Syllabus of Phys.145 (Spring 2014)

Chapter 1 (1): Motion in a Straight Line
1.2 Displacement, Average Velocity
1.3 Instantaneous velocity
1.4 Acceleration
1.5 Finding the motion of an object

Chapter 2 (2): Vectors
2.1 An Introduction to Vectors

Chapter 3 (3): Newton's Laws of Motion
3.3 Newton's First Law
3.4 Equilibrium
3.5 Newton's Third Law
3.6 Newton's Second Law
3.8 Some Examples of Newton's Laws
3.12 Friction

Chapter 4 (6): Work, Energy, and Power
6.1 Work and Energy
6.2 Kinetic energy
6.3 Potential energy
6.4 Dissipative Forces
6.6 Solving Problems using Work and Energy
6.9 Power

Chapter 5 (13): The Mechanics of Nonviscous Fluids
13.2 The Equation of Continuity; Streamline Flow
13.3 Bernoulli's Equation
13.4 Static Consequences of Bernoulli's Equation
13.7 Dynamic Consequences of Bernoulli's Equation

Chapter 6 (17): Direct Currents
17.1 Electric Current
17.2 Resistance
17.5 Series and Parallel Resistors; Kirchhoff's Rules
17.12 Kirchhoff's Rules in Complex Circuits

Chapter 7 (24): Mirrors, Lenses and Imaging Systems
24.1 Mirrors
24.2 Lenses
24.3 Image Formation
24.4 The Power of a Lens; Aberrations

Chapter 8 (26): Particle Properties of Light: The Photon
26.1 The Photoelectric Effect
26.3 X-Rays

Chapter 9 (30): Nuclear Physics
30.1 Radioactivity
30.2 Half-Life
30.9 Radioactive Decays

Chapter 10 (31): Ionizing Radiation
31.1 The interaction of Radiation with Matter
31.2 Radiation Units

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