Fundamental Concepts in Physics

Newton’s Laws of Motion

1. First Law (Law of Inertia): A body remains at rest or in uniform motion unless acted upon by an
2. Second Law: Force equals mass times acceleration (F = m × a).
3. Third Law: For every action, there is an equal and opposite reaction.

Work, Energy, and Power

Work is done when a force acts on an object and causes displacement.

Kinetic Energy (KE) = ½mv², Potential Energy (PE) = mgh.

Power is the rate of doing work, P = W / t.

Law of Universal Gravitation

Every particle in the universe attracts every other particle with a force proportional to the product o

Mathematically: F = G × (m■ × m■) / r².