Important notes:
1. Do not copy directly from the instructions, other students, or this sample report. Such will be considered plagiarism and dealt with accordingly.
2. Either write out questions or clearly indicate to which question you are answering. Failure to do so will result in loss of grades.
3. Always support/justify your answers for full marks.

Lab Report 1: Write the objective of your experiment.
Brief summary of objective as given in the instructions.

Lab Report 2: Write the relevant theory of this experiment
Include: definition of simple harmonic motion
relevant equations and definition of symbols

Lab Report 3: List your apparatus and sketch your setup.
Include: list of apparatus
sketch of setup

Lab Report 4: Sketch the expected form for the graphs of position vs time and force vs time. Explain your reasoning.
The expected shape of a force vs time and position vs time graphs are as shown. I expect these forms because....
Lab Report 5: Do your graphs match the expected form? If they do not match, discuss why.

State whether or not the graphs agree. Indicate any differences and explain why they are different.

Instructors initial □

Lab Report 6: Record the period. Include an estimate of the uncertainty.

The period is __________ ± __________ s.

Lab Report 7: Describe how you determined the period using your graph.

Include description of steps used to find period. Also describe how uncertainty was estimated.

Lab Report 8: Record the period. Include an estimate of the uncertainty.

The period is __________ ± __________ s.

Lab Report 9: Describe how you determined the period using a stopwatch.

Include description of steps used to find period. Also describe how uncertainty was estimated.

Lab Report 10: Compare the two values of period: Do they agree? Comment on any differences.

The range of period from the graph is __________ to __________ s.
The range of period from the stopwatch is __________ to __________ s.
Indicate whether or not the ranges overlap and comment on if the periods agree. If the periods do not agree, include a discussion.

PART V: Determining the Mass

Lab Report 11: Record the mass of the cylinder. Include uncertainty.

The mass is __________ ± __________ kg.

Lab Report 12: Describe your method to determine the mass of the cylinder. You may wish to include any equations and discuss the use of a graph.

Include description of steps used to find mass with the graph. Include what graph you plotted and any fits you made. Include any equations. Also describe how uncertainty was estimated.

Lab Report 13: Record the mass of the cylinder. Include uncertainty.

The mass is __________ ± __________ kg.
Lab Report 14: Compare the mass found using the two methods and comment on the agreement.

The range of mass from the graph is __________ to __________ s.
The range of mass from the balance is __________ to __________ s.
Indicate whether or not the ranges overlap and comment on if the masses agree. If the masses do not
agree, include a discussion.

Lab Report 15: Use the mass obtained from the balance and the period you found earlier to
determine the spring constant of the spring and its uncertainty.

Calculate the spring constant. Show your workings. Also show your workings for the uncertainty.
The spring constant is __________ ± __________ N/m.

Lab Report 16: Describe your method to determine the spring constant of the spring. Report the
value of the spring constant and its uncertainty.

Include description of steps used to find mass with the graph. Include what graph you plotted and any
fits you made. Include any equations. Also describe how uncertainty was estimated.
The spring constant is __________ ± __________ N/m.

Lab Report 17: Does this value agree with the value found previously? Comment.

The range of spring constant from the mass and period is __________ to __________ N/m.
The range of spring constant from the graph is __________ to __________ N/m.
Indicate whether or not the ranges overlap and comment on if the spring constants agree. If the values
do not agree, include a discussion.

Lab Report 18:
Outline briefly the steps of your experiment.

List experimental steps.
List graphs drawn and analysis done.

Lab Report 19:
List your experimental results and comment on how they agreed with the expected results.

My results were:
The values of period are __________ ± __________ s and __________ ± __________ s. I
found this using two different methods which agreed/disagreed.
The values of mass are __________ ± __________ kg and __________ ± __________ kg. I
found this using two different methods which agreed/disagreed.
The spring constant is __________ ± __________ N/m. I found this using two different methods
which agreed.

Lab Report 20:
List at least three sources of experimental uncertainty and classify them as
random or systematic.

List at least three sources of uncertainty. State if they are random or systematic.

Graphs should be stapled to report.