



Form: Course Syllabus	Form Number	EXC-01-02-02A
	Issue Number and Date	2/3/24/2022/2963 05/12/2022
	Number and Date of Revision or Modification	
	Deans Council Approval Decision Number	2/3/24/2023
	The Date of the Deans Council Approval Decision	23/01/2023
	Number of Pages	07

1.	Course Title	Special Topics
2.	Course Number	0302992
3.	Credit Hours (Theory, Practical)	3
	Contact Hours (Theory, Practical)	(3,0)
4.	Prerequisites/ Corequisites	Department Approval
5.	Program Title	PhD Degree in Physics
6.	Program Code	021
7.	School/ Center	School of Science
8.	Department	Physics
9.	Course Level	PhD
10.	Year of Study and Semester (s)	All year (all semesters)
11.	Other Department(s) Involved in Teaching the Course	None
12.	Main Learning Language	English and Arabic
13.	Learning Types	<input checked="" type="checkbox"/> Face to face learning <input type="checkbox"/> Blended <input type="checkbox"/> Fully online
14.	Online Platforms(s)	<input checked="" type="checkbox"/> Moodle <input checked="" type="checkbox"/> Microsoft Teams
15.	Issuing Date	11 January 2025
16.	Revision Date	11 January 2025

17. Course Coordinator:

Name:	Contact hours:
Office number:	Phone number:
Email:	

**18. Other Instructors:**

Name:

Office number:

Phone number:

Email:

Contact hours:

19. Course Description:

This course focuses on advanced, emerging, and underexplored topics that are not included in the standard PhD curriculum. Designed to encourage innovation and interdisciplinary thinking, the course enables students to deepen their knowledge in specialized areas of research, develop skills for addressing complex challenges, and explore novel methodologies.

20. Program Intended Learning Outcomes: (To be used in designing the matrix linking the intended learning outcomes of the course with the intended learning outcomes of the program)

1. **SO1:** to be able to demonstrate an advanced and comprehensive understanding of core physics concepts and specialized knowledge in a chosen field of research, contributing to the frontier of physics.
2. **SO2:** to be able to develop and execute independent, original research projects that address complex scientific problems, advancing theoretical and experimental physics.
3. **SO3:** to be able to apply advanced mathematical and computational techniques to analyze complex physical phenomena and critically evaluate scientific literature and experimental results.
4. **SO4:** to be able to effectively communicate complex physics concepts, research findings, and their significance through academic writing, presentations, and public outreach.
5. **SO5:** to be able to adhere to high ethical standards and professional responsibility in conducting research, including data integrity, ethical treatment of subjects, and the responsible use of resources.
6. **SO6:** to be able to demonstrate leadership and collaborative skills within multidisciplinary teams, contributing to the development of new scientific knowledge and promoting knowledge-sharing across disciplines.
7. **SO7:** to be able to cultivate the ability to adapt to new scientific advancements and continuously engage in professional development to contribute to innovation in the field of physics.
8. **SO8:** to be able to master experimental and computational techniques relevant to the research field, demonstrating competency in operating and developing specialized physics instrumentation and software.



21. Course Intended Learning Outcomes: (Upon completion of the course, the student will be able to achieve the following intended learning outcomes)

1. **ILO1:** The student should be able to explore topics and methodologies not covered in core PhD courses.
2. **ILO2:** The student should be able to analyze advanced and cutting-edge research trends in the field.
3. **ILO3:** The student should be able to develop innovative approaches to address knowledge gaps in specialized topics.
4. **ILO4:** The student should be able to collaborate across disciplines to explore the broader impact of research.
5. **ILO5:** The student should be able to present and defend original research on a selected specialized topic.

Course ILOs	The learning levels to be achieved					
	Remembering	Understanding	Applying	Analysing	evaluating	Creating
1		✓	✓	✓		
2		✓	✓	✓	✓	
3		✓	✓	✓	✓	
4		✓	✓	✓	✓	
5		✓	✓	✓	✓	

22. The matrix linking the intended learning outcomes of the course with the intended learning outcomes of the program:

Program SOs	SO (1)	SO (2)	SO (3)	SO (4)	SO (5)	SO (6)	SO (7)	SO (8)
Course ILOs								
1	✓	✓	✓	✓	✓		✓	
2	✓	✓	✓	✓	✓		✓	
3	✓	✓	✓	✓	✓		✓	
4	✓	✓	✓	✓	✓		✓	
5	✓	✓	✓	✓	✓		✓	



2٣. Topic Outline and Schedule:

Week	Lecture	Topic	ILO/s Linked to the Topic	Learning Types (Face to Face/ Blended/ Fully Online)	Platform Used	Synchronous / Asynchronous Lecturing	Evaluation Methods	Learning Resources
1	6	Introduction to Specialized Topics	1-5	Face to Face	Class room, Teams	Synchronous	Quiz, Homework, Seminar, Midterm Exam, Final Exam	Curated selection of journal articles, conference proceedings, and case studies
2								
3	6	Emerging Frontiers in specific fields	1-5					
4								
5	6	Advanced Research Methodologies	1-5					
6								
7	6	Interdisciplinary Applications	1-5					
8								
9	6	Critical Challenges in specific fields	1-5					
10								
11	6	Ethics and Societal Impacts	1-5					
12								
13	6	Future Directions and Innovations	1-5					
14								
15	3	Research Presentations and Reflection	1-5					
16	3	Course Wrap-Up	1-5					



2٤. Evaluation Methods:

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:

Evaluation Activity	Mark	Topic(s)	ILO/s Linked to the Evaluation activity	Period (Week)	Platform
Assignments and Homework	20%	All	1-5	2, 6,10	
Midterm Exam	20%	1-6	1-5	8	Paper Exam
Topic Seminar	20%	All	1-5	14-15	
Final Exam	40%	All	1-5	16	Oral and Paper Exam

2٥. Course Requirements:

(e.g.: students should have a computer, internet connection, webcam, account on a specific software/platform...etc.):

Textbook, computer, Internet access, Microsoft Teams

2٦. Course Policies:

A- Attendance policies:

Students are expected to attend all classes. Absence should not exceed 15%.

B- Absences from exams and submitting assignments on time:

Exam makeups will be arranged for students with valid absence excuses.

C- Health and safety procedures:

Students are required to abide by all mandated health and safety procedures.

D- Honesty policy regarding cheating, plagiarism, misbehavior:

Cheating, plagiarism, and misbehavior will be dealt with according to the University regulations.

E- Grading policy:

Assignments and Homework: 20%, Midterm Exam: 20%, Topic Seminar: 20%, and Final Exam: 40%.

F- Available university services that support achievement in the course:

Microsoft Teams, E-Learning platform, Moodle.



2٧. References:

<p>A- Required book(s), assigned reading and audio-visuals:</p> <ul style="list-style-type: none"> • Primary Readings: Curated selection of journal articles, conference proceedings, and case studies. • Software/Tools: Access to specialized software, datasets, or lab equipment. <p>B- Recommended books, materials, and media:</p> <ul style="list-style-type: none"> • Curated selection of journal articles, conference proceedings, and case studies.

2٨. Additional information:

Not applicable

Name of the Instructor or the Course Coordinator:	Signature:	Date:
Name of the Head of Graduate Studies Committee/ Department	Signature:	Date:
Name of the Head of Department	Signature:	Date:
Name of the Head of Graduate Studies Committee/ School	Signature:	Date:
Name of the Dean or the Director	Signature:	Date: