PHY8003: DIRECTED ADVANCED STUDIES FOR POSTGRADUATE STUDENTS

Effective Term
Semester A 2025/26

Part I Course Overview

Course Title
Directed Advanced Studies for Postgraduate Students

Subject Code
PHY - Physics
Course Number
8003

Academic Unit
Physics (PHY)

College/School
College of Science (SI)

Course Duration
One Semester

Credit Units
3

Level
R8 - Research Degree

Medium of Instruction
English

Medium of Assessment
English

Prerequisites
Nil

Precursors
Nil

Equivalent Courses
Nil

Exclusive Courses
Nil

Part II Course Details

Abstract

The course is designed for the students enrolled in the research degree programmes to participate in collaborative projects directed by academic staff members in PHY in relevant areas recommended by the department. The course will on one hand encourage the students to broaden their vision in scientific researches via discovery-based learning and research, and on the other hand will give them solid experience in the specific areas which can help them pursue related careers after their PhD graduation.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Broaden the knowledge and vision in a specific area by conducting collaborative research.			x	x
2	Deepen the understanding of the research background by participating in collaborative research.			x	
3	Identify the key issues for further developments and discoveries in the subject area.		x	x	
4	Apply the achieved knowledge to formulate the research methodology for a research topic.			x	
5	Participate in research group presentations and discussions.			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.

Learning and Teaching Activities (LTAs)

	LTAs	Brief Description	CILO No.	Hours/week (if applicable)
1		Lectures	1, 2, 3, 4	2
2		Independent Studies	1, 2, 3, 4	32
3		Presentations and Group Discussions	5	5

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks ("-" for nil entry)	Allow Use of GenAI?
1	Written reports	1, 2, 3, 4	80	-	No
2	Presentation	5	20	-	No

Continuous Assessment (%)

100

Examination (%)

0

Minimum Continuous Assessment Passing Requirement (%)

30

Minimum Examination Passing Requirement (%)

0

Additional Information for ATs

The student will be required to submit a written report half-way through and at the end of the semester on the above listed activates. The student will also give an oral presentation at the end of the semester, and at least one presentation no later than half-way through the semester. The supervisor or the collaborator will be requested to confirm the presentations and discussions of the student in his/her group meeting by signing on a prepared Form sheet. The student will be required to submit his/her presentation file each time to the course leader for assessment.

Assessment Rubrics (AR)

Assessment Task

Written reports (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion

Understand and explain the scientific principles and the working mechanisms behind the project. Envision and explain how the project advances science and technology. Demonstrate the novelty, significance, and scientific rigor of the project.

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

Presentation (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion

Understand and explain the scientific principles and the working mechanisms behind the project. Envision and explain how the project advances science and technology. Demonstrate the novelty, significance, and scientific rigor of the project.

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
Written reports (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion
Understand and explain the scientific principles and the working mechanisms behind the project. Envision and explain how the project advances science and technology. Demonstrate the novelty, significance, and scientific rigor of the project.

Excellent
(A+, A, A-) High

Good
(B+, B) Moderate

Marginal
(B-, C+, C) Basic

Failure
(F) Not reaching marginal level

Assessment Task
Presentation (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion
Understand and explain the scientific principles and the working mechanisms behind the project. Envision and explain how the project advances science and technology. Demonstrate the novelty, significance, and scientific rigor of the project.

Excellent
(A+, A, A-) High

Good
(B+, B) Moderate

Marginal
(B-, C+, C) Basic

Failure
(F) Not reaching marginal level

Part III Other Information

Keyword Syllabus
- Participating in collaborative research

- Forming ideas for discovery-based research
- Formulating research methodology
- Participating in research group presentations and discussions

Reading List

Compulsory Readings

	Title
1	Nil

Additional Readings

	Title
1	Nil