1	**Course title**	Physics Lab for Life Science Students
2	**Course number**	0302113
3	**Credit hours**	1 credit hour
	Contact hours (theory, practical)	(1 theory, 3 practical)
4	**Prerequisites/corequisites**	Physics for Life Science Students. 0302103
5	**Program title**	B.S.C in Physics
6	**Program code**	03
7	**Awarding institution**	University of Jordan
8	**School**	Of Science
9	**Department**	Physics
10	**Course level**	Undergrade
11	**Year of study and semester(s)**	2023/2024
12	**Other department(s) involved in teaching the course**	None
13	**Main teaching language**	English
14	**Delivery method**	X Face to face learning ☐Blended ☐Fully online
15	**Online platforms(s)**	X Moodle x Microsoft Teams ☐Skype ☐Zoom ☐Others……
16	**Issuing/Revision Date**	9/06/2024

17. Course Coordinator:

Office numbers, office hours, phone numbers, and email addresses should be listed.
Dr. Bashar Lahlouh
S,T,T:10:00 – 11:00 AM, M,W: 12:00 – 13:00 PM
Office: 206 Physics, Tel#: 22043
Bashar_lahlouh@ju.edu.jo

18. Other instructors:

Office numbers, office hours, phone numbers, and email addresses should be listed.

19. Course Description:

As stated in the approved study plan.
This course offers practical training on dealing and measuring with basic classical physics problem: Motion, thermodynamics, and electricity.

20. Course aims and outcomes:

A- Aims:
This course aims at providing the students with the needed skills and experience to work with physical concepts and scientific reporting.

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:

Program SLOs / Course SLOs	SLO (1)	SLO (2)	SLO (3)	SLO (4)	SLO (5)	SLO (6)	SLO (7)	SLO (8)	SLO (9)
1. have ability to deal with experimental errors and error propagation		✓				✓		✓	✓
2. be able to collect, graph and analyze experimental data.	✓	✓						✓	✓
3. make measurements and collect data on linear and simple motion.	✓	✓						✓	✓
4. understand the behavior of trapped ideal gas.	✓	✓						✓	✓
5. measure and evaluate currents, voltages and resistance.	✓	✓						✓	✓
6. relate thermal energy and electrical energy.	✓	✓						✓	✓
7. write a proper scientific report.	✓	✓						✓	✓

21. Topic Outline and Schedule:

1.

Week	Topic	Intended Learning Outcome	Learning Methods (Face to Face/Blended/ Fully Online)	Platform	Synchronous / Asynchronous Lecturing	Evaluation Methods	Resources
1	Experimental errors	1,2,7	**Face to Face**			Quiz+ Reports	Lab Manual
		1,2,7	**Face to Face**			Quiz+ Reports	Lab
		1,2,7	**Face to Face**			Quiz+ Reports	Manual
2	Collection and analysis of data	1,2,7	**Face to Face**			Quiz+ Reports	Lab
		1,2,7	**Face to Face**			Quiz+ Reports	Manual
		1,2,7	**Face to Face**			Quiz+ Reports	Lab
3	Vectors	1,2,7	**Face to Face**			Quiz+ Reports	Manual
		1,2,7	**Face to Face**			Quiz+ Reports	Lab
		1,2,7	**Face to Face**			Quiz+ Reports	Manual
4	Motion in one dimension	1,2,7	**Face to Face**			Quiz+ Reports	Lab
		1,2,7	**Face to Face**			Quiz+ Reports	Manual
		1,2,7	**Face to Face**			Quiz+ Reports	Lab
5	Simple Pendulum	1,2,4,7	**Face to Face**			Quiz+ Reports	Manual
		1,2,5,7	**Face to Face**			Quiz+ Reports	
		1,2,5,7	**Face to Face**			Quiz+ Reports	
6	Gas Law	1,2,5,7	**Face to Face**			Quiz+ Reports	
		1,2,5,7	**Face to**			Quiz+	

			Face			Reports	
		1,2,5,6,7	**Face to Face**			Quiz+ Reports	
7	Specific charge of copper ions	1,2,4,7	**Face to Face**			Quiz+ Reports	
		1,2,5,7	**Face to Face**			Quiz+ Reports	
		1,2,5,7	**Face to Face**			Quiz+ Reports	
8	Wheat stone Bridge	1,2,5,7	**Face to Face**			Quiz+ Reports	
		1,2,5,7	**Face to Face**			Quiz+ Reports	
		1,2,5,6,7	**Face to Face**			Quiz+ Reports	
9	Joule Heat	1,2,4,7	**Face to Face**			Quiz+ Reports	
		1,2,5,7	**Face to Face**			Quiz+ Reports	
10	Measurement of resistance	1,2,5,7	**Face to Face**			Quiz+ Reports	
		1,2,5,7	**Face to Face**			Quiz+ Reports	
11	Potentiometer	1,2,5,7	**Face to Face**			Quiz+ Reports	

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22. Evaluation Methods and Course Requirements (Optional):

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:
1) In class discussions and interaction.
2) In class detailed scientific report.
3) Midterm exam.
4) Final Exam.

23. Course Policies:

A- Attendance policies:

Students can not miss more than 2 lab sessions.

Students and instructors are expected to show up on time. Students will not be admitted to any session after 15 minutes from the starting time of that session.

B- Absences from exams and handing in assignments on time:

*All assignments are to be submitted by the end of each lab sessions.

*All students are expected to show up for the midterm and the final exam. No make ups will be offered unless the students provide proper documentation on why they missed the exam.

C- Health and safety procedures:

*This lab includes dealing with many instruments. The experiments are chosen carefully such that they do not pose hay safety of health concerns.

*Students are always monitored and briefed of all safety procedures.

D- Honesty policy regarding cheating, plagiarism, misbehavior:

*Students are expected to abide by the ethics and all the known honor codes of the university community.

E- Grading policy + Weighting (i.e. weight assigned to exams as well as other student work)

*Grades and grading policy are clearly advertised to students.

The grades in this lab are distributed as follows: 40% lab work and reports +20% in-class midterm exam + 40% Final exam.

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

*University of Jordan provides students with quality labs, staff, and library to help them achieve the best of their potentials.

G- Statement on Students with disabilities

* Th e premises at the University are designed to cope for the needs of students with disabilities. The University also provides direct assistance to those students through different programs and personnel.

Students with Disabilities: Students with disabilities who need special accommodations for this class are encouraged to meet with the instructor and/or their academic advisor as soon as possible. In order to receive accommodations for academic work in this course, students must inform the course instructor and/or their academic advisor, preferably in a written format, about their needs no later than the 4th week of classes.

24. Required equipment:

The labs are very well furnished and equipped with the instruments needed for all experiments: air tracks, timers, ammeters, voltmeters, galvanometers, resistors, power supplies..

25. References:

A- Required book (s), assigned reading and audio-visuals:
*Lab manual.
*University Physics, Young and Freedman, 14th edition, Pearson

B- Recommended books, materials, and media:
*Physics for Scientists and Engineers, Jewett and Serway, 10th edition.
*Youtube and internet website =s on the subjects.

26. Additional information:

Date: 6/ 26/ 2024

Name of Course Coordinator: ***Bashar Lahlouh*** Signature: ----------

Head of curriculum committee/Department: ---------- Signature: ----------

Head of Department: ---------- Signature: ----------

Head of curriculum committee/Faculty: ---------- Signature: ----------

Dean: ---------- -Signature: ----------

Copy to:

Head of Department

Assistant Dean for Quality Assurance