

Mr. McMillan
AP PHYSICS
2023-2024

College Board AP Central Join CODE: DQXYQP

Physics Research / Advanced Placement Physics

The purpose of this course is to gain a *thorough* understanding of such topics as motion, forces, momentum, work, energy, circular motion, oscillations and gravity. Course assignments will include such things as a research project, problem sets, lab experiments, engineering projects and computer assignments. Students may elect to take the AP exam. **(Tuesday May 14, 2024)**

AD Physics Covers Topics Found on the **Physics C AP exam: Part 1** (*Newtonian Mechanics*)

This is a very Math Intensive course with a focus on problem solving and critical thinking. Students must have an understanding of Calculus.

TOPICS COVERED WILL INCLUDE

- Kinematics
- Newton's Laws of Motion
- Work, Energy, Power
- Linear Momentum and Systems of Particles
- Rotation
- Gravitation
- Oscillation

Text: *University Physics (11th Edition)*
Young & Freedman

Requirements: Students must bring the following items to class each day.

Text Book
Calculator
Writing Utensil
Notebook

RESEARCH PROJECT

The purpose of Senior Research is for you, as a student at MMSTC, to expand upon the research skills you have acquired over the previous years. In research, the student assumes the role of a "pro-active learner", one who gathers information and data independently of the class. Having been exposed to a full year of each science, you should have a solid background in the basics of each discipline. Having the research experience 2-3 times prior to this, more is expected of you this time. Research also requires that individuals that make up a team work in a cooperative manner in order to accomplish research objectives (experimental design, data collection, statistical analysis, review of literature, formal lab report, presentation, etc.). Because of the aforementioned facts, students are encouraged to select research partners based on whether they can successfully work together rather than on social factors alone.

Because a major goal of research is to gain new insights/information on a discipline, the degree of difficulty of your research is a major factor to consider. All teams will select their own research topic (which must be approved by the Instructor).

Grading

HOMEWORK (20%)

Homework consists of book assignments, worksheets and in-class work.

Generally, each assignment is worth 5 to 10 pts. Your points are added then divided by the total possible for a percentage.

Homework is usually turned in via SCHOOLGY.

Chapter Homework turned after a student takes the corresponding UNIT test will be eligible for 70% of the maximum points. Homework not turned in will be given a point value of zero.

ASSESSMENTS:

Tests (40 %)

Tests are averaged at the end of every 10 weeks.

I do **NOT** drop the lowest grade, but I do *occasionally* curve.

Must be present on test day, and corrections day to be eligible to earn correction points.

Tests are a combination of Multiple Choice and Free Response.

Labs (40 %)

Points are totaled at the end of every 10 weeks and a percentage is calculated. On the average we have one lab per week, each worth approximately 20-50 pts. Labs may also include projects such as posters or presentations. All Research is counted toward your lab grade.

Lab groups will be assigned randomly.

All school rules apply to the classroom.

DO NOT sit on the table or counters, use the lab chairs.

DO NOT touch any lab equipment that may be on the tables.

DO NOT keep notebooks or other belongings in cupboards or drawers in the room.

STAY with your group during lab activities.

DO NOT go into the prep area without permission.

DO NOT go into the teacher's desk looking for equipment without permission.

DO NOT use any computer without permission.

DO NOT wear Ear Buds during class discussion,

PHONES should be put away during class discussion.

DO NOT stick your elbow into your ear.