

## Study Guide (for final Exam)

1. Everything covered before the third midterm.
2. Rotational motion (continued):
  - a. What is the difference of translation and rotation?
  - b. Combination of the translation and rotation: rolling
  - c. Energy and angular momentum in the rotational motion.
3. Equilibrium and Elasticity:
  - a. Equilibrium condition: BOTH total force and total torque are zero.
4. Gravitation:
  - a. Gravitational quantities: acceleration, force, potential energy.
  - b. Satellites on stable orbits. (their velocity, kinetic energy, total energy, angular momentum.)
5. Oscillations:
  - a. Simple harmonic motion. (equation, solution)
  - b. angular frequency.
  - c. Applications (spring, pendulums)
  - d. Damped oscillation. (decreasing energy)
6. Fluids:
  - a. Pressure, property of fluids.
  - b. Buoyant force.
  - c. Continuity of the flow of fluids.
  - d. Pressure of flowing fluids (Bernoulli's equation) and its applications.