

PHY4273: SPECIAL TOPICS IN PHYSICS

Effective Term

Semester A 2022/23

Part I Course Overview

Course Title

Special Topics in Physics

Subject Code

PHY - Physics

Course Number

4273

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

Nil

Precursors

Nil

Equivalent Courses

AP4273 Special Topics in Physics

Exclusive Courses

Nil

Part II Course Details

Abstract

This is an advanced course on a contemporary topic in Pure and/or Applied Physics. The topic will be announced in advance when this course is offered. It will provide a useful supplement to the advanced courses already specified in the programme.

Course Intended Learning Outcomes (CILOs)

CILOs		Weighting (if DEC-A1 DEC-A2 DEC-A3 app.)			
1	Be aware of the current development in selected areas in Physics.		x		
2	Relate the covered progress to fundamental principles in Physics.		x	x	x
3	Apply some of the current development in new and useful applications.		x	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	Lectures	Explanation of fundamental principles and problem solving techniques	1, 2, 3	2 hours/week (wk: 1-7)
2	Tutorials	Discuss the solution of problems and issues in the understanding of fundamental concepts and principles	1, 2, 3	1 hour/ week (wk: 2-7)
3	Projects	A discovery oriented multidisciplinary project using the methodologies introduced in this course	3	21 hour/6week (last 6 wks)

Assessment Tasks / Activities (ATs)

ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)	
1	Assignments	1, 2, 3	20	performance assessment purpose

2	Projects	1, 2, 3	30	Inc. project report and presentation
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Continuous Assessment (%)

50

Examination (%)

50

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. Assignments

Criterion

The student completes all assessment tasks/activities and the work demonstrates excellent understanding of the scientific principles and the working mechanisms

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not reaching marginal level

Assessment Task

2. Project

Criterion

The student's work shows strong evidence of original thinking, supported by a variety of properly documented information sources other than taught materials. He/she is able to communicate ideas effectively and persuasively via written texts and/or oral presentation.

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not reaching marginal level

Assessment Task

3. Examination

Criterion

He/she can thoroughly identify and explain how the principles are applied to science and technology for solving multidisciplinary sciences problems.

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not reaching marginal level

Part III Other Information

Keyword Syllabus

To be specified once the topic is fixed

Reading List

Compulsory Readings

Title	
1	Nil

Additional Readings

Title	
1	Nil