مركز الاعتماد وضمان الجودة
ACCREDITATION & QUALITY ASSURANCE CENTER

Course Syllabus

1	**Course title**	Practical Physics 2	
2	**Course number**	0302112	
3	**Credit hours**	1	
	Contact hours (theory, practical)	3 practical	
4	**Prerequisites/corequisites**		
5	**Program title**	Physics	
6	**Program code**		
7	**Awarding institution**		
8	**School**	Science	
9	**Department**	Physics	
10	**Course level**	1st year	
11	**Year of study and semester(s)**	1st Sem 2022/2023	
12	**Other department(s) involved in teaching the course**	None	
13	**Main teaching language**	Arabic + English	
14	**Delivery method**	☒Face to face learning ☐Blended ☐Fully online	
15	**Online platforms(s)**	☐Moodle ☒Microsoft Teams ☐Skype ☐Zoom ☐Others……	
16	**Issuing/Revision Date**	October 2022	

17 Course Coordinator:

Name: Bashar Lahlouh	Contact hours: 10 – 11 am (Everyday)
Office number: 206	Phone number: 22043
Email: bashar_lahlouh@ju.edu.jo	

18 Other instructors:

Name: Colleagues from the physics department. As advertised on the general lab schedule.

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.

20 Course aims and outcomes:

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A- Aims:

This lab gives engineering and science students a direct interaction with the basic electricity and magnetism concepts. In this lab students get a direct hands-on experience on many EM physics ideas such as: optics, diffraction of light, diffraction of electrons, thermionic emission, Geiger counters, photo-electric effect, dielectric constant, Millikan oil drop, mechanical oscillations, and Frank-Hertz Coulomb Law, Electric field, electric potential, DC current circuits, Ohm's law, and magnetic forces and fields.

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: Conservation of energy, conservation of charge, electric and magnetic fields, and classical physics.

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:

Program SLOs / Course SLOs	SLO (1)	SLO (2)	SLO (3)	SLO (4)	SLO (5)	SLO (6)	SLO (7)	SLO (8)	SLO (9)
1. Each team should manage and understand modern electromagnetic theory concepts.	✓	✓	✓	✓		✓	✓	✓	✓
2. Measure some of the basic quantities in EM.	✓	✓							
3. Handle large amount of data using proper techniques and software packages.	✓	✓	✓	✓					
4. Professional experiment reporting, and proper referencing.							✓	✓	✓
5. Ability to discuss and defend their understanding of the involved physics concepts.	✓	✓			✓				
6.									

21. Topic Outline and Schedule:

Week	Lecture	Topic	Intended Learning Outcome	Learning Methods (Face to Face/Blended/ Fully Online)	Platform	Synchronous/ Asynchronous Lecturing	Evaluation Methods	Resources
1								
		Electric field mapping		Face to face			Oral discussion and experimental report	Lab Manual+ Physics' Freshman physics textbook
2								
		Specific charge of copper ions		Face to face			Oral discussion and experimental report	Lab Manual+ Physics' Freshman physics textbook
Week	**Lecture**	**Topic**	**Intended Learning Outcome**	**Learning Methods (Face to Face/Blended/ Fully Online)**	**Platform**	**Synchronous/ Asynchronous Lecturing**	**Evaluation Methods**	**Resources**
3								
		Wheatstone Bridge		Face to face			Oral discussion and experimental report	Lab Manual+ Physics' Freshman physics textbook
4								
		Ohm's Law		Face to face			Oral discussion and experime	Lab Manual+ Physics' Freshman physics

							ntal report	textbook
5								
		The Potentiometer		Face to face			Oral discussion and experimental report	Lab Manual+ Physics' Freshman physics textbook
6								
		Power Transfer		Face to face			Oral discussion and experimental report	Lab Manual+ Physics' Freshman physics textbook
7								
		Kirchhoff's Laws		Face to face			Oral discussion and experimental report	Lab Manual+ Physics' Major Text Books
8								
		RC Time Constant		Face to face			Oral discussion and experimental report	Lab Manual+ Physics' Freshman physics textbook

9								
		Magnetic field of a Current		Face to face			Oral discussion and experimental report	Lab Manual+ Physics' Freshman physics textbook
10								
		Electromagnetic Induction		Face to face			Oral discussion and experimental report	Lab Manual+ Physics' Freshman physics textbook
11								
12								
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14								
15								

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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
Lab reports and personal discussions	30%			every week	
Prelab quizzes	10%			every week	
Midterm Exam	20%			End of semester	
Final Exam	40%			End of semester	

23 Course Requirements

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

A fully furnished lab is available for the students:

Each of the mentioned experiments has its full setup as described in the lab manual.

24 Course Policies:

A- Attendance policies: Student's should attend every lab session; you cannot miss more than two lab sessions with a proper excuse.

B- Absences from exams and submitting assignments on time: No late assignments are accepted. If you miss the final exam, then you can submit you excuse for evaluation and a make up exam will be offered.

C- Health and safety procedures: You must follow all safety measures during all lab sessions. High

voltage equipment and radioactive sources are common in this lab.

D- Honesty policy regarding cheating, plagiarism, misbehavior: all students are expected to have the highest levels of honesty and no plagiarism is tolerated in any of the lab reports.

E- Grading policy: Every student will be able to see his/her oral evaluation grade and graded reports are returned as soon as possible.

F- Available university services that support achievement in the course: A fully furnished lab is available for the students.

25 References:

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

The Lab manual

B- Recommended books, materials, and media:

* Physics for Scientists and Engineers, Serway, (any edition)

*Youtube and internet resources.

26 Additional information:

Name of Course Coordinator: Bashar Lahlouh Signature: ---------- Date: ----------
Head of Curriculum Committee/Department: ---------- Signature: ----------
Head of Department: ---------- Signature: ----------
Head of Curriculum Committee/Faculty: ---------- Signature: ----------
Dean: ---------- Signature: ----------