

UNIT	SKILLS	TYPE OF ASSESSMENT USED
VECTORS	<ul style="list-style-type: none">• Definition• Vector Addition• Scalar Multiplication• Vector Subtraction• Standard Basis Vectors• Vector Operations using Components• Magnitude• Direction (inclination and sense)• Dot Product• Vector Product	Multiple choice, open answer application
KINEMATICS	<ul style="list-style-type: none">• Displacement• Speed and Velocity• Acceleration• Uniformly-Accelerated Motion• BIG FIVE Equations for Kinematics• Kinematics with Graphs• Free Fall• Projectile Motion• Kinematics with Calculus	Multiple choice, open answer application <u>LAB 1:</u> Free Fall Motion
NEWTON'S LAWS	<ul style="list-style-type: none">• First, Second and Third Laws• Weight• Normal Force• Friction• Pulleys• Inclined Plane• Uniform Circular Motion	Multiple choice, open answer application <u>LAB 2:</u> Laws of Static Equilibrium <u>LAB 3:</u> Friction on an Inclined Plane

UNIT	SKILLS	TYPE OF ASSESSMENT USED
WORK, ENERGY AND POWER	<ul style="list-style-type: none">• Work• Work done by a variable force• Kinetic Energy• Work-Energy Theorem• Potential Energy• Conservation of Mechanical Energy• Potential Energy Curves• Power	Multiple choice, open answer application <u>LAB 4:</u> Conversion of Potential Energy Into Kinetic Energy
LINEAR MOMENTUM	<ul style="list-style-type: none">• Impulse• Conservation of Linear Momentum• Collisions• Center of Mass	Multiple choice, open answer application <u>LAB 5:</u> Elastic and Inelastic Collisions on an Air Track
ROTATIONAL MOTION	<ul style="list-style-type: none">• Rotational Kinematics• BIG FIVE Equations for Rotational Motion• Rotational Dynamics• Torque• Rotational Inertia• Kinetic Energy of Rotation• Work and Power• Angular Momentum• Conservation of Angular Momentum• Equilibrium	Multiple choice, open answer application

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NEWTON'S LAW OF GRAVITATION	<ul style="list-style-type: none">• Kepler's Laws• Newton's Law of Gravitation• The Gravitational Attraction Due to an Extended body• Gravitational Potential Energy• Proof of Equation• Elliptical Orbits• Orbits of the Planets	Multiple choice, open answer application
OSCILLATIONS	<ul style="list-style-type: none">• Simple Harmonic Motion (SHM): The Spring-Block Oscillator SHM in Terms of Energy• The Kinematics of SHM• The Spring-Block Oscillator: Vertical Motion• The Sinusoidal Description of SHM• Instantaneous Velocity and Acceleration• Pendulums	Multiple choice, open answer application <u>LAB 6:</u> Simple Harmonic Motion