Course Specification

(Postgraduate Programs)

Course Title:	Research Project
Course Code:	PHY 6299
Program:	Master of Science in Physics
Department:	Physics
College:	Science
Institution:	Imam Mohammad Ibn Saud Islamic University
Version:	3
Last Revision Date:	*26/09/2024*

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A. General information about the course:

1. Course Identification:

1. Credit hours: 4				
2. Course type				
A.	☐ University	☐ College	☒ Department	☐ Track
B.	☒ Required		☐ Elective	
3. Level/year at which this course is offered: Level 4/Year 2				
4. Course General Description:				
To demonstrate a student's work ethic, level of initiative, determination and approach to problem solving, give an early indication of a physicist's project management skills, as each student is largely responsible for their own programme of work, test of general physics ability and plan and carry out a detailed and original piece of scientific research and communicate the results.				
5. Pre-requirements for this course (if any): None				
6. Pre-requirements for this course (if any): None				
7. Course Main Objective(s):				

At the end of this course, students will be able to:

- **Make bibliography about the current state of the art of specific scientific subjects;**
- **Able to reed, comment and summarize scientific papers;**
- **Be adept for the development of innovative ideas in the research;**
- **Gain an understanding of the importance of the development of the science in specific problem and its limitations.**
- **Be adept at the application of physical and mathematical tools to solve real life problems in the considered domain;**
- **Know some important applications in the technology and understand the reason of the researchers interest on this field;**
- **Be familiar with new strategic ideas promising in the near future for scientific community;**
- **Understand the fundamental concepts and the principles of specific physical problem through a broad range of interesting applications in technology.**
- **Practice in writing reports from research works.**

2. Teaching Mode: (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	60	100%
2	E-learning		
3	Hybrid • Traditional classroom • E-learning		
4	Distance learning		

3. Contact Hours: (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures**	**60**
2.	**Laboratory/Studio**	
3.	**Field**	**-**
4.	**Tutorial**	**-**
5.	**Others (specify)……**	**-**
	Total	**60**

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

Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
1.0	**Knowledge and understanding**			
1.1	**List the bibliography about specific scientific subject using different international scientific sources.**	**K1**	• Lectures. • Office hours. Class discussions.	▪ Participation. ▪ Discussions.
1.2	**Name some fundamental courses to explain some real phenomena.**	**K1, K2**	• Lectures. • Office hours. Class discussions.	▪ Participation. ▪ Discussions

Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
1.3	**Define the importance of the development of the technology in specific scientific subject.**	**K1,K3**	• Lectures. • Office hours. • Class discussions.	▪ Participation. ▪ Discussions.
1.4	**Describe scientific theories in different area of physics.**	**K2, K3**	• Lectures. • Office hours. • Class discussions.	▪ Participation. ▪ Discussions
2.0	**Skills**			
2.1	**List the bibliography about specific scientific subject using different scientific sources.**	**S1, S2**	• Practical work. • Project.	▪ Reports.
2.2	**Develop the students ability to solve and analyze problems in physics related the topics covered by the course.**	**S2, S3**	• Discussion. • Tasks and missions.	▪ Discussions. ▪ Assignments.
2.3	**Communicate in a clear and concise manner orally, and using IT for acquiring and analyzing information.**	**S3, S4**	• Interactive discussions (special assignments in some courses will require students to search for data and/or information on their own). • Projects. • Use digital library.	▪ Reports. ▪ Presentation.
3.0	**Values, autonomy, and responsibility**			
3.1	**Show the collaboration and inter-professionalism in class discussions or team works, as well as solve problems independently.**	**V1, V2, V3**	• Small team tasks. • Open discussion. • Office hours.	▪ Participation. ▪ Discussion. ▪ Mini-project(s).
3.2	**Self-evaluate of the level of learning and performance, insist on achievement and excellence, and make logical decisions supported by evidence and arguments independently.**	**V2, V3**	• Small team tasks. • Open discussion. • Office hours.	▪ Reports. ▪ Presentations. ▪ Assignments.

C. Course Content:

No	List of Topics	Contact Hours
1	Bibliography	15
2	Experimental measurements and/or theoretical work.	36
3	Writing of the final report	15
	Total	72

D. Students Assessment Activities:

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	**The final year project is compulsory and 100% based on continuous assessment, i.e. it must be passed at the end semester examinations.**	**weekly**	**The final year project is an assessment of performance away from a formal examination**
2.	**First progress report**	**8th Week**	**20 %**
3.	**Advisor report**	**14th Week**	**40 %**
4.	**Evaluators reports**	**16th Week**	**40 %**

*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	***Depending on research project's subject***
Supportive References	***Depending on research project's subject***
Electronic Materials	***Depending on research project's subject***
Other Learning Materials	***Depending on research project's subject***

2. Educational and Research Facilities and Equipment Required:

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	**It's depending on the research project**
Technology equipment (Projector, smart board, software)	**It's depending on the research project**
Other equipment (Depending on the nature of the specialty)	

F. Assessment of Course Quality:

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	- Student.	Indirect (student will complete evaluation forms at the end of semester. Final exam is evaluated by the second examiner)
Effectiveness of students' assessment	- Supervisor - Evaluators	Direct (exams, HW, project, ...)
Quality of learning resources	- Faculty - Students	Indirect (surveys)
The extent to which CLOs have been achieved	- Advisor - Evaluators - Program Leaders	Direct (excel sheet)
Other		

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

Assessment Methods (Direct, Indirect)

G. Specification Approval Data:

COUNCIL /COMMITTEE	Quality Unit-Physics Department
REFERENCE NO.	Department council No. 6
DATE	26/09/2024