Southern Regional High School

Manahawkin, New Jersey

Course Syllabus

DEPARTMENT: SCIENCE

COURSE: ADVANCED GEOPHYSICAL SCIENCE

Marking Period 1:

Topics to be covered:

Classroom Expectations/Grading

Lab Safety

Earth Systems:

- Essential laboratory equipment.
- The importance of a universal system of measurement.
- The effect of seasonal weather patterns.
- How to track and predict storms.
- Tectonic plate movement.
- The effect of revolution, rotation and tilt.
- The components of the hydrologic cycle
- The layers of the atmosphere

- Quarterly – Date TBA

Marking Period 2:

Topics to be covered:

Motion and Gravity:

- Essential laboratory equipment.
- The importance of a universal system of measurement
- How to define Relative motion
- The difference between Distance and Displacement
- The difference between scalar and vector
- The purpose of Motion graphs
- Difference between negative and positive acceleration
- The effects of gravity
- The difference between mass and weight

- Quarterly – Date TBA

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Marking Period 3:

Topics to be covered:

Laws of Motion:

- Essential laboratory equipment.
- The importance of a universal system of measurement.
- How balanced and unbalanced forces affect the motion of an object.
- The affect of friction on objects.
- The relationship between mass, velocity and momentum.
- The relationship between mass, force and acceleration.

Energy:

- Vocabulary and key Terms
- Essential laboratory equipment.
- The importance of a universal system of measurement
- The difference between potential and kinetic energy
- Appropriate SI units for temperature and energy
- The Law of Conservation of Energy

- Quarterly – Date TBA

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Marking Period 4:

Topics to be covered:

Ecology:

- Trophic levels within an ecosystem
- The differences between food chains and food webs.
- The biogeochemical cycles
- The factors that limit population size.
- Biological community interactions and symbiotic relationships
- The stages of primary and secondary succession.
- The characteristics of Earth's major biomes.
- The differences between renewable and non-renewable resources.
- Characteristics of sustainable development.
- Benefits of biodiversity.
- Factors that influence our ecological footprint

Cell Processes:

- Cells are made of complex molecules that consist mostly of a few elements.
- There is a relationship between the organization of cells into tissues and the organization of tissues into organs.
- The function of major cell structure

Atomic Structure:

- Information contained in the periodic table block
- The difference between ion, isotope and atom.
- How elements are arranged on the periodic table
- How matter is classified
- The difference between chemical and physical changes
- The difference between physical and chemical properties
- The difference between elements and compounds

- Final Exam – Date TBA