Book: College Physics (OpenStax)

This introductory, algebra-based, two-semester college physics book is grounded with real-world examples, illustrations, and explanations to help students grasp key, fundamental physics concepts.

- Front Matter

1: The Nature of Science and Physics
2: Kinematics

\[
a = \frac{dv}{dt}, \quad v + dv = v, \quad v = \frac{dr}{dt}
\]

3: Two-Dimensional Kinematics

4: Dynamics- Force and Newton's Laws of Motion

5: Further Applications of Newton's Laws- Friction, Drag, and Elasticity

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6: Uniform Circular Motion and Gravitation

• 7: Work, Energy, and Energy Resources

• 8: Linear Momentum and Collisions

\[ \tau = \mathbf{r} \times \mathbf{F} \]
\[ \mathbf{L} = \mathbf{r} \times \mathbf{p} \]

• 9: Statics and Torque
10: Rotational Motion and Angular Momentum

11: Fluid Statics

12: Fluid Dynamics and Its Biological and Medical Applications

13: Temperature, Kinetic Theory, and the Gas Laws
14: Heat and Heat Transfer Methods

15: Thermodynamics

16: Oscillatory Motion and Waves

17: Physics of Hearing
18: Electric Charge and Electric Field

19: Electric Potential and Electric Field

20: Electric Current, Resistance, and Ohm's Law

21: Circuits, Bioelectricity, and DC Instruments
22: Magnetism

23: Electromagnetic Induction, AC Circuits, and Electrical Technologies

24: Electromagnetic Waves

25: Geometric Optics
26: Vision and Optical Instruments

27: Wave Optics

28: Special Relativity

29: Introduction to Quantum Physics
30: Atomic Physics

31: Radioactivity and Nuclear Physics

32: Medical Applications of Nuclear Physics

33: Particle Physics
• Back Matter

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