

# PHYSICS 151 READING

## ASSIGNMENT FOR OCTOBER 29

### SECTIONS 8.3 AND 10.4-10.6

Please notice that this file is two pages long.

#### 8.3 - Springs and Hooke's Law

- Hooke's Law - the amount of force needed to stretch a spring increases linearly with *stretching* distance.
- Spring can push or pull depending on whether they are compressed or stretched.
- The spring constant has units  $N/m$ .

#### 10.4 - Elastic Potential Energy

- Go back and pay special attention to the section on the potential energy due to a spring = elastic potential energy.
- I prefer to use the equation  $U_{el} = 1/2ks^2$  to stress the fact that we need to use how far the spring has been stretched (or compressed).
- Be careful with the book's assertion on page 304 that we can set zero potential energy anywhere we like. That's kind of true, but we still need to measure the distance,  $s$ , from the unstretched position of the spring.

## 10.6 - Using the Law of Conservation of Energy

- Again, I'll mix introducing potential energy and using it to solve problems.
- On Monday, we'll discuss elastic potential energy and then how to use it to solve problems.
- Examples 10.12 will be similar to those in class.