هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

T-104
2022

Course Specification

Course Title:	**Graduation Project**
Course Code:	**491PHYS**
Program:	**Physics**
Department:	**Physics**
College:	**Science**
Institution:	**Jazan University**
Version:	2022
Last Revision Date:	**21 December 2022**

Table of Contents:

Content	Page
A. General Information about the course	
1. Teaching mode 2. Contact Hours	
B. Course Learning Outcomes, Teaching Strategies and Assessment Methods	
C. Course Content	
D. Student Assessment Activities	
E. Learning Resources and Facilities	
1. References and Learning Resources	
2. Required Facilities and Equipment	
F. Assessment of Course Quality	
G. Specification Approval Data	

A. General information about the course:

Course Identification	
1. Credit hours:	**2**
2. Course type	
a.	University ☐ College ☐ Department☒ Track☐ Others☐
b.	Required ☒ Elective☐
3. Level/year at which this course is offered: Level 11/Year4	
4. Course General Description Undergraduate research experience involves students in an original research project or a review of a previous research project. Using one or a variety of methods, students will collect original data and contribute to problem solving in the physics Sciences. As a first research experience, emphasis will be placed on the process of scientific research, including formulation of a research plan, data collection, assessment of data quality, and interpretation based on available data. Students are required to present their results to an audience inside the physics department.	
5. Pre-requirements for this course (if any): Department agreement	
6. Co- requirements for this course (if any): NIL	
7. Course Main Objective(s) **This course is designed to provide students with:** - The opportunity to perform a research project within the field of Physics under the supervision of a faculty member. - Experiences with identifying, accessing, evaluating, and interpreting information and data in support of research. - Collaborative project experiences involving either written or oral presentations.	

1. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1.	Traditional classroom		
2.	E-learning		
3.	Laboratory	20	**61 %**
4.	Blended	8	**24 %**
5.	Hybrid ● Traditional classroom ● E-learning		
6.	Distance learning	5	**15 %**

2. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	
2.	Laboratory/Studio	22
3.	Field	
4.	Tutorial	
5.	Others (specify) Research project	11
	Total	33

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
1.1	**Identify** and utilize relevant previous work that supports their research	**PLO1.1**	Group and interactive guided discussion, Interactive discussion Literatures collecting	**Direct** (formative and summative): Written report, Viva voce. **Indirect**: student survey, Presentation
1.2	**Discuss** prior knowledge and learning of concepts, theories and principles related to the project task.	**PLO1.2**	Diagram illustration, group discussion, Interactive illustrations- Student contribution	**Direct** (formative and summative): Written report, Viva voce. **Indirect:** student survey, Presentation
…				
2.0	Skills			
2.1	**Apply** fundamental concepts and problem solving skills to constructively address research setbacks.	**PLO2.1**	Diagram illustration, group discussion, Interactive illustrations- Student contribution	**Direct** (formative and summative): Written report, Viva voce. **Indirect**: student survey, Presentation
2.2	**Demonstrate** analytical skills and competencies to formulate, drive and analyze physics concepts related to the area of research	**PLO2.2**	Diagram illustration, group discussion, Interactive illustrations.	**Direct** (formative and summative): Written report, Viva voce. **Indirect**: student survey, Presentation
2.3	**Apply** experimental, Theoretical calculation or numerical simulation methods to solve a given scientific task.	**PLO2.3**	Individual and group Hands on experiment, numerical simulation, theoretical Calculation, Data analysis, Results Discussion.	**Direct** (formative and summative): Written report, Viva voce. **Indirect:** student survey, Presentation
2.4	**Analyze** data and synthesize research findings creatively through sustained critical investigation.	**PLO2.4**	Individual and group data analysis, Results Discussion.	**Direct** Written report, Viva voce. **Indirect:** student survey, Presentation

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
2.5	**Report** research findings in both written and verbal forms.	**PLO2.4**	Individual and group discussion, report writing and presentation	**Direct** Written report, Viva voce. **Indirect:** student survey, Presentation
3.0	Values, autonomy, and responsibility			
3.1	**Demonstrate** capacity to work both independently and in collaboration with others to lead and manage the research work.	**PLO3.1**	Group discussion, group lab work	**Direct** (formative and summative): In lab interactive questioning, write-ups, weekly journal entries, content quizzes, individual assignments **Indirect**: student survey, students to evaluation of their group's dynamics and their contributions in the project work.
3.2	**Practice** the skills, diligence, and commitment to excellence needed to engage in lifelong learning.	**PLO3.2**	Interactive discussion- Case study, group assignment, open discussion - reviews	**Direct** (formative and summative): follow up of students Curiosity, resilience, reflection, and initiative. **Indirect**: student survey
3.3	**Demonstrate** an awareness and application of appropriate personal, societal, and professional ethical standards.	**PLO3.3**	Interactive discussion- Case study, group assignment, open discussion - reviews	**Direct** (formative and summative): follow up of the student' professional and ethical standards. **Indirect**: student survey

C. Course Content

No	List of Topics	Contact Hours
1.	Literature review	**2**
2.	Analysis and discussion of the problem	**3**
3.	Application of the approaches	**3**
4.	Practical research and/or Numerical simulation and/or theoretical calculations in the chosen topic	**10**
5.	Results analysis and discussion	**6**
6.	Writing a research report	**6**
7.	Presenting and discussing the research project	**3**
Total		33

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	**Supervisor:**		
2.	**End-of-Project Evaluation**	**11**	**50 (50%)**
3.	**Referee**		
4.	**Report Evaluation**	**11**	**25(25%)**
5.	**Presentation**	**11**	**25 (25%)**
6.	**Total marks**		**100 (100%)**

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.)

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	References and resources on undergraduate research, both general and specific discipline.
Supportive References	References and resources on undergraduate research, both general and specific discipline.
Electronic Materials	Depends on the research topics
Other Learning Materials	Depends on the research topics

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Room for interactive discussion (round table), Laboratories
Technology equipment (Projector, smart board, software)	Software, Data show, smart board, printer
Other equipment (Depending on the nature of the specialty)	Specific laboratory equipment if required by the supervisor. SDL.

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students, Peer, and program leader	Indirect (CES)- Indirect peer evaluation
Effectiveness of students assessment	Students, Program assessment committee.	Direct/ Indirect
Quality of learning resources	Students, Faculty members	Indirect
The extent to which CLOs have been achieved	URP coordinator	Direct/ Indirect
Other		

Assessor (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)

Assessment Methods (Direct, Indirect)

G. Specification Approval Data

COUNCIL /COMMITTEE	DEPARTMENT BOARD
REFERENCE NO.	PHYS2304
DATE	28/2/2023