PHYSICS II
2014-2015

Course Description:
Physics II is a second level physics course (non-calculus based) intended for students who are considering pursuit of a science-oriented program in college.

Course Content:

I. In Depth Review
- Motion in one dimenstion
- Vectors and two dimensional motion

II. Circular Motion
- Rotational kinematics
- Rotational dynamics
- Rotational equilibrium

III. Simple Harmonic Motion
- Wave properties
- Springs, pendula, simple harmonic oscillators

IV. Static Electricity
- Electric forces
- Electric fields
- Potential difference (voltage)

V. Electrical Energy
- Capacitance
- Electrical potential and current

VI. Electrical Circuits (Direct Current)
- Resistance, current, voltage
- Series circuits
- Parallel circuits
- Compound circuits

VII. Magnetism
- Magnetic fields
- Induced current, induced voltage
- Inductance

VIII. Alternating Current (AC) Circuits
- Inductors
- Capacitors
- Resistors (RLC) Circuits
- Resonance
- Transformers

IX. Wave Optics
- Wave properties
- Diffraction
- Single slit, double slit, diffraction gratings
- Spectroscopic analysis

X. Relativity
- Einstein's postulates and theory of relativity
- Time dilation
- Length contraction

Required Textbooks and/or Other Reading/Research Materials

College Physics by Serway and Vuille. Brooks/Cole, 2012. This textbook is used as a supplemental source for additional examples and problems.

Course Requirements:

PHYSICS I with a minimum grade of B or HONORS PHYSICS with a minimum grade of B-.

Grade Components/Assessments:
Grades will be weighted based on a category percentage. Sapphire will automatically give a student's grade total as a weighted percentage based on the following category percentage breakdown:
Test/Quizzes: 50%
Labs/Projects: 30%
Homework/Class participation: 20%

Each marking period is worth 20% of a student's overall grade. The final is worth 20% of a student's overall average:

Quarter 1	20%
Quarter 2	20%
Quarter 3	20%
Quarter 4	20%
Final	**20%**

Required Summer Reading/Assignments:

There are no summer reading assignments.