PHY 111 Introduction to Physics

Summer 2023

Course Credits: 4
Contact Hours: 55 hours
Instructor: TBA
Email: TBA

COURSE OBJECTIVES

The course introduces some basic concepts, principles and history of physics. Moreover, the course also illustrates the classical mechanics in physics by exploring some basic physical laboratory. Topics included in this course are mechanics, thermodynamics, vibration and waves, electromagnetism, light and electricity, and modern physics.

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

1. Explain the basic concepts and laws in physics
2. Recognize whether or not the result of a calculation makes physical sense
3. Apply physical knowledge to other disciplines, including our everyday lives
4. Illustrate the effects of scientific knowledge and progress on societal issues
5. Develop scientific techniques and skills by conducting labs

PREREQUISITES

MAT 110 Calculus I

GRADING

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

ITEM	POINTS
2 Quizzes	20 Points
2 Labs	20 Points

Midterm Test	25 Points
Final Exam	35 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:

Sheldon Ross, ***A First Course in Probability***, 9th Edition, Pearson Education, 2014.

Recommended (Optional) Texts or Other Materials:

None

COURSE TOPICS

MODULE	TASKS
Module 1	**Topics:** Topic 1: Course Introduction Topic 2: Motion in One Dimension Topic 3: Vectors and Two-Dimensional Motion Topic 4: The Laws of Motion Topic 5: Momentum and Collisions **Assessments:** Quiz#1
Module 2	**Topics:** Topic 6: Rotational Motion and the Law of Gravity Topic 7: Rotational Equilibrium and Rotational Dynamics Topic 8: Solids and Fluids, Thermal Physics Topic 9: Energy in Thermal Processes Topic 10: The Laws of Thermodynamics **Assessments:** Lab #1

Module 3	**Topics:** Topic 11: Electric Forces and Electric Fields Topic 12: Electrical Energy and Capacitance Topic 13: Current and Resistance (Cont.) Topic 14: Current and Resistance Topic 15: Direct-Current Circuits **Assessments:** Midterm Test
Module 4	**Topics:** Topic 16: Magnetism Topic 17: Induced Voltages and Introduction Topic 18: Alternating-Current Circuits and Electromagnetic Waves Topic 19: Reflection and Refraction of Light Topic 20: Wave Optics **Assessments:** Quiz#2 Lab#2
Module 5	**Topics:** Topic 21: Relativity Topic 22: Quantum Physics Topic 23: Atomic Physics; Nuclear Physics Topic 24: Atomic Physics; Nuclear Physics (Cont.) Topic 25: Final Exam Review **Assessments:** 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.