

SECTION OVERVIEW

Unit 2: Mechanics I - Energy and Momentum, Oscillations and Waves, Rotation, and Fluids

Chapter 3: Work and Energy

- 3.1: Introduction to Work and Energy
- 3.2: Work- The Scientific Definition
- 3.3: Kinetic Energy and the Work-Energy Theorem
- 3.4: Gravitational Potential Energy
- 3.5: Conservative Forces, Potential Energy, and Conservation of Energy
- 3.6: Spring Potential Energy
- 3.7: Power
- 3.E: Work and Energy (Exercise)

Chapter 4: Impulse and Momentum

- 4.1: Introduction to Linear Momentum and Collisions
- 4.2: Linear Momentum and Force
- 4.3: Impulse
- 4.4: Conservation of Momentum
- 4.5: Elastic Collisions in One Dimension
- 4.6: Inelastic Collisions in One Dimension
- 4.E: Impulse and Momentum (Exercise)

Chapter 5: Oscillations and Waves

- 5.1: Introduction to Oscillatory Motion and Waves
- 5.2: Period and Frequency in Oscillations
- 5.3: Simple Harmonic Motion- A Special Periodic Motion
- 5.4: Forced Oscillations and Resonance
- 5.5: Waves
- 5.6: Wave Interference- Standing Waves and Beats
- 5.7: Sound
- 5.8: Speed of Sound, Frequency, and Wavelength
- 5.9: Doppler Effect and Sonic Booms
- 5.E: Oscillations and Waves (Exercise)

Chapter 6: Rotation

- 6.1: Introduction to Rotational Motion and Angular Momentum
- 6.2: Angular Acceleration
- 6.3: Dynamics of Rotational Motion- Rotational Inertia
- 6.4: Rotational Kinetic Energy
- 6.5: Angular Momentum and Its Conservation
- 6.6: Gyroscopic Effects- Vector Aspects of Angular Momentum
- 6.E: Rotation (Exercise)

Chapter 7: Fluids

- 7.1: Introduction to Fluids
- 7.2: What Is a Fluid?
- 7.3: Density
- 7.4: Pressure
- 7.5: Pressure Due to the Weight of Fluid
- 7.6: Archimedes' Principle
- 7.7: Flow Rate and Its Relation to Velocity
- 7.8: Bernoulli's Equation
- 7.E: Fluids (Exercise)

Thumbnail: Surface tension preventing a paper clip from submerging. (CC-SA-BY 3.0; [Alvesgaspar](#) via [Wikipedia](#))

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