COLLEGE OF SOUTHERN MARYLAND

PHY1010L - FUNDAMENTALS OF PHYSICS I LAB (1 CR)

SYLLABUS – SUMMER II 2010

INSTRUCTOR: Justin Baker

CLASS TIMES: Section 81036: M/W 8:00 p.m. – 9:50 p.m.

OFFICE HOURS: By appointment.

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PREREQUISITES: MTH1080 Intermediate Algebra and Introduction to Trigonometry.

COREQUISITES: PHY1010 Fundamentals of Physics I in same or previous semester

COURSE DESCRIPTION: This lab is designed to accompany the course: 
PHY 1010 - Fundamentals of Physics I. Specifically the lab covers such mechanical concepts as measurement, vectors, linear motion, projectile motion, force, work, energy, momentum, simple machines rotational motion, fluids and sound.
GENERAL EDUCATION: The faculty of The College of Southern Maryland has prepared a statement of what it considers to be the components of general education for all students who graduate from one of our two-year programs. This statement appears in the current College Catalog. While no single course can be expected to address all of these components, the sum of the courses a student takes should allow ample opportunity for all components to be experienced.

In PHY1010L lab, students will have the opportunity to:

15. Perform mathematical operations accurately;

16. Make mathematical estimates and approximations to judge the reasonableness of results;

17. Interpret graphs, tables and charts;

18. Understand mathematical information and relationships stated in words;

19. Utilize appropriate mathematical models to solve problems while recognizing the assumptions and limitations of the models;

24. Select and use appropriate instruments to measure and observe objects and phenomena;

25. Describe their observations and measurements accurately using appropriate terms and units;

27. Evaluate the significance of conclusions reached;

35. Apply appropriate theories to solve problems;

57. Identify, define, evaluate and solve problems;

58. Compare, contrast and classify information and concepts;

59. Recognize cause and effect;
69. Understand methodologies of natural science.

**STUDENT EXPECTATIONS:** In order for students to be successful in physics labs, the Mathematics, Physics, and Engineering faculty has developed the following common expectations of all students.

1.) Students need to take responsibility for their own learning. This includes, but is not limited to:

   · Arriving on time and staying for the entire lab.
   
   · Actively participating in the lab and not copying partners’ work.
   
   · Not engaging in other activities that detract from the learning experience in lab.
   
   · Bringing the required materials to class such as pencils, pens, and calculators. This also includes downloading and printing the lab write-up.
   
   · Taking care of all business (phone calls, bathroom breaks, food, drinks, etc.) before lab begins.

2.) Students are expected to be an *active* participant in the lab, to participate in group measurements and calculations and to ask and answer questions.

3.) It is the student responsibility to stay current with lab reports.

4.) Students should keep track of their own grade and are expected to take responsibility for knowing their grade status throughout the semester.

5.) To be successful in a physics course, the student must:

   · *Understand* the material.
   
   · *Process* the material.
   
   · *Apply* what has been learned.
Remember what has been learned so it can be applied in the future.

**REQUIRED MATERIALS:** Lab reports for PHY1010L are available online at [http://www.itc.csmd.edu/mth/dons/](http://www.itc.csmd.edu/mth/dons/). To access, select: “Courses I’m Teaching This Semester” then PHY1010L “Lab Reports”. Next select “Course Index” and either “Physics” for Department or “Smith, Don” for instructor. Finally select the course “PHY1010L Fundamentals of Physics I Lab”. The password is: **csmphy1010l**. Copies of the introduction and Lab 1 will be distributed by the instructor during the first class session. Students are responsible for printing all subsequent reports. A graphing calculator is required. Classroom support is provided for the Texas Instruments TI-83.

**LAB REPORTS:** The lab experiments should be read and understood before coming to class. Each laboratory session will begin with an orientation and pre-lab analysis of the experiment being conducted. The lab reports each consist of the following five parts:

1. Objective
2. Procedure
3. Data
4. Calculations
5. Questions (when assigned)

All data and calculations should be done on the report in pencil and be neat and clearly legible. Lab reports are due at the end of the lab session.

**LAB MAKEUP POLICY:** Missed labs may be made up at the instructor's discretion either during another lab session or the final week of the class.
PERFORMANCE EVALUATION:

Student performance will be based entirely on graded lab reports. There are twelve graded labs each graded on a scale of 0 to 10. The first lab session is an introduction/safety orientation and will not be graded. Final grades will be assigned as follows:

- 90 - 100% = A
- 80 - 89% = B
- 70 - 79% = C
- 60 - 69% = D
- Below 60% = F

ATTENDANCE POLICY: Attendance will be taken every day but is not mandatory. The student will be responsible for any and all announcements, handouts, assignments, materials, etc. presented during class.

STUDENT INTEGRITY POLICY: Students will work together in lab groups during the initial data collection phase of the labs. Final calculations and conclusions however are to be done on the lab reports independently by each student. Any violations of the Student Code of Conduct as outlined in the Student Handbook may result in a grade of zero for a lab report and will be forwarded to the Director of Student Affairs and the College Judicial Committee for review and possible disciplinary sanctions.

AUDIT AND WITHDRAWAL POLICY: Students are reminded to consult the College Catalog for dates, procedures, responsibilities and impacts of changing registration status. **Monday, July 19** is the last day to withdraw from a course or change an AUDIT to a CREDIT or CREDIT to an AUDIT.
An AUDIT is not the same as WITHDRAWAL. Failure of an auditing student to attend at least 50% of the class sessions after changing from credit status will receive an "F" for the course.

**DISABILITIES AND SPECIAL NEEDS:** Students with disabilities or special needs must present an authorized Accommodation Plan to the instructor in order to receive special accommodations (extra time, large print, tape recorder, etc.) for the course. If a student has an authorized Accommodation Plan, it should be made known to the instructor as soon as possible.

**UNAUTHORIZED PERSONS:** Unauthorized persons (children, friends, family members and any other persons not registered for the course) are not allowed in the classroom. Details of this college policy can be found in the Student Handbook.
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LAB 13 Resonance of Air Columns/The Velocity of Sound