for this class: to help you develop a correct conceptual understanding of basic physics, to develop your analytical, computational, and experimental skills, and to prepare you for the AP Physics C Mechanics exams. The exam is difficult and will require you to apply most of what you know of physics as well as a basic understanding of calculus.

Text: *Physics for Scientists and Engineers*, 4/E, Randall D. Knight, Pearson.

COURSE OUTLINE

First Semester	Second Semester
Unit 1, 1-dimensional Kinematics: Constant Velocity Model, Constant Acceleration Model, intro to vectors, elementary calculus **Unit 2, 2-dimensional Kinematics**: Projectile Motion, Uniform circular motion and Nonuniform rotational kinematics **Unit 3, 1-dimensional Forces:** The Force Model **Unit 4, 2-dimensional Forces:** Circular Motion, Applications of the force model, systems of objects, vectors (ramps, etc.), circular motion, circular orbits **Unit 5, Energy**: Energy Transfer Model, power, potential energy functions	**Unit 6, Momentum**: Momentum Transfer Model and Impulse **Unit 7, Rotation**: Mechanics models for rotation **Unit 8, Gravitation**: Gravitational Potential and Energy, elliptical orbits **Unit 9, Oscillation:** Simple Harmonic Motion, Pendulums (simple and physical) **REVIEW**

AP EXAM Monday, 3 May 2021

Additional Information

If your student receives test accommodations through an IEP or 504, you will need to apply for accommodations with the College Board for the AP exam. Once a student is approved, those

accommodations will follow him or her throughout high school. You may email michael.kaminski@g.fayar.net for the accommodations request form.

Students will be charged a $40.00 fee for every AP exam that a student has registered for but does not take. Weighted credit will not be granted for any course where a student does not take the AP exam.

CLASS TIME EXPECTATIONS

Bring your fully-charged Chromebook, earbuds compatible with the Chromebook, your Chromebook charger, and a notebook to class.

If you are attending class from home, you are expected to make every effort to join the Zoom meeting during the class time. Virtual students who miss class must complete homework assignments to be counted present.

All students will be expected to complete assignments posted on Virtual Learning Days (Fridays).

I recommend taking handwritten notes during class, when you read the textbook, or watch a video for this class.

Your active participation in class discussions and online group activities is crucial to your development of physics skills. Please feel free to ask questions as often as you feel the need, whether you are here in person or online. You may use the chat function in Zoom for questions or comments.

HOMEWORK (10% of quarter grade)

Homework assignments will be due at midnight the night before the next class meeting.

Mastering Physics assignments are graded on points and get a 20% boost (up to a ceiling of 100%) on any assignment on which you have completed at least one item. If you miss a deadline, you should complete the assignment anyway (even those it is too late to complete for a grade) in order to learn the material and be successful on quizzes, tests, and semester exams.

Google Classroom homework assignments will be assessed to meet standards. Assignments that do not meet standards will be returned with a grade of 50 or 60%. They may be revised and resubmitted for a higher grade.

Do your own homework. Copying other people's solutions generally does not lead to understanding. I strongly discourage you from doing this. There are no shortcuts to understanding – success in college-level science requires homework.

LABS (20% of quarter grade)

Labs will be completed in Pivot Interactives until social distancing ends. Pivot Interactives labs will be graded for points. There may also be lab assignments in Google Classroom graded to meet standards. Lab assignments that do not meet standards will be returned with a grade of 50 or 60%. They may be revised and resubmitted for a higher grade.

QUIZZES (35% of quarter grade)

Quizzes are keyed to the learning standards for each unit. Quiz grades for each unit are an average of all standards in that unit. Each quiz may cover 1-3 standards. The standards will be announced before the quiz. You should read the standards when studying. You will be scored in the following way on each standard:

2 - Meets Standard 1 - Progressing towards standard 0 - Insufficient Progress shown

If you score 1 or 0 on a standard, you will be allowed to retake a different version of a quiz on that standard. The different version may be more difficult, but your grade will not go down if you do worse on the retake. Retakes will be on Fridays (Virtual Learning Days).

Quiz grade for each unit will be calculated with this formula:

$$\text{Quiz Grade} = 50 + \frac{\text{Standards Score}}{\text{\# of Standards}} \times 25$$

One goal of homework is to prepare you for classroom quizzes. Each homework assignment is keyed to a learning standard. It is important that you *understand* the homework questions in order to do well on quizzes and tests.

UNIT TESTS (35% of quarter grade)

The tests are challenging and the grades are curved. Tests cannot be retaken. The best way to do well on tests is to complete and understand all in-class and homework assignments. Mastering Physics assignments will help you prepare for tests. Tests will be timed, and will usually last one hour, although adjustments may be made.

SECOND SEMESTER FINAL/MOCK EXAM

There will be a comprehensive first semester final. It will be scored on a curve and will count for 20% of the semester grade. This is district policy.

At the end of the year, there will be a mock exam. This will count as a test grade, and will be scored with an AP rubric. Typically, more than 50% of the points is an excellent score. The date and time will be determined later.

FINAL PROJECT

Juniors and sophomores will complete a group project after the AP Exam. This will count as their semester final exam grade. The anticipated project is to prepare a physics lab or demonstration and present it to an elementary school class. Details will be announced later.

General note about eSchool Grades:
Blank - Assignment not graded.
0 - Assignment completed but student earned no points.
Z - Assignment not turned in. Turn the assignment in as soon as possible.
X - Student excused from assignment.

COVID-19 Safety Practices

- Students must wear a face covering/mask at all times unless directed by the instructor.
- Students are reminded to practice social distancing at all times to reduce opportunities for exposure.
- When traveling in the hallway, please stay on the right side and do not congregate with your peers.
- Only 1 student at a time will be released from a classroom during instructional time.
- Students are encouraged to bring a personal water bottle with them each day since water fountains will be turned off. Bottle filling stations will remain on at this time.

- Students will need to wear an ID every day as this will be the only way you will be able to leave the classroom.

CLASSROOM RULES

- Use class time only for activities related to class.
- Act in a way that promotes learning (both your own and others) whenever you are involved in a class activity, both in the classroom and out.
- Accept responsibility for your own behavior.
- Follow all lab safety rules and always act safely in the lab.
- Late assignments will be penalized by 20%. If they are not turned in by the next class period you must contact me and we will discuss whether you may turn the assignment in.
- The following process will be followed when working through an electronic device issue:
    - The teacher will give the student a warning about having the device out in class and explain to them the next time it is out will result in confiscation.
    - After a warning has been given, the teacher will confiscate the device for the remainder of the class period. If a student refuses to give up the device, an administrator will be contacted immediately.
    - The administrator will give the student the option of giving up the device for the remainder of the school day or risk being suspended from school.
    - Electronic device offenses are defined as use without permission during class time; disruption to the learning process, which includes all beeps, buzzes, rings, songs, etc, student taking his/her phone out to "look" at it or check the time, student taking out the SIM cards or batteries.

I look forward to working with you!

Marc Reif

Memorandum

To: **Students and Parents of Students in Advanced Placement Classes**

Date: **August 14, 2017**

Purpose: **The Establishment of an Honor Code in AP Classes**

The Advanced Placement faculty has incorporated the following Honor Code into the policies and practices governing Advanced Placement work in particular and academic honesty in general. Our purpose is to foster a climate of independence and pride in academic work on the part of each student and to raise awareness of the importance of complete academic honesty. That is to say, there should be no cheating on exams, no copying of homework, no falsifying of scientific information, no plagiarism, no discussion of exam questions or formats, nor any other unauthorized assistance. Further information about the Honor Code can be found in the student handbook.

Therefore beginning August 29, after classroom explanations and discussions, the Advanced Placement instructors will require that the following statement (or abbreviation) be included on all work submitted, including examinations, quizzes, essays, papers, lab reports, homework, projects, and other assignments:

I certify that I have neither given nor received unauthorized assistance on this test or assignment.

_____ ***(Signature of student)***

Online Info

E-mail: **marc.reif@g.fayar.net** Notifications: **https://www.remind.com/join/reifc**

External Website: **http://fysicsfool.info** **Lesson Plans and Homework**

Google Classroom code: i6id2qi

Mastering Physics

Follow the link above to create a username and login using your school email address as the username.

Instructions for your class will be posted in Google Classroom

Pivot Interactives

Follow the link above to create a username and login using your school email address as the username. Use the Class Key below to join your class.

Class Key: da7a72df

AP Physics Syllabus Student Signature Google Form

AP Physics Syllabus Parent Signature Google Form