

Topics For Exam3 [Chap 9, 10, 7, 6]

[Chap9, 10]

The law of universal Gravitation, Inverse Square law

Moon: emitter vs. reflector, Gravity lock, Phases, Orbital motion

Ocean Tides (Spring tides, Neap tides)

Kepler's laws of planetary motion, Inner planets vs Outer planets, Galaxy

Newton's Gravity vs. Einstein's Gravity

[Chap7]

Energy, power

Work, Kinetic Energy, Potential Energy, Mechanical Energy (Total Energy)

Conservation of Energy (pendulum, Pulley, Rollercoaster)

[Chap6]

Momentum

Impulse

Changes in Momentum (examples)

Conservation of linear momentum

Collisions (Elastic vs. Inelastic)

Equation]

Work = F x d P.E. _{height} = m g h K.E.=1/2 mv²

Mechanical Energy = P.E. + K.E.

Momentum, P= m x v Impulse = F x t

The universal law of gravitation $F_G = G \frac{m_1 m_2}{r^2}$