

# PHY8002: DIRECTED STUDY IN ADVANCED RESEARCH FIELDS

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## Effective Term

Semester A 2025/26

## Part I Course Overview

### Course Title

Directed Study in Advanced Research Fields

### Subject Code

PHY - Physics

### Course Number

8002

### Academic Unit

Physics (PHY)

### College/School

College of Science (SI)

### Course Duration

One Semester

### Credit Units

1

### Level

R8 - Research Degree

### Medium of Instruction

English

### Medium of Assessment

English

### Prerequisites

Nil

### Precursors

Nil

### Equivalent Courses

AP8002 Directed Study in Advanced Research Fields

### Exclusive Courses

Nil

## Part II Course Details

### Abstract

The course is designed for the students enrolled in the research degree programmes to broaden their knowledge in areas related to their research fields.

### Course Intended Learning Outcomes (CILOs)

CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Master the research activities in a specific area by conducting literature search		x	
2	Deepen the understanding of the research background by critically reading selected literature		x	
3	Identify the key issues for further developments in the subject area		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	

#### 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	2hrs/semester
2	Independent Studies	1, 2, 3, 4	13hrs/semester
3	Presentations and Group Discussions	5	11hrs/semester

### Assessment Tasks / Activities (ATs)

ATs	CILO No.	Weighting (%)	Remarks ("-" for nil entry)	Allow Use of GenAI?	
1	Written reports	1, 2, 3, 4	60	-	Yes
2	Presentation	5	40	-	No

#### Continuous Assessment (%)

100

#### Examination (%)

0

**Minimum Continuous Assessment Passing Requirement (%)**

0

**Minimum Examination Passing Requirement (%)**

0

**Additional Information for ATs**

After the lecture conducted in Week 1, the students will be required to submit written report once per week on the above listed activities. The supervisors 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**

ABILITY to REVIEW research literature

**Excellent**

(A+, A, A-) High

**Good**

(B+, B, B-) Significant

**Fair**

(C+, C, C-) Moderate

**Marginal**

(D) Basic

**Failure**

(F) Not even reaching marginal levels

**Assessment Task**

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

**Criterion**

ABILITY to PRESENT research literature

**Excellent**

(A+, A, A-) High

**Good**

(B+, B, B-) Significant

**Fair**

(C+, C, C-) Moderate

**Marginal**

(D) Basic

**Failure**

(F) Not even reaching marginal levels

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### **Assessment Task**

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

### **Criterion**

ABILITY to REVIEW research literature

### **Excellent**

(A+, A, A-) High

### **Good**

(B+, B) Significant

### **Marginal**

(B-, C+, C) Basic

### **Failure**

(F) Not reaching marginal level

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### **Assessment Task**

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

### **Criterion**

ABILITY to PRESENT research literature

### **Excellent**

(A+, A, A-) High

### **Good**

(B+, B) Significant

### **Marginal**

(B-, C+, C) Basic

### **Failure**

(F) Not reaching marginal level

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## **Part III Other Information**

### **Keyword Syllabus**

- Literature search and critical reading
- Forming idea for discovery-based research
- Formulating research methodology
- Participating in research group presentations and discussions

### **Reading List**

### **Compulsory Readings**

Title	
1	N.A.

**Additional Readings**

Title	
1	<a href="http://www.monash.edu.au/lis/online/writing/science/lit-review/index.xml">http://www.monash.edu.au/lis/online/writing/science/lit-review/index.xml</a>
2	<a href="http://open.lib.umn.edu/psychologyresearchmethods/chapter/2-3-reviewing-the-research-literature/">http://open.lib.umn.edu/psychologyresearchmethods/chapter/2-3-reviewing-the-research-literature/</a>
3	<a href="http://guides.lib.umich.edu/c.php?g=283300&amp;p=2915110">http://guides.lib.umich.edu/c.php?g=283300&amp;p=2915110</a>
4	<a href="http://writingcenter.unc.edu/tips-and-tools/literature-reviews/">http://writingcenter.unc.edu/tips-and-tools/literature-reviews/</a>
5	<a href="https://www.researchgate.net/topic/Literature-Review">https://www.researchgate.net/topic/Literature-Review</a>