IMPORTANT TOPICS FROM STATICS THAT ARE NEEDED TO STUDY DYNAMICS:

- Vector Manipulation: Addition, Cross-Product
- Vector Representation of Forces, Moments
- Free-Body Diagrams
- Friction
- Mass Moments of Inertia

IMPORTANT TOPICS TO BE LEARNED IN DYNAMICS:

- Newton’s 2nd Law: \( \Sigma \vec{F} = m \vec{a} \) and \( \Sigma \vec{M} = I \vec{a} \)
- Kinematics: Relates Time, Displacement, Velocity and Acceleration without Considering the Forces or Moments Causing the Motion.
- Kinetics: Relates Forces, Moments, Mass of the Body, and Shape of the Body to Predict the Motion of the Body.
- Linear Momentum and Angular Momentum:
  \[ \Sigma \vec{F} = \vec{L}, \quad \Sigma \vec{M} = \vec{H} \]
- Kinetic Energy and Work Done:
  \[ U_{1-2} = T_2 - T_1 \]
PRINCIPLE OF CONSERVATION OF ENERGY:

\[ T_1 + V_1 = T_2 + V_2 \]
\[ V = \text{potential energy} \]