هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

اعتماد NCAAA T4 2020

Course Specifications

Course Title:	**Graduation Project**
Course Code:	**491PHYS**
Program:	**Physics**
Department:	**Physics**
College:	**Science**
Institution:	**Jazan University**

Table of Contents

A. Course Identification

1. Credit hours: 2
2. Course type **a.** University ☐ College ☐ Department ☑ Others ☐ **b.** Required ☑ Elective ☐
3. Level/year at which this course is offered: Level7/Year4
4. Pre-requisites for this course (if any)**: Department agreement**
5. Co-requisites for this course (if any)**:NIL**

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**		
2	**Blended**	**20**	**55.55%**
3	**E-learning**		
4	**Distance learning**	**5**	
5	**Other (lab)**	**20**	**44.45%**

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	**--**
2	**Laboratory/Studio**	**30**
3	**Tutorial**	**--**
4	**Others** (specify) (specify)- Research project	**15**
	Total	**45**

B. Course Objectives and Learning Outcomes

1. Course Description

Graduation project leading to BSc may take a number of different forms. It might involve carrying out a small experimental investigation, involving the use of laboratory facilities and underpinned by a review of previous works in the same theme. The project could be a computational programming work, consisting of a small numerical simulation of special physics phenomena. In this case the attention should focus on the computational technique and its effectiveness of describing the phenomena. The project could even consist on a detailed literature review in a particular subject, but it would need to be critical and theoretical in its approach and involve much more research than a long essay.

2. Course Main Objective

This course is designed to provide students with:

- Develop the students' research work experience supervised by a faculty member
- Provide the possibility to expand students' knowledge in a specific area
- Develop or implement experimental, computational or theoretical work to enhance student's scientific abilities.
- Prepare students for effective writing and presentation skills.
- Train the students with opportunities of self-confidence effectively communicate the results to an audience.

3. Course Learning Outcomes

	CLOs	Aligned PLOs
1	**Knowledge and Understanding**	
1.1	**Identify** and utilize relevant previous work that supports their research	**PLO1.1**
1.2	**Discuss** prior knowledge and learning of concepts, theories and principles related to the project task.	**PLO1.2**
2	**Skills :**	
2.1	**Apply** fundamental concepts and problem solving skills to constructively address research setbacks.	**PLO2.1**
2.2	**Demonstrate** analytical skills and competencies to formulate, drive and analyze physics concepts related to the area of research	**PLO2.2**
2.3	**Apply** experimental, Theoretical calculation or numerical simulation methods to solve a given scientific task.	**PLO2.3**
2.4	**Analyze** data and synthesize research findings creatively through sustained critical investigation.	**PLO2.4**
2.5	**Report** research findings in both written and verbal forms.	**PLO2.4**
3	**Values:**	
3.1	**Demonstrate** capacity to work both independently and in collaboration with others to lead and manage the research work.	**PLO3.1**
3.2	**Practice** the skills, diligence, and commitment to excellence needed to engage in lifelong learning.	**PLO3.2**
3.3	**Demonstrate** an awareness and application of appropriate personal, societal, and professional ethical standards.	**PLO3.3**
3.4		
3.5		

C. Course Content

No	List of Topics	Contact Hours
1	Literature review	**4**
2	Analysis and discussion of the problem	**2**
3	Application of the approaches	**4**
4	Practical research and/or Numerical simulation and/or theoretical calculations in the chosen topic	**15**
5	Results analysis and discussion	**10**
6	Writing a research report	**6**
7	Presenting and discussing the research project	**4**
Total		**45**

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	**Knowledge and Understanding**		
1.1	**Identify** and utilize relevant previous work that supports their research	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.	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.	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	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.	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.	Individual and group data analysis, Results Discussion.	**Direct** Written report, Viva voce. **Indirect:** student survey, Presentation
2.5	**Report** research findings in both written and verbal forms.	Individual and group discussion, report writing and presentation	**Direct** Written report, Viva voce. **Indirect:** student survey, Presentation
3.0	**Values**		
3.1	**Demonstrate** capacity to work both independently and in collaboration	Group discussion, group lab work	**Direct** (formative and summative): In lab

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
	with others to lead and manage the research work.		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.	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.	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
3.4			
3.5			

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
	Supervisor:		
1	**Midterm Student Evaluation**	**7**	**20 (20%)**
2	**End-of-Project Evaluation**	**14**	**30 (30%)**
	Referee		
3	**Report**	**15**	**15 (15%)**
4	**Presentation**	**15**	**20 (20%)**
5	**Answering Questions**	**15**	**15 (15%)**
			100 (100%)

***Assessment task** (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice :

Each group of students is assigned to a staff member who will be available for help and

academic guidance office hours at specific 2h on daily basis.

F. Learning Resources and Facilities

1. Learning Resources

Required Textbooks	To be find and chosen by students with the advising and help of the supervisor
Essential References Materials	To be find and chosen by students with the advising and help of the supervisor
Electronic Materials	Depends on the research topics
Other Learning Materials	Depends on the research topics

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Room for interactive discussion (round table), Laboratories
Technology Resources (AV, data show, Smart Board, software, etc.)	Software, Data show, smart board, printer
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	Specific laboratory equipment if required by the supervisor. DSL.

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effectiveness of teaching	Students, Peer and program leader	Indirect (CES)- Indirect peer evaluation
Assessment	Students, Program assessment committee.	Direct/ Indirect
Extent of achievement of course learning outcomes	URP coordinator	Direct/ Indirect
Quality of learning resources	Students, Faculty members	Indirect
Effectiveness of teaching	Students, Peer and program leader	Indirect (CES)- Indirect peer evaluation

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)
Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	**Department council**
Reference No.	**8**
Date	**16/4/1442**