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AP Physics B Course Outline

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The following course provides a systematic and rational introduction to the main principles of physics and emphasizes on the enrichment and development of conceptual understanding and problem-solving ability i.e. ... Skills using algebra and trigonometry, but rarely calculus. In many colleges, this is a one-year course including a laboratory component and is not the usual preparation for more advanced physics and engineering courses. Also, the B course is the foundation in physics for students in the life sciences, premedicine and in some areas of applied sciences, and in other fields that are not directly related to science.

Physics B aims to be representative of topics covered in similar college courses, as determined by periodic surveys. Various colleges and universities contain many additional topics like special relativity. AP teachers wish to add such supplementary material to an AP Physics B course, to enhance its scope. After the AP Exams have been given, many teachers have found that it is a good time to do this late in the year.

Please make a note: Fewer topics that have been covered in Physics C than in Physics B, they all have greater intensity and have greater analytical and mathematical sophistication, and it also includes calculus applications.

The following topics will be covered in the Physics B course:

Newtonian Mechanics (35%)

- Kinematics (including vectors, vector algebra, components of vectors, coordinate systems, displacement, velocity, and acceleration) (7%)
- Newton's laws of motion (9%)
- Work, energy, power (5%)
- Systems of particles, linear momentum (4%)
- Circular motion and rotation (4%)
- Oscillations and gravitation (6%)

Fluid Mechanics and Thermal Physics (15%)

- Fluid Mechanics (6%)
- Temperature and heat (2%)
- Kinetic theory and thermodynamics (7%)

Electricity and Magnetism (25%)

- Electrostatics (5%)
- Conductors, capacitors, dielectrics (4%)
- Electric circuits (7%)
- Magnetic Fields (4%)
- Electromagnetism (5%)

Waves and Optics (15%)

- Wave motion (including sound) (5%)
- Physical optics (5%)
- Geometric optics (5%)

Atomic and Nuclear Physics (10%)

- Atomic physics and quantum effects (7%)
- Nuclear physics (3%)