

PHY 181

Final objectives

- State two factors that affect the magnitude of the friction force. Be able to identify these factors and their impact in real world scenarios.
- Define static friction and kinetic friction and be able to compute F_f , μ and F_N given two of them.
- Be able to use the numerical values of static and kinetic friction to predict the behavior of real world scenarios.
- Describe the following types of forces: tensile, compressive, shear, torsion, friction, normal. Be able to identify which type of force is being applied to an object.
- Explain the concept of momentum including how it is related to velocity and mass. Be able to calculate \vec{p} , m or \vec{v} given two of the values.
- Define impulse (\vec{J}) and be able to compute \vec{J} , \vec{F} or Δt given two of the values.
- Be able to use the conservation of momentum to describe the behavior of objects or groups of objects in real world scenarios.
- Be able to relate impulse to momentum.
- Define the following terms, including typical units: work, energy, potential energy, kinetic energy, power.
- Describe the factors that determine the value of the following energy types, including their mathematical expression: potential energy, kinetic energy. (This objective is from SRS's course objectives. For this reason, I will not be providing the standard forms of the equations (related to energy) on the test. If alternative forms are needed, they will be provided. For instance: $v = \sqrt{\frac{2E_k}{m}}$.)
- Be able to use the conservation of energy to describe the behavior of objects in real world scenarios. Also be able to use the concept in computational problems.