Syllabus for PHYS 222
Laboratory Physics for Science and Engineering Summer 2021

Laboratory Location: Room 103B Lewis Hall

Teaching Assistant- Alexander Denette (Email - aodenett@go.olemiss.edu) Office Hours (TBD)
Instructor – Bin Xiao – Instructor of record and final arbiter of grades. (Email- bxiao@olemiss.edu)
Lab Physicist – Dan Miller (Email – dbmille2@olemiss.edu)

Corequisite Course– PHYS 212 is required.

General lab guidelines: Please follow the instructions on the University COVID-19 information website:
https://coronavirus.olemiss.edu/

Goals: In this course you will perform experiments that complement and supplement the concepts studied in the corequisite lecture course, PHYS 212. You will learn laboratory skills and gain an understanding of laboratory measurements and their uncertainties. As in most Physics classes, critical thinking, analytical reasoning and problem-solving skills will be emphasized.

Learning Outcomes: This lab course will help students to achieve some of the learning objectives of the PHYS 212 course. On completion of this course, students should also be able to do the following:

Conceptualize complex issues or problems – Develop abstract representations of real systems studied in the laboratory, understand their limitations and uncertainties, and make predictions using models.

Interpret data and appraise evidence – Collect, analyze, and interpret real data from personal observations of the physical world to develop a physical worldview. Analyze and display data using statistical methods and critically interpret the validity and limitations of these data and their uncertainties.

Communicate a reasonable and effective argument, response, or conclusion – Present results and ideas with reasoned arguments supported by experimental evidence and utilizing appropriate and authentic written and verbal forms.

Expectations: At the beginning of each lab, each student should turn in the appropriate lab report on the previous lab experiment and also turn in the pre-lab for the current week’s experiment. Lab reports and Pre-labs will then be submitted via BLACKBOARD.

For most experiments there will also be a quiz given at the beginning of lab.

Data collected in lab must be initialed by your instructor at the end of each experiment.

Lab Duplication Policy: You are not permitted to copy old lab reports or give your reports (paper or electronic versions) to other students (in both the current or subsequent semesters). An electronic copy of your lab report must be submitted to SAFE ASSIGN, which will check for plagiarism. Significant cases of plagiarism or cheating will be referred to the Academic Disciplinary Committee and may result in automatic failure of the course.

Grading Scale: A: 93-100, A-: 90-93, B+: 87-90, B: 83-87, B-: 80-83, C+: 77-80, C: 73-77, C-: 70-73, D: 60-70, F < 60.

Grades will be based on pre-labs, quizzes, short lab worksheets and full lab reports:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Pre-labs</td>
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<tr>
<td>Quizzes</td>
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<td>Short lab worksheets</td>
<td>25%</td>
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<td>Long Lab reports</td>
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<tr>
<td>Final Exam</td>
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100%

You will be given: one drop grade for pre-labs, one drop grade for quizzes, and one drop grade for a “short” lab worksheets (i.e., the lowest grade from all pre-labs will be dropped before averaging the pre-labs, etc.). **No drop grades are allowed for Full lab reports.**

**Lab attendance:** Attendance is mandatory. You must attend the section for which you registered unless given permission by the Lab Physicist or Instructor of Record. For each time that you do not attend your lab session, you will receive a grade of zero for that lab’s Pre-lab, Quiz, and the corresponding lab report.

Absences may be excused for legitimate, well-documented reasons; if excused, the missed lab will be rescheduled, as described below.

**Anticipated excused absences** (e.g., university-sponsored athletic requirement or academic conference): Contact your TA or the Lab Physicist no later than one week before the lab you are scheduled to miss. They will schedule you for a makeup lab later in the semester when necessary.

**Unanticipated excused absences** (e.g., contagious/severe illness or family funeral): Contact your TA as soon as possible. If possible, they will schedule you later in the week; if not possible, then the makeup time will be either be near midterms or the last week of classes.

**Lab Webpage:** The lab webpage can be found at the following URL below. This website contains the pre-labs, experiment procedures, lab schedules and other lab items. We are in the process of changing the lab website, but you can get all the information on Blackboard - > Content Folder.

https://relativity.phy.olemiss.edu/~thomas/weblab/222titlepage.html