

PHY1203: GENERAL PHYSICS III

Effective Term

Semester B 2023/24

Part I Course Overview

Course Title

General Physics III

Subject Code

PHY - Physics

Course Number

1203

Academic Unit

Physics (PHY)

College/School

College of Science (SI)

Course Duration

One Semester

Credit Units

3

Level

B1, B2, B3, B4 - Bachelor's Degree

Medium of Instruction

English

Medium of Assessment

English

Prerequisites

HKDSE Mathematics Compulsory Part or equivalent

Precursors

HKDSE Physics or Combined Science (Physics, Chemistry) or Combined Science (Biology, Physics) or AP1200/PHY1200 Foundation Physics or equivalent

Equivalent Courses

AP1203 General Physics III

Exclusive Courses

Nil

Part II Course Details

Abstract

This course covers the some basic concepts and applications of the following topics in physics: applied mechanics, physics of fluid, modern physics. Students will learn the fundamentals of these topics and become able to apply them to solve real problems in science and engineering. This course equips students with knowledge of several important topics in Physics for the curriculum of a number of science and engineering majors.

Course Intended Learning Outcomes (CILOs)

CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Recognize and use appropriately important technical terms and definitions relevant to the major topics in the course.	x		
2	Use appropriate mathematical notation and formulation to formulate and apply the physical laws covered in the course in concise form.		x	x
3	Apply physics laws of mechanics, fluid and modern physics in familiar situations.			x
4	Solve real and hypothetical problems by identifying the underlying physics and analyzing the problem.		x	x

A1: Attitude

Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability

Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to real-life problems.

A3: Accomplishments

Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

Teaching and Learning Activities (TLAs)

TLAs	Brief Description	CILO No.	Hours/week (if applicable)	
1	Lecture	Explain key concepts of modern physics such as laws of mechanics	1, 2, 3, 4	1.5hrs/wk
2	Discussions/Quizzes	In-class discussions and/or quizzes helping students develop critical thinking skills	1, 2, 3, 4	0.5hrs/wk
3	Tutorials	Demonstrate how to use mathematical notation and formulation to solve problems	2, 4	1hr/wk
4	Assignments	Require students to solve real and hypothetical problems	1, 2, 3, 4	2hrs/wk

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	Homework Assignments	1, 2, 3, 4	30	

Continuous Assessment (%)

30

Examination (%)

70

Examination Duration (Hours)

2

Additional Information for ATs

For a student to pass the course, at least 30% of the maximum mark for the examination must be obtained

Assessment Rubrics (AR)**Assessment Task**

1. Homework Assignments

Criterion

1.1 CAPACITY of understanding key modern physics concepts

1.2 Ability to formulate modern physics questions

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Assessment Task

2. Examination

Criterion

2.1 Ability to analyse, formulate and solve physics questions independently

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Part III Other Information

Keyword Syllabus

Fluid mechanics; gravitation; periodic motion; mechanical wave; photons; matter wave; introductory quantum mechanics; atomic structure.

Reading List

Compulsory Readings

Title	
1	Hugh D. Young and Roger A. Freedman, University Physics with Modern Physics (15th Edition), Pearson, 2019.

Additional Readings

Title	
1	David Halliday, Principles of Physics (10th Edition), Wiley, 2015.