



PHY 127 Fundamental of Physics II Laboratory

Summer 2024

Course Credits: 4

Contact Hours: 56 hours

Instructor: TBA

Email: TBA

COURSE OBJECTIVES

This course goes increasingly profound in physics by introducing more concepts and launching various experiments, including electricity, circuits, magnetism, optics, and modern physics about Relativity and quantum physics. It offers bountiful experiments and gets a close look at those physical phenomena. Students can apply their knowledge in the process of experiments and gain a comprehensive and systematic understanding of the rationale behind those physical phenomena.

Upon completion of this course, students will be able to:

1. Have a deeper understanding of basic concepts in physics.
2. Improve proficiency in designing, implementing experiments, and collecting data.
3. Apply all their previous knowledge in the whole process of experiments.
4. Analyze collected data and conclude with related observations.
5. Develop the capacity to write experiment reports effectively and clearly in finding details.

PREREQUISITES

PHY 126 Fundamental of Physics I Laboratory

GRADING

Grades will be determined by accumulating points, with 100 points being the maximum, as follows:



ITEM	POINTS
10 Labs	50 Points
4 Lab Reports	20 Points
Midterm	15 Points
Final Exam	15 Points
Total	100 Points

Late submissions will be graded at the end of the course. Grades will be assigned according to the following rule:

$$A \geq 90 > B \geq 80 > C \geq 70 > D \geq 60 > F.$$

We reserve the right to make adjustments to the overall grading policy.

COURSE MATERIALS

Required Texts:

Raymond Serway, Chris Vuille, *College Physics*, 11th Edition, Cengage Learning, 2017.

Recommended (Optional) Texts or Other Materials:

None

COURSE TOPICS

MODULE	TASKS
Module 1	Topics: Topic 1: Electric Forces and Electric Fields, Electric Flux, Gauss' s Law Topic 2: Lab 1- Electric Forces and Fields Mapping Topic 3: Electrical Energy and Capacitance Topic 4: Lab 2- Electric Potential mapping Assessments: Lab Report 1
Module 2	Topics: Topic 5: Current and Resistance, Direct-Current Circuits Topic 6: Lab 3- DC Circuit Topic 7: Magnetism, Magnetic Fields, Magnetic Force, Ampere' s Law Topic 8: Lab 4- Magnetic Force on a Current-Carrying Wire Assessments: Lab Report 2



Module 3	Topics: Topic 9: Induced Voltages and Inductance including Faraday’ s Law , Lenz’ s Law, and RL Circuits Topic 10: Lab 5- RL Circuits Topic 11: Alternating-Current Circuits and Electromagnetic Waves Topic 12: Lab 6- AC Circuit Assessments: Midterm
Module 4	Topics: Topic 13: Reflection and Refraction of Light Topic 14: Lab 7- Reflection and Refraction Topic 15: Mirrors and Lenses Topic 16: Lab 8- Spherical Mirrors Reflection Assessments: Lab Report 3
Module 5	Topics: Topic 17: Relativity Topic 18: Lab 9- The Speed of Light Topic 19: Quantum Physics Topic 20: Lab 10- The Photoelectric Effect Assessments: Lab Report 4 Final Exam

ATTENDANCE

1) Class attendance is required. Missing classes without permission will lead to decrease in overall grade.

Missing less than two classes: no penalty.

Missing more than two classes: 7% will be taken off from the overall grade.

If the instructor reports a student’s frequent missing of class to the Soochow University Academic Administration Office, the student might get a written warning and might be prohibited from attending final exam.

2) Participants in this course are expected to arrive in class promptly and adequately prepared. The primary objective of this course is to critically engage with the readings and the subject matter. Therefore, course participants are expected to have completed the reading prior to class and prepare thoughtful reflections/commentaries to share with fellow colleagues.



LEARNING REQUIREMENTS

- 1) Late assignments are not acceptable and are subjected to grade deductions.
- 2) Assignments submitted in the wrong format will be counted as not submitted.
- 3) Failure to submit or fulfill any required course component results in failure of the class.
- 4) Make-up for midterm and final exams only with valid excuses, as defined by the University.
- 5) In order to earn a Certificate of Completion, participants must thoughtfully complete all assignments by stated deadlines and earn an average quiz score of 50% or greater.

TECHNOLOGY POLICY

The use of electronic devices in class is distracting, both for the user and for the rest of the class. Only non-programmable calculators can be used in the tests and exam. Any attempts to use cell phones and other electronic communication devices will be seemed as cheating. Laptops are discouraged, unless you use them for activities DIRECTLY related to the course (eg., note taking, reading course documents).

ACADEMIC INTEGRITY POLICY

Soochow University highly values the academic integrity and aims to promote the academic fairness, honesty and responsibility. Any academic dishonesty behaviors and any attempts to cheats and plagiarism will be reported to the university administration office. A written warning and the relevant penalties will be imposed. The record might be shown on the official university transcript.

DISABILITY ACCOMMODATION

Soochow University is committed to maintaining a barrier-free environment so that students with disabilities can fully access programs, courses, services, and activities at Soochow University. Students with disabilities who require accommodations for access to and/or participation in this course are welcome.

Note:



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Please contact the University Administrative Office immediately if you have a learning disability, a medical issue, or any other type of problem that prevents professors from seeing you have learned the course material.