

Professor: Wilfred Hok Kong LEE, Ph.D. (substitutue)

Office: 343A

Classroom: 341

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Contact Info:

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Phone: ext. 5533

Office Hours:

Mon 11:45-1:30

Tue 1:15-2:00

Wed 11:45-1:30

Thu 1:15-2:00

Misc Info:

To Be Announced

Textbooks:

Optional: *University Physics with Modern Physics with MasteringPhysics™*, (13th edition) by Young and Freedman

Course Homepage:

The main course website will be <http://www2.swccd.edu/~hlee>, where you will find the syllabus lab manuals and schedule.

Your grades will be posted on the *Blackboard Online* site. Go to the Southwestern College homepage at <http://www.swccd.edu>, click on "Online Class Login" under "E-Tools" on the right hand side.

Other Useful sites:

<http://www2.swccd.edu/~hlee> (My SWC page)

<http://phet.colorado.edu/new/simulations/> (Physics Education Technology)

Corequisite: Phys 270

Course Description:

1 Units. Laboratory course to accompany Phys 270.

Course Objectives:

To prepare you to become an astronomer, chemist, computer scientist, engineer or geologist and to get you one step closer to your degree. Passing this class indicates the ability to understand and apply the concepts in this course to various physics problems. Your performance will be measured based on the conceptual understanding as well as the ability to use mathematics to state and solve problems.

The lab will roughly follow the lectures. *Print out the lab manual at least one day before the experiment and read it before coming to the class.* A lab report is required every one to two weeks.

Student Learning Outcomes:

Students will effectively communicate their ideas with the others by suggesting, assessing, and contrasting different approaches to the experiments.

Students will be able to analyze data collected in experiments to investigate and draw possible contrasts with the predictions from the laws of physics.

Attendance and tardiness:

During the add period of the term, you will be dropped from the class for never attending a class, unless you have been granted an excused absence.

After the add period of the term, you will be dropped if the hours of unexcused absences exceed three hours, or if your total hours of absence for any reason exceed six hours.

Class starts exactly on the clock. Arriving 10 minutes late in class or leaving 10 minutes before the end of the class is regarded as an instance of tardiness. Ten points will be deducted from the homework for each instance of tardiness. Two instances of tardiness are equivalent to one absence. However, I reserve the right to drop a student after the third excessive tardiness as outlined in the Catalog.

It is the student's responsibility to drop the course. Any student who stops attending class but does not officially withdraw from the course will receive a failing grade.

Grading:

Your final course letter grade will be based on your overall score. Individual letter grades will not be formally assigned to exams. Letter grade will be determined approximately as follows:

100 – 85%	A
84 – 75%	B
74 – 60%	C
59 – 50%	D
49 – 0%	F

Note that the above scale is only an approximation and may be revised near the end of the semester.

Evaluation:

The overall grade will be determined by your performance in the lab reports and the final. They carry different weight in computing your overall grade, as summarized below:

Lab Report	80%
Final Exam	20%

Classroom disruptions:

Switch off all cell phones and pagers. Interruptions from these sources are regarded as disruptive behaviors.

Disability Support Services (DSS):

Students with disabilities who may need academic accommodations should discuss options with their professors during the first two weeks of class. An alternate form of this syllabus and other class handouts is available upon request. You are also referred to the DSS center on campus (Student Services Center, Bldg. 1400, Room S108).

Policy on Collaboration:

It is encouraged that you work in groups on homework, however, the solution that you submit for grading must be written *independently*. If any parts of your solutions are found to be an exact copy of another student, both homework will be given zero point.

Academic Integrity and Cheating:

Plagiarism and cheating constitute violations of academic honesty. Disregard for written or verbal instructions on course work may, at the discretion of the professor, represent cheating. In particular, allowing another student to copy your homework, quizzes or exams also constitutes cheating. All violations and suspected violations will result in action taken against the parties involved after due process, and will be documented in writing with the Dean of Student Activities and the Dean of Mathematics, Science and Engineering. Sanctions may include no-credit on the assignment in question, course failure, or formal charges of student misconduct. Formal charges can result in academic probation, suspension, or expulsion.

Academic Success Center Referral:

To further your success, reinforce concepts, and achieve the stated learning objectives for this course, I refer you to the Academic Success Center learning assistance services. Upon request for tutorial services, you will be automatically enrolled in NC 3: Supervised Tutoring, a free noncredit course that does not appear on your transcripts.

Services are located in the ASC (420), the Writing Center (420D), the Reading Center (420), Math Center (426), the Library/LRC Interdisciplinary Tutoring Lab, MESA, specialized on-campus School tutoring labs, the Higher Education Center, and the San Ysidro Education Center. Online learning materials and Online Writing Lab (OWL) are available at www.swccd.edu/~asc.

Disclaimer:

The content of this syllabus or course outline may change during the semester. It is your responsibility to keep track of the changes.

Lab Report:

Your report must include the following sections:

Name and date: Always include your name and the date you carry out the experiment (not the date you write or hand in the lab report). When working in groups, include the names of the members in your group.

Title: Include the title of the lab, your name, and the date the lab was carried out. You do not have to use the title suggested by the lab manual if you can think of a more descriptive title.

Purpose: A description of what the lab is about in your own words. Do not copy and paste please.

Procedure: This section should describe how the experiment was performed. How did you measure each parameter? How was your data obtained? Was the data obtained from observation? From a photograph? Was the number provided by the professor? You do not have to go into details describing the apparatus or instrumentation but you should provide details as to what instrument produced which parameter. In some labs involving computers, the lab manuals may consist of steps on how to set up the computers. In this case, you do not have to repeat and write what buttons you have pushed to set up the computer. Instead your procedure should focus on the physical aspects, such as what quantities you are measuring. For instance, if the button "C" on the computer is used to measure current, instead of writing "push button [C]", you should say what the button is for, and write "the computer was set up to measure current".

Data: This section must contain all the data you obtained in this experiment. You can present it in a table format. You can use the tables provided in your handout. Always include units and use scientific notation when convenient. Keep an eye on your significant figures.

Equations and Mathematical calculations: This section should contain the equations and calculations you used to analyze your results. Please be clear and organized and show your work. *I don't want to see just the final answer. I want the steps you took to arrive to the answer.* In some experiments, there may be several trials of repeated measurements. In this case, the calculations for each trial are almost exactly the same, so there is no need to write the calculations for every trial. Instead you only need to do a sample calculation for one of the trials. You should indicate which trial you are calculating in your report, seeing that the calculations of one trial is correct, I will trust that you know how to do the rest.

Sources of Error: All experiments have some sources of error, in other words, no matter how carefully one designs an experiment there will always be a percentage difference with theoretical predictions. You should list and explain every single source of error carefully. Be sure to list as many sources of error as you can think of, not just the major source. In particular, "carelessness" or "mistakes in calculations" are not acceptable sources of experimental error. Do not write things like "there may be something wrong with the equipment" without addressing what specifically may be the source of error.

Conclusion: Provide a summary of the experiment. This is the section that will most seriously affect your grade. The conclusion must be related to the purpose of the lab. Be thoughtful and make careful analysis, and be as quantitative as possible. For example, when you compare your measured value with an accepted value, state explicitly the percentage error by writing something like “the measured value is within 4.7% of the accepted value”. When you are testing a particular law, you should write something like “Newton’s Second Law is verified to within 3%”. Statements such as “the measured value is pretty close to the accepted value”, or “Newton’s Second Law is correct” are too vague and will not suffice as a conclusion.

Other things that make boost your grade:

Diagrams: Include a diagram whenever possible, for example when explaining the setup of the experiment.

Graphs: Graphs are often instrumental in the analysis of the experimental results. Learning how to make a good graph will be useful.