# PHYSICS PLACEMENT EXAM TOPIC LISTS

**MECHANICS** (both 130-1 & 135-1 unless otherwise noted):

**Kinematics:** uniform acceleration, projectile motion, uniform circular motion, relative motion

**Dynamics:** Newton's laws of motion, work & energy, conservation of mechanical energy, center of mass, conservation of linear momentum, collisions

**Rotational Motion:** angular acceleration, torque, rolling, conservation of angular momentum

**Other Topics:** oscillations, static equilibrium, fluids (130-1 only), gravity (universal law & orbital motion), gravitational potential energy & escape velocity (135-1 only)

**ELECTRICITY & MAGNETISM** (both 130-2 & 135-2 unless otherwise noted):

**Electricity:** electric charge, induced charge, insulators & conductor, Coulomb's law, electric fields & potential, capacitance, & dielectrics

**Magnetism:** magnetic force, Ampere's law, torque on a current loop

**Induction:** Faraday's Law, Lenz's law, back emf, eddy currents, transformers

**Circuits:** emf, Ohm's law, Kirchhoff's rules, power, DC & AC circuits

**Maxwell's Equations (135-2 only):** Gauss's Laws for electricity & magnetism, Ampere's Law with displacement current, Faraday's Law of Induction