

**PH111X Mechanics Laboratory Experiments**

<b>Lab Experiment</b>	<b>Brief Description</b>
Motion in One Dimension	The purpose of this lab experiment is to: <ul style="list-style-type: none"><li>• Measure your motion with a motion detector</li><li>• Study how your motion looks as a distance (position) vs time graph</li><li>• Analyze motion graphs</li><li>• Determine the acceleration due to gravity for a ball tossed above a motion sensor</li></ul>
Projectile Motion	The purpose of this Lab is to: <ul style="list-style-type: none"><li>• Study the motion of a projectile launched at a zero angle with the horizontal</li><li>• Determine the initial velocity of the ball as it leaves the edge of the table by applying the kinematics</li><li>• equations describing motion with constant velocity and motion with constant acceleration.</li><li>• Analyze the errors in this experiment</li></ul>
Newton's Laws of Motion	In this laboratory, students will study Newton's Laws of motion and friction.
Conservation	The goals of this Lab are to: <ul style="list-style-type: none"><li>• Study momentum and energy changes (if any) during inelastic collision</li><li>• Study how the total momentum of a two-object system is affected by an explosion.</li><li>• Study momentum and energy changes (if any) during elastic collision</li></ul>
Rotational Dynamics	The goals of this lab experiment are: <ul style="list-style-type: none"><li>• Collect angular acceleration data for objects subjected to a torque.</li><li>• Determine an expression for the torque applied to a rotating system.</li><li>• Determine the relationship between torque and angular acceleration.</li><li>• Relate the slope of a linearized graph to system parameters.</li><li>• Observe experimentally a collision between a stationary and spinning disks.</li><li>• Predict the angular velocity of the disks after the collision and compare with the experimentally observed one</li></ul>