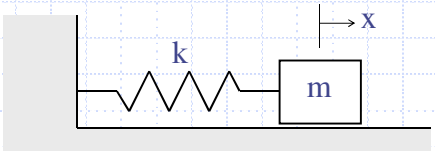
Modeling & Energy Methods

Section 1.4

Introduction

- **Newton's 2nd Law** provides a good way of obtaining the system differential equation.
- The **Energy Method** is useful for more complicated situations (for conservative systems).
- Another method (**Lagrange's Method**) is useful for conservative multi-degree-of-freedom systems.
- Another method (**Hamilton's Method**) is useful for non-conservative multi-degree-of-freedom systems.

Review of Energy Types

- Potential Energy
  - Gravitational – body:
  - Gravitational – volume:
  - Spring – linear:
  - Spring – torsion:
- Kinetic Energy
  - Linear:
  - Rotational:

Applying the Technique