Course Specification

(Postgraduate Programs)

Course Title:	Research Seminar
Course Code:	PHYS695
Program:	Master of Science in Physics
Department:	Physical Sciences
College:	Science
Institution:	Jazan University
Version:	
Last Revision Date:	30/5/2024

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A. General information about the course:

1. Course Identification:

1. Credit hours: (3)				
2. Course type				
A.	☐University	☐College	☒ Department	☐Track
B.	☒ Required		☐Elective	
3. Level/year at which this course is offered: (level 3/ year 2)				
4. Course general Description:				
This course is a precursor and prerequisite to the master's thesis. It is designed to help students start their master's research program at an early stage to save time and reduce the time spent to produce thesis which usually takes more than is needed. In their third semester along with specialized courses this seminar option will prepare the student for the final requirement of the Master's program which is the thesis so that by the time the student completes the seminar and passes to fourth semester where they need to start their thesis she/she will immediately start on the main part of the project calculations without wasting time in the thesis topic selection or literature review (this is part of the seminar).				
5. Pre-requirements for this course (if any):Non				
6. Co-requirements for this course (if any):Non				
7. Course Main Objective(s):				

The main objectives of this course are focused on the following:

- **Identify the basic principles and skills to identify and formulate research problems based on analysis of relevant previous studies.**
- **Analyze literature survey in similar research areas to prepare gap analysis.**
- **Report on preliminary findings using reference and presentation software.**
- **Report on the chosen research methodology with justification.**
- **Present findings and recommendations orally.**

2. Teaching Mode: (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom		
2	E-learning		
3	Hybrid • Traditional classroom • E-learning	**45**	**100**
4	Distance learning		

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

No	Activity	Contact Hours
1.	**Lectures**	**30**
2.	**Laboratory/Studio**	
3.	**Field**	
4.	**Tutorial**	**15**
5.	**Others (specify)……**	
	Total	45

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: Upon completion of the course students will be able to**			
1.1	**Identify** research problems based on literature review and available resources	**PLO1.1**	Discovery learning – expository learning- demonstration – case study	Direct: Seminar, Essay, viva – end of class assessment, rubric Indirect: survey
1.2	**Describe** related research methodologies and their classifications and applications	**PLO1.1**	Discovery learning – expository learning- demonstration – case study	Direct: Seminar, Essay, viva – end of class assessment, rubric Indirect: survey

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.3	**Discuss** the research scope, plan, and related strategies and applications	**PLO1.2**	Discovery learning – expository learning- demonstration – case study	Direct: Seminar, Essay, viva – end of class assessment, rubric Indirect: survey
2.0	**Skills: Upon completion of the course students will be able to**			
2.1	**Formulate** the related research problem, objectives, and plan	**PLO2.1**	Problem-based learning- guided discussion- interactive discussion	Direct: Seminar, Essay, viva – end of class assessment, rubric Indirect: survey
2.2	**Analyze** related literature review effectively to solve the research problem based on the right methodology	**PlO2.2**	Problem-based learning- guided discussion- interactive discussion	Direct: Seminar, Essay, viva – end of class assessment, rubric Indirect: survey
2.3	**Show** abilities in preparing research seminars with effective communication and discussion management	**PLO2.3**	Demonstration- case study – guided discussion- orientation sessions	Direct: Seminar, Essay, viva – end of class assessment, rubric Indirect: survey
2.4	Develop skills to conduct experimental/theoretical research.	**PLO2.4**	Discovery learning – expository learning Problem-based learning- guided discussion- interactive discussion	Direct: Seminar, class assessment discussion, rubric response- viva Indirect: survey
3.0	**Values, autonomy, and responsibility: Upon completion of the course students will be able to**			
3.1	**Demonstrate** ability of independent lifelong learning	**PLO3.2**	Demonstration- guided discussion- orientation sessions	Direct: Seminar - End of class assessment- rubric Indirect: survey
3.2	**Observe** ethical standards when writing and presenting the research proposal.	**PLO3.1**	Interactive discussion- expository learning – interactive orientations	Direct: Seminar - End of class assessment- rubric Indirect: survey

C. Course Content:

No	List of Topics	Contact Hours
1.	Survey of the subject area of research. Search and selection of a personal area of interest. Review of sources in the subject area of research	6
2.	Presentation of the results of the analytical review in the selected area of interest. Collective discussion of the research topic.	6
3.	Development of a research plan. Discussion of the main idea for the practical implementation of the research results. Collective brainstorming to shape the proposed scientific novelty of the research	6
4.	Preparation of the theses of the report and overview presentation of the project	6
5.	Development of a dissertation plan, formation of a list of the main sources used and design of the first section of the dissertation	6
6.	Preparation of an article based on the results of the work. Project presentation for collective discussion.	3
7.	Preparation of an article based on the results of practical development of the obtained technical solutions	3
8.	Complex presentation of dissertation work.	9
Total		45

D. Students' Assessment Activities:

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Literature Review and Critical analysis	1-6	30
2.	Research Proposal Development	7-11	20
3.	Writing a short proposal and giving a seminar for a research project	12-14	**50** (30 referee assessment + 20 supervisor assessment)

*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	• Writing Scientific Research Articles: Strategy and Steps. 2nd Edition. by Margaret Cargill, Patrick O'Connor, ISBN-13: 978-1118570708. 2013. Wiley-Black Well Press., • Enjoy Writing Your Science Thesis or Dissertation: A Step-by-Step Guide to Planning and Writing a thesis or Dissertation for Undergraduate and Graduate Science Students. 2nd Edition by Elizabeth M Fisher, Richard C Thompson. ISBN-13: 978-1783264216. 2014. Imperial College Press.

Supportive References	• Yvonne N. Bui. How to Write a Master's Thesis. Third Edition. SAGE publications, Inc. 2020. p.298. ISBN-13: 978-1506336091, ISBN-10: 1506336094. • David Hitchcock. Patent searching made easy: how to do patent searches on the internet & in the library. Sixth edition. Berkeley, CA: Nolo, April 2013 p.257. ISBNs: 9781413318722, 141331872X, 9781413318739.
Electronic Materials	Web of Science
Other Learning Materials	Research articles from web of science regarding student's work.

2. Educational and Research Facilities and Equipment Required:

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classroom with data show
Technology equipment (Projector, smart board, software)	Saudi digital library
Other equipment (Depending on the nature of the specialty)	

F. Assessment of Course Quality:

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students, Peers, and program leader	Direct assessment of CLOs, Indirect surveys.
Effectiveness of students assessment	Students, Faculty.	Direct / Indirect.
Quality of learning resources	Students, Faculty members	**Indirect**
The extent to which CLOs have been achieved	Instructor	Direct / Indirect.
Other		

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

Assessment Methods (Direct, Indirect)

G. Specification Approval Data:

COUNCIL /COMMITTEE	**Department Council**
REFERENCE NO.	**Psci2415**
DATE	**1/10/2024**