

Montclair High School

Course Syllabus

Department: Science

Course: Physics

Level: Academic

Credits: 5

Course Description:

This is a course for juniors and/or seniors who are interested in investigating physical concepts and gaining a foundation in physics but not interested in pursuing a degree in science, engineering or technology. Topics covered include measurement, motion, force, momentum, energy, light, sound and electricity & magnetism.

While this course does not require the strongest of math skills it will emphasize the use of math (algebra, graphing, trigonometry, etc.) to solve problems and analyze data. With this in mind it is recommended that the students enrolling in this course first complete Algebra II with at least a “B” average.

Standards:

Next Generation Science Standards: HS-PS2-1-5, HS-PS3-1-4, HS-PS4-1, 3-4

Anchor Text(s):

| Text Title | Publisher/Author | Year/Edition | ISBN | Text Distribution |
|--------------------|------------------------|-------------------------------|-------------------|---|
| Conceptual Physics | Pearson/Paul G. Hewitt | 2009/ 9 th edition | 978-0-13-364749-5 | Hard copy, PDF copy , & online text available |

Supplementary Materials:

Laboratory sheets, problem solving sheets, educational videos, internet activities, articles from journals, magazines, and/or newspapers

Units of Study:

- Motion (position, velocity & acceleration)
- Projectile motion
- Force and acceleration
- Energy & momentum
- Gravitation
- Light & sound
- Electricity & magnetism

Proficiencies:

By the end of this course, students will:

1. Use mathematical models to explain and predict physical systems.
2. Use various methods to collect and analyze data
3. Develop problem-solving skills

4. Solve problems dealing with
 - a. Motion (position, velocity & acceleration)
 - b. Projectile motion
 - c. Force and acceleration
 - d. Energy & momentum
 - e. Gravitation
 - f. Light & sound
 - g. Electricity & magnetism
5. Identify two potential career related paths related to this subject area.

Evaluation & Assessment:

Marking period grades will be determined by:

| | |
|------------|-----|
| Tests | 40% |
| Quizzes | 10% |
| Lab Work | 20% |
| Class work | 15% |
| Homework | 5% |
| Project | 10% |

Final grade will be determined by:

| | |
|-----------------------|------------|
| Marking period grades | 22.5% each |
| Cumulative Midterm | 5% |
| Cumulative Final | 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. This contract will be kept on file by the teacher for the duration of the course.