Tampa Bay Chinese School

AP Physics 1

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Syllabus: AP Physics 1

The Algebra-Based course covers topics and concepts typically included in the first semester of an algebra-based, introductory college-level physics course.

AP Physics 1

1. Introduction
2. Vector and Scalars
3. 1-D Kinematics
4. 2-d Kinematics
5. Dynamics I: Newton's Laws of Motion
6. Dynamics II: Applyin
7. Circular Motion and Gravitation
8. Energy
    A. Work and Energy
    B. Conservation of Energy Rotation
9. Momentum
10. Rotational Motion
11. Fluids
12. Basic Electricity Concept

Chapter 1　Introduction

1.1　Self Introduction

1.2　Class Materials and website access

1.3　Class Rules

1.4　Who are you?

1.5　Class Organization

1.6　What is Physics?

1.7　Measurement in Physicist

Chapter 2   Vectors and Scalars

Chapter 3   Kinematics – 1D

3.1   Distance & Speed: Scalar Quantities

3.2 1D Displacement and Velocity -Vector Quantities

3.3 Acceleration

3.4 Kinematics Equations

3.5 Free Fall

Chapter 4   Kinematics – 2D

Chapter 5   Dynamics I: Newton's Laws of Motion

Chapter 6   Dynamics II: Applying Newton's Laws

6.1   Friction

6.2 Tension, Strings, and Springs

6.3 Connected Objects

6.4 Gravity and Circular Motion

Chapter 7 Circular Motion and Gravitation

7.1 Angular Measure

7.2 Angular Speed and Velocity

7.3 Uniform Circular Motion and Centripetal
     Acceleration

7.4 Angular Acceleration

7.5 Newton's Law of Gravitation

7.6 Kepler's Laws and Earth Satellites

Chapter 8, Part A: Work and Energy

Chapter 8 Part 2: Conservation of Energy

8.5 Conservative Forces

8.6 Determining Potential Energy

8.7 Conservation of Mechanical Energy

8.8 Potential Energy Field

8.9 Conservation of Energy

8.10 Power

Chapter 9   Momentum

Chapter 10 Rotational Motion

Lecture 1:

10.1   Review of Rotational Kinematics

10.2 Rotation of Rigid Body

10.3 Moment of Inertia

10.4 Torque

Lecture 2:

10.5 Equilibrium

10.6 Rotational Dynamics

10.7 Rotational Work and Energy

Lecture 3:

10.8 Angular Momentum

Chapter 11 Fluids

Part I. Fluid Statics

1. Phases of Matter

2. Density and Specific Gravity

3. Pressure in Fluids

4. Atmospheric Pressure and Gauge Pressure

5. Pascal's Principle

6. Measurement of Pressure; Gauges and the Barometer

7. Buoyancy and Archimedes' Principle