PHY 126 Fundamental of Physics I Laboratory

Summer 2024

Course Credits: 4
Contact Hours: 56 hours
Instructor: TBA
Email:TBA

COURSE OBJECTIVES

PHY 126 is the first laboratory course in basic physics that covers the following main topics: motion, forces, conservation of energy, momentum, fluids, gravitation, heat and circular. Experiments will explore aspects of mechanics, mechanical waves, and thermodynamics. Students will develop skills to set up and perform experiments, collect data, and formulate conclusions from an experiment.

Upon Completion of this Course, students will be able to:

1. Gain a better understanding of the basic concepts and laws in physics.
2. Demonstrate proficiency in laboratory techniques, experimental design, data collection, and analysis.
3. Develop critical thinking skills through analysis of physical phenomena and experimental data.
4. Record experimental work completely in laboratory notebooks and communicate experimental results clearly in written reports.

PREREQUISITES

PHY 116 Fundamental of Physics I

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 ≥ 90 > B ≥ 80 > C ≥ 70 > D ≥ 60 > F.

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

COURSE MATERIALS

Required Texts:

Knight, Jones, and Field, ***College physics : a strategic approach,*** 2019.

Recommended (Optional) Texts or Other Materials:

None

COURSE TOPICS

MODULE	TASKS
Module 1	**Topics:** Topic 1: Force and Motion Topic 2: Lab 1 - One Dimensional Motion Topic 3: Forces and Newton's Laws of Motion Topic 4: Lab 2 - Projectile Motion **Assessments:** Lab Report 1
Module 2	**Topics:** Topic 5: Conservation Laws Topic 6: Lab 3 - Newton's Laws Topic 7: Energy and Work Topic 8: Lab 4 - Conservation of Energy **Assessments:** Lab Report 2

Module 3	**Topics:** Topic 9: Thermal Properties of Matter Topic 10: Lab 5 - Vectors Topic 11: Fluids Topic 12: Lab 6 - Friction **Assessments:** Midterm
Module 4	**Topics:** Topic 13: Oscillations and Waves Topic 14: Lab 7 - Uniform Circular Motion Topic 15: Optics Topic 16: Lab 8 - Wave and Ray Optics **Assessments:** Lab Report 3
Module 5	**Topics:** Topic 17: Electricity and Magnetism Topic 18: Lab 9 - Circuits Topic 19: Modern Physics Topic 20: Lab 10 - Rotational Equilibrium **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).

ACEDEMIC 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:

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.