

Montclair High School

Course Syllabus

Department: Science

Course: Stem Physics

Level: Honors

Credits: 6

Course Description:

This is a course for juniors and seniors who are interested in science. Classes meet for three double periods per week. Topics covered include measurement, vectors, motion, force, energy, light, sound, electromagnetism and modern physics.

This course emphasizes the use of advanced algebra and trigonometry to solve problems and analyze data. Strong math and problem solving skills are therefore a necessity and it is strongly recommended that students enrolling in this course first successfully completed courses in algebra and geometry. It is also recommended that the student have maintained at least a 'B' average in their math courses

Standards:

HS-PS2-1	HS-PS3-1	HS-PS4-1
HS-PS2-2	HS-PS3-2	HS-PS4-2
HS-PS2-3	HS-PS3-3	HS-PS4-3
HS-PS2-4	HS-PS3-4	HS-PS4-4
HS-PS2-5	HS-PS3-5	
HS-PS5-5	HS-PS3-6	

Anchor Text(s):

Text Title	Publisher/Author	Year/Edition	ISBN	Text Distribution
Physics: Principles and Problems	Glencoe/Zitzewitz, Haase, Harper	2013	978-0-07-659252-4	Classroom Set

Units of Study:

- Basic Unit Conversion
- Motion: Position, Velocity, and Acceleration
- Vectors
- Force: Newton's Three Laws of Motion
- Equilibrium
- Momentum and Energy
- Simple Harmonic Motion
- Universal Gravitation
- Geometric Optics

Proficiencies:

By the end of this course, students will:

- Use geometric, algebraic, and physical models to explain and predict outcomes for systems listed in the above standards and proficiencies.
- Use instruments and data collection methods appropriate for a high school level to collect, organize, and analyze data.
- Develop problem solving techniques while conducting inquiries.

Evaluation & Assessment:

- Labwork/Projects 30%
- Tests 20%
- Classwork/Do Now's 20%
- Quizzes 15%
- Homework 15%

“Prior to beginning any lab activities, all students must have submitted a Safety Contract which has been duly signed by both the student and their parent/guardian. This contract will be kept on file by the teacher for the duration of the course.”