# 3 Lecture - PHY101

## Important Subjective

**What is projectile motion?**

**Answer:** Projectile motion is the motion of an object that is thrown, launched, or dropped near the Earth's surface and moves along a curved path under the influence of gravity.

**What are the two components of motion in projectile motion?**

**Answer:** The two components of motion in projectile motion are the horizontal and vertical components.

**What is the equation of motion for projectile motion in the x direction?**

**Answer:** The equation of motion for projectile motion in the x direction is x = x0 + v0xt, where x is the final position, x0 is the initial position, v0x is the initial velocity in the x direction, and t is the time elapsed.

**What is the equation of motion for projectile motion in the y direction?**

**Answer:** The equation of motion for projectile motion in the y direction is y = y0 + v0yt - 1/2gt^2, where y is the final position, y0 is the initial position, v0y is the initial velocity in the y direction, g is the acceleration due to gravity, and t is the time elapsed.

**What is circular motion?**

**Answer:** Circular motion is the motion of an object along a circular path.

**What is centripetal force?**

**Answer:** Centripetal force is the force acting on an object that causes the circular motion and is directed toward the center of the circle.

**What is the relationship between centripetal force, mass, velocity, and radius?**

**Answer:** The relationship between centripetal force, mass, velocity, and radius is F = mv^2/r.

**What is the period of the circular motion?**

**Answer:** The period of circular motion is the time taken for one complete revolution around the circle.

**What is the frequency of circular motion?**

**Answer:** The frequency of circular motion is defined as the number of revolutions per unit of time.

**How are period and frequency related?**

**Answer:** Period and frequency are related by $T = 1/f$, where T is the period and f is the frequency.