مركز الاعتماد وضمان الجودة

Course Syllabus

1	**Course title**	Practical physics for computer science students	
2	**Course number**	0302116	
3	**Credit hours**	1	
	Contact hours (theory, practical)	3 hours practical, one theory	
4	**Prerequisites/corequisites**	0302106 or simultaneously	
5	**Program title**	BSc	
6	**Program code**	02	
7	**Awarding institution**	The university of Jordan	
8	**School**	Of science	
9	**Department**	Of physics	
10	**Course level**	First year	
11	**Year of study and semester(s)**	2020/2021	
12	**Other department(s) involved in teaching the course**		
13	**Main teaching language**	English	
14	**Delivery method**	☐Face to face learning ☐Blended ☒Fully online	
15	**Online platforms(s)**	☒Moodle ☒Microsoft Teams ☐Skype ☐Zoom	
16	**Issuing/Revision Date**	27/9/2021	

17 Course Coordinator:

Name: ola Hassouneh Contact hours: 1-2/Sunday, Tuesday, Thursday

Office number: Phone number: 21042

Email: o.hassouneh@ju.edu.jo

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ACCREDITATION & QUALITY ASSURANCE CENTER

18 Other instructors:

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

19 Course Description:

10 experiments each of 3 hrs/week duration: collection and analysis of data; vectors: force table; force and motion; Electric Field Mapping; Measurement of Resistance Ohm's Law; Kirchoff's Law; RC-Time Constant; Law-Pass and High Pass Filters; Diode Characteristics; Rectifiers.

20 Course aims and outcomes:

A- Aims:

The aim of the course is to engage each student in signification experiences with experimental processes and to give such students a good basic understanding of the main physics topics and an introduction to the methods of experimental physics. It will provide a good foundation of basc physics that is applicable to other areas of science and technology.

B- Physics Program 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.

C- Course Intended Learning Outcomes (ILOs):

1. Students completing this course should understand that physics is an experimental science and that observation and experimentation are as important as concepts and theories.
2. State the basic laws of physics in mechanics , electric, electronics and identify how they can be applied in various contexts.
3. Laboratory investigations should encourage students to add some of their own ideas to experiments and their interpretation.
4. Students will learn to present well-organized, logical and scientifically technical reports.
5. Perform simple physical experiments, using a variety of physics apparatus, including the gathering, interpretation and analysis of data.

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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. Students completing this course should understand that physics is an experimental science and that observation and experimentation are as important as concepts and theories.	✓	✓		✓		✓			
2. State the basic laws of physics in mechanics , electric, electronics and identify how they can be applied in various contexts.	✓	✓		✓	✓				
3. Laboratory investigations should encourage students to add some of their own ideas to experiments and their interpretation.	✓	✓		✓		✓	✓	✓	
4. Students will learn to present well-organized, logical and scientifically technical reports.				✓			✓	✓	
5. Perform simple physical experiments, using a variety of physics apparatus, including the gathering, interpretation and analysis of data.	✓	✓		✓					

21. Topic Outline and Schedule:

Week	Lecture	Topic	Course Intended Learning Outcomes	Learning Methods (Face to Face/Blended / Fully Online)	Platform	Synchronous / Asynchronous Lecturing	Evaluation Methods	Resources
1	13/7-14/7	Experimental Error	1,3,4,5	Fully online	Microsoft teams+ Moodle		Lab-Report+ Oral Mid-term Exam+ Oral Final Exam	Lab-manual+ recorded experiment video
2	25/7-26/7	Collection & Analysis of Data	1, 3, 4, 5	Fully online	Microsoft teams+ Moodle		Lab-Report+ Oral Mid-term Exam+ Oral Final Exam	Lab-manual+ recorded experiment video
3	27/7-28/7	Vectors	1-5	Fully online	Microsoft teams+ Moodle		Lab-Report+ Oral Mid-term Exam+ Oral Final Exam	Lab-manual+ recorded experiment video
4	1/8-2/8	Electric Field Mapping	1-5	Fully online	Microsoft teams+ Moodle		Lab-Report+ Oral Mid-term Exam+ Oral Final Exam	Lab-manual+ recorded experiment video

5	3/8-4/8	Measurement of Resistance Ohm's Law	1-5	Fully online	Microsoft teams+ Moodle		Lab-Report+ Oral Mid-term Exam+ Oral Final Exam	Lab-manual+ recorded experiment video
6	8/8-9/8	Kirchhoff's Laws	1-5	Fully online	Microsoft teams+ Moodle		Lab-Report+ Oral Mid-term Exam+ Oral Final Exam	Lab-manual+ recorded experiment video
8	10/8-11/8	Force and Motion	1-5	Fully online	Microsoft teams+ Moodle		Lab-Report+ Oral Mid-term Exam+ Oral Final Exam	Lab-manual+ recorded experiment video
9	15/8-16/8	RC Time Constant	1-5	Fully online	Microsoft teams+ Moodle		Lab-Report+ Oral Mid-term Exam+ Oral Final Exam	Lab-manual+ recorded experiment video
10	17/8-18/8	Low-Pass And High-Pass Filter	1-5	Fully online	Microsoft teams+ Moodle		Lab-Report+ Oral Mid-term Exam+ Oral Final Exam	Lab-manual+ recorded experiment video

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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)	PHY-Program SLOs	Course ILO's	Period (Week)
Oral Mid term exam	20%	1. Experimental Error 2. Collection & Analysis of Data 3. Vectors 4. Electric Field Mapping 5. Measurement of Resistance Ohm's Law 6. Kirchhoff's Laws	3,4, 6, 7	1-5	18/8/2021

Final Oral Exam	50%	All 10 experiments	3,4, 6, 7	1-5	24/8/2021		
Lab Reports	30%	For All 10 experiments	3,4, 6, 7	1-5	For each given experiment		

23 Course Requirements

students should have:

a computer, internet connection, accounts on Moodle, Microsoft Teams and JUEXAM platforms.

24 Course Policies:

A- Attendance policies:

The students should attend to all the laboratory sessions.

B- Absences from exams and submitting assignments on time:

Absence from exams is not allowed, and the students should return to their own instructor in any critical cases, such as a medical, psychological, or compassionate reasons.

C- Health and safety procedures:

We don't have any policy at the moment considering the safety procedures, nevertheless, the instructor in each session has to give a general safety instructions to the student.

D- Honesty policy regarding cheating, plagiarism, misbehavior:

Any of the above misbehavior is not allowed during the lab's sessions.

E- Grading policy:

(1) Course work consists of laboratory work (30%), (2) Mid term exam (20%), (3) Final exam (50%).

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

Moodle and JUEXAM platforms.

25 References:

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

LABOROTARY EXPERIMENTS: PHYSICS LAB- 111. Nidal Ershaidat Bashar Lahlouh Ahmad Masadeh Moneeb Shatnawi Ola Hassouneh Ammar Alhusseini. Copyright, The University of Jordan (2017).

LABOROTARY EXPERIMENTS: PHYSICS LAB- 112. N.SALEH, B.BULOS, I.SHAHIN, A.HINDELEH. Copyright 1998. The University of Jordan.

B- Recommended books, materials, and media:

1.F. Sears & M. Zemansky□s, "University Physics with Modern Physics"14th edition, Pearson, Pearson Education Limited, 2016.

2. RaymondA.SerwayandJohnW.JewettJr.,"PhysicsForScientistsand Engineers with Modern Physics", 9th edition, (Thomson Learning, Belmont, CA, USA, 2014).

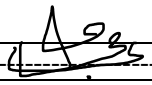
3. David Halliday, Robert Resnick, and Jearl Walker, "Extended

4. Giancoli, Physics for Scientists & Engineers with Modern Physics, Principles of Physics", 9th Edition John Wiley & Sons, Inc., 2011.

5. Bauer Westfall, University Physics with Modern Physics, McGrawHill, 2011.

6. https://www.ld-didactic.de/en/ld-didactic-download-center.html.

26 Additional information:

Name of Course Coordinator: ---Ola Hassouneh---------Signature:  Date: ---27/9/2021--
Head of Curriculum Committee/Department: ---------- Signature: ----------
Head of Department: ---------- Signature: ----------
Head of Curriculum Committee/Faculty: ---------- Signature: ----------
Dean: ---------- Signature: ----------