

Physics 152 Lab Syllabus

Fall 2008

Professors: Mark F. Masters, Ph.D. and Sumith Doluweera.

Lab Meets Friday 10:00 – 11:50, Masters; 14:30-16:20, Doluweera.

**Grading:** There are 13 laboratories in the semester. You may miss one laboratory. There will be no make-up laboratories. This policy is in place because of the collaborative nature of the laboratories. The collaboration cannot be duplicated during a make-up laboratory. If no laboratories are missed, then the last lab counts as extra credit. (Modification for athletics students and official medical excuses: a make-up laboratory must be completed prior to the next laboratory.)

A laboratory will consist of a pre laboratory assignment that must be completed prior to the lab session and will be due to either Professor Masters or Doluweera by 4PM Wednesday.

Each lab session is worth 20 points. These 20 points are made up of the following components:

|                      |           |
|----------------------|-----------|
| Pre-lab              | 5 points  |
| Active Participation | 5 points  |
| Final Task           | 10 points |

The purpose of the prelab is to get you thinking about the physics that will be used in the upcoming laboratory. For this reason it is of especial importance that you **THINK** about and seriously consider the questions posed in the prelab.

Grading of pre-labs is mainly based on effort. What this means is that your prelab grade is based on completeness, logic, and reasoning **AND past** laboratory experiences and observations.

The laboratory is a collaborative effort and for this reason, it is acceptable if you work in small groups to complete the prelabs. However, collaboration does **not** mean that you explicitly copy. Collaboration means working as partners. Any appearance of cheating will result in a zero grade. If you cannot work in a group effectively, then work on your own.

This laboratory probably will be quite different from your previous laboratory experiences. This is because you will be expected to operate with a significant amount of independence in how you perform any investigation. You will determine what data to collect and how to collect that data. Furthermore, the laboratories are arranged so that results of previous lab sessions will be important in present and future lab sessions. For this reason it is critical that each member of the laboratory keep complete laboratory notes incorporating the answers of any discussion questions and corrections to mistakes.

Preliminary and Tentative list of labs

|        |  |
|--------|--|
| Lab 1  | Pre-testing  |
| Lab 2  | Kinematics I - Learning Logger Pro and Motion Sensor. Position-Time Graphs, Velocity Time Graphs       |
| Lab 3  | Kinematics II – Motion with acceleration in the same direction as velocity.                            |
| Lab 4  | Kinematics III – Motion with acceleration in the opposite direction as the velocity Graphical analysis |
| Lab 5  | Sink or Swim: Acceleration vs. angle of force  |
| Lab 6  | Unknown Mass   |
| Lab 7  | Stomper-Fan Cart Pull – Net Force  |
| Lab 8  | Mining Cart  |
| Lab 9  | Velocity after towing an unknown mass cart a fixed distance  |
| Lab 10 | Cart raising a mass when it is initially moving  |
| Lab 11 | TBA  |
| Lab 12 | TBA  |
| Lab 13 | TBA  |
| Lab 14 | TBA  |
| Lab 15 | Post-testing   |