

# Study Guide:

1. Conservation of energy
  - When, why, how... units
  - Also, be able to define it.
  - When do we not need the mass
2. Simple Calculations with  $E_k$  as well as  $E_p$ .
3. Be able to define work
  - Calculate in 3 ways: Graphing,  $\Delta E$ ,  $Fd\cos(\theta)$
4. Crossover between kinematics and conservation of energy.
  - Eg: an accelerating object. Get  $F, d$ , get work... get's change in energy.
5. Wasted energy: what is it? Heat? Friction?
  - How do we get it? Think measured vs calculated here.
6. Understand how, Temp, Vel, and Height are all arbitrary numbers. I will want you to explain this. Be prepared for a question on each.
7. Pendulums → conservation
8. Power
9. Efficiency
10. Change of temp.  $Q=mc\Delta T$ .
  - Hot side + cold side = 0.