

# Montclair High School

## Course Syllabus

**Department:** Science

**Course:** Physics

**Level:** Honors

**Credits:** 6

### Course Description:

This is a course for juniors and seniors who are interested in science. Classes meet six times a week (one double lab and four lectures). 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-PS4-2
HS-PS2-2	HS-PS3-2	HS-PS4-3
HS-PS2-3	HS-PS3-3	HS-PS4-4
HS-PS2-4	HS-PS3-4	HS-PS4-5
HS-PS2-5	HS-PS3-5	
HS-PS2-6	HS-PS4-1	

### 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	Hard copy and online text available

### Supplementary Materials:

We will use a classroom set of books when necessary. Students who wish to sign out a textbook for an extended period will be able to do so.

Supplemental Resources and Problem Sets will be given with each unit.

### Units of Study:

- Basic Unit Conversion
- Motion: Position, Velocity & Acceleration
- Vectors
- Force: Newton's Three Laws of Motion
- Momentum & Energy
- Equilibrium

- Simple Harmonic Motion
- Universal Gravitation
- Geometric Optics
- Waves & Sound
- Electricity & Magnetism

**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 following proficiencies.
- Use instruments and data collection methods normally available to high school student to collect, organize and analyze data.
- Develop problem-solving techniques while conducting inquiries.

**Evaluation & Assessment:**

Marking period grades will be determined by:

- Test & Quizzes                      60%
- Labs & Projects                      30%
- Homework & Classwork            10%

The final grade will consist of each marking period (22.5% each), the cumulative midterm exam (5%) and the cumulative final exam (5%).

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. The teacher will keep this contract on file for the duration of the course.