AP Physics
2013-14

Course Description:
The AP PHYSICS C program (calculus based) is intended to form the first part of the college sequence, which serves as the foundation in physics for students majoring in engineering or the physical sciences. It is an intensive and analytic course with emphasis on problem solving, some requiring calculus. The subject matter is mechanics and electricity and magnetism, with approximately equal emphasis on these two areas. A scientific calculator is required for this course, a graphing calculator is recommended.
Because of the demanding nature of this course, it should only be attempted by students that are highly motivated and ready for such work. Students are advised to consult with their parents, teachers and guidance counselors before selecting any AP course. Students will be administered the AP exam for college credit at the end of the course at their own expense.

Course Content:
- Calculus Overview
- Introduction Mathematics and Vectors
- Motion in 1 and 2 Dimensions
- Laws of Motion and Circular Motion
- Work and Energy
- Potential Energy
- Linear Momentum and Collisions
- Rotation of Rigid Objects
- Rolling Motion, Angular Momentum and Torque
- Static Equilibrium and Elasticity
- Oscillatory Motion
- Gravity
- Electric Fields
- Gauss' Law
- Electric Potential
- Capacitors and Dielectrics
- Current and Resistance
- DC Circuits
- Magnetic Fields
- Sources of Magnetic Fields
- Faraday's Law
- Inductance

Required Textbooks and/or Other Reading/Research Materials
The textbook used is a college level textbook. Students will be expected to read sections as necessary, and will be doing problem sets from it.

Physics for Scientists and Engineers by Serway and Jewett 2004.

Course Requirements:
Students are expected to complete a problem set for each chapter and test for a group of chapters. Students will also take the AP Physics C exam if they choose to do so. A midterm and final exam will be given to all students regardless of their taking the AP exam.

Grade Components/Assessments:
Grades will be based on problem sets, 20% and Unit Tests, 80%

Each marking period is worth 20% of a student's overall grade. The midterm and final exam are each worth 10% of a student's overall average:

Quarter 1	20%
Quarter 2	20%
Midterm	**10%**
Quarter 3	20%
Quarter 4	20%
Final	**10%**

Required Summer Reading/Assignments:
None

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