

**ES 204**  
**Mechanical Systems Crane Lab Write-up**  
**(Due Friday, Week 10)**

**Names** \_\_\_\_\_

**Objective**

You will examine the swinging crane problem in three different ways:

1. Working Model (Lab 9)
2. Analytically (HW 4.48, Lecture 25)
3. Experimentally (Lab 10)

You will be required to submit the following:

1. The Excel spreadsheet used in the experiment.
2. The Excel spreadsheet used with Working Model
3. A snapshot of your Working Model Simulation
4. A copy of your analytical solution.

**Discuss these below or attach a discussion:**