

Course Syllabus

1	Course title	Electricity and Magnetism I	
2	Course number	0302331	
3	Credit hours	3	
	Contact hours (theory, practical)	3 hours weekly	
4	Prerequisites/corequisites	Phys2, Mathematical Physics 1	
5	Program title	Physics	
6	Program code		
7	Awarding institution	The University of Jordan	
8	School	Science	
9	Department	Physics	
10	Course level	3 rd year	
11	Year of study and semester(s)	1 st sem, 2022/2023	
12	Other department(s) involved in teaching the course		
13	Main teaching language	English	
14	Delivery method	<input checked="" type="checkbox"/> Face to face learning <input type="checkbox"/> Blended <input type="checkbox"/> Fully online	
15	Online platforms(s)	<input type="checkbox"/> Moodle <input checked="" type="checkbox"/> Microsoft Teams <input type="checkbox"/> Skype <input type="checkbox"/> Zoom <input type="checkbox"/> Others.....	
16	Issuing/Revision Date	13/10/2022	



17 Course Coordinator:

Name: **Noureddien Chair**

Contact hours:

Office number: M & Wd : 13:00 – 14:00

Phone number: 0792674668

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18 Other instructors:

Name:

Office number:

Phone number:

Email:

Contact hours:

Name:

Office number:

Phone number:

Email:

Contact hours:

19 Course Description:

As stated in the approved study plan.

This is an advanced physics course aiming at expanding student's knowledge in the subjects of electricity and magnetism. This course offers the classical point of view of this subject.



20 Course aims and outcomes:

A- Aims:

To give the students the proper mathematical and physics background in electricity and magnetism.

B- Students Learning Outcomes (SLOs):

For purposes of mapping the course SLOs to the physics program SLOs, at the successful completion of the physics program, graduates are expected to be able to:

SLO (1) Master professionally a broad set of knowledge concerning the fundamentals in the basic areas of physics: Quantum Mechanics, Classical Mechanics, Electrostatics and Magnetism, Thermal Physics, Optics, Theory of Special Relativity, Mathematical Physics, Electronics.

SLO (2) Apply knowledge of mathematics and fundamental concepts in the basic areas of physics to identify and solve physics related problems.

SLO (3) Utilize computers and available software in both data collections and data analysis.

SLO (4) Utilize standard laboratory equipment, modern instrumentation, and classical techniques to design and conduct experiments as well as to analyze and interpret data.

SLO (5) Develop a recognition of the need and ability to engage in life-long learning.

SLO (6) Demonstrate ability to use techniques, skills, and modern scientific tools necessary for professional practice.

SLO (7) Communicate clearly and effectively in both written and oral forms.

SLO (8) Apply proficiently team-work skills and employ team-based learning strategies.

SLO (9) Apply professional and ethical responsibility to society.

Upon successful completion of this course, students will be able to:

Course SLOs \ Program SLOs	SLO (1)	SLO (2)	SLO (3)	SLO (4)	SLO (5)	SLO (6)	SLO (7)	SLO (8)	SLO (9)
1. Deal with advanced vectors, calculus, and differential equations manipulation	✓	✓	✓		✓		✓	✓	✓
2. Study and analyze electrostatic problems	✓	✓	✓		✓		✓	✓	✓
3. Understand matter interactions with electric fields	✓	✓	✓		✓		✓	✓	✓
4. Understand currents and magnetic fields	✓	✓	✓		✓		✓	✓	✓
5. Understand matter interactions with magnetic fields	✓	✓	✓		✓		✓	✓	✓
6. Magnetic field interactions and inductance	✓	✓	✓		✓		✓	✓	✓

QF-AQAC-03.02.01 ✓

21. Topic Outline and Schedule:

Topic	Week	Instructor	Achieved ILOs	Evaluation Methods	Reference
Vector Analysis	1 -3	Dr. Nour Chair	1,2	In class discussions and demos+ short quiz	Text book, Internet, Refs
Electrostatics	4-6	Dr. Nour Chair	1,2,3	In class discussions and demos	Text book, Internet, Refs
Special Techniques	7-9	Dr. Nour Chair	1,2,3	In class discussions and demos+ 1 st exam + Experimental demos	Text book, Internet, Refs
Electric fields in Matter	10-12	Dr. Nour Chair	2,3,4	In class discussions and demos+ home works	Text book, Internet, Refs
Magnetostatics	13-14	Dr. Nour Chair	2,5	In class discussions and demos+ 2 nd exam+ experiemnts	Text book, Internet, Refs
Magnetic Fields in Matter	15	Dr. Nour Chair	2,5,6	In class discussions and demos	Text book, Internet, Refs
Electrodynamics	16	Dr. Nour Chair	2,3,4,5,7	In class discussions and demos	Text book, Internet, Refs

22 Evaluation Methods:

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

Evaluation Activity	Mark	Topic(s)	SLOs	Period (Week)	Platform
1 st Exam	30	Vector Analysis Electrostatics Special Techniques	1,2,3	6 th week	On campus
2 nd Exam	20	Electric fields in Matter Magnetostatics Magnetic Fields in Matter	4,5,6	12 th week	On campus



Final Exam	50	COMPREHENSIVE	1,2,3,4,5, 6	16 th week	On campus

23 Course Requirements

Students are directed and encouraged to use all possible resources:

- a) use the internet as a learning source.
- b) a series of short movies is promoted
- c) students are encouraged to learn a suitable software package as a learning tool.

24 Course Policies:

A- Attendance policies:

No more than 15% of classes can be missed under any circumstances. The students are supposed to be on time for each session and will not be admitted after 10 minutes from the starting time.

B- Absences from exams and submitting assignments on time:

Assignments are only taken if submitted on time and no make ups for short quizzes.

C- Health and safety procedures:

The lectures are located in proper locations for best lecturing conditions.

D- Honesty policy regarding cheating, plagiarism, misbehavior:

Any act of cheating or plagiarism is not tolerated and the students are clearly required to submit their own work.

E- Grading policy:

The grading for this course is divided into: 50 % midterm exams, and 50% final exam.



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

A proper library and well-furnished lab.

25 References:

A- Required book(s), assigned reading and audio-visuals:

- Introduction to Electrodynamics, D. J. Griffiths

B- Recommended books, materials, and media:

Youtube, Internet sources, Physics lab

26 Additional information:

Name of Course Coordinator: Noureddien Chair -----Signature: <i>Noureddien</i> -----
----- Date: 13/10/2022 -----
Head of Curriculum Committee/Department: ----- Signature: -----

Head of Department: ----- Signature: -----
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Head of Curriculum Committee/Faculty: ----- Signature: -----
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Dean: ----- Signature: -----