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	2023/10/15
	Deans Council Approval Decision Number	265/2024/24/3/2
	The Date of the Deans Council Approval Decision	2024/1/23
	Number of Pages	06

1.	**Course Title**	General Physics 1
2.	**Course Number**	**0329101**
3.	**Credit Hours (Theory, Practical)**	3 theory
	Contact Hours (Theory, Practical)	3 theory
4.	**Prerequisites/ Corequisites**	**None**
5.	**Program Title**	BSc. In Physics
6.	**Program Code**	
7.	**School/ Center**	Faculty of Science
8.	**Department**	Department of Physics
9.	**Course Level**	First year Students
10.	**Year of Study and Semester (s)**	First Semester 2025/2026
11.	**Program Degree**	BSc
12.	**Other Department(s) Involved in Teaching the Course**	-
13.	**Learning Language**	English
14.	**Learning Types**	☑ Face to face learning ☐Blended ☐Fully online
15.	**Online Platforms(s)**	☐Moodle ☑Microsoft Teams
16	**Issuing Date**	February 2025
17.	**Revision Date**	June 2025

18. Course Coordinator:

Name:	Contact hours:
Office number:	Phone number: 065355000
Email:	

19. Other Instructors:

Faculty Members of the Department of Physics

20. Course Description:

Basic Principles of Mechanics: Motion in One Dimension, Vectors, Motion in Two Dimensions, The Laws of Motion, Circular Motion, Work and Kinetic Energy, Potential Energy and Conservation of Energy, Linear Momentum and Collisions, Rotation of a Rigid Object About a Fixed Axis, Angular Momentum.

21. 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)

SO1: Identify, formulate, and solve broadly-defined technical or scientific problems by applying knowledge of Mathematics and Science and/or technical topics to areas relevant to the discipline.

SO2: Formulate or design a system, process, procedure or program to meet desired needs

SO3: Develop and conduct experiments or test hypotheses, analyze and interpret data and use scientific judgment to draw conclusions

SO4: Communicate effectively with a range of audiences in oral or written forms and exhibit ethical and professional values.

SO5: Reflect the impact of technical and/or scientific solutions in economic, environmental, and societal contexts.

SO6: Function effectively on teams that establish goals, plan tasks, meet deadlines, and analyze risk and uncertainty.

PILO's	*National Qualifications Framework Descriptors*		
	Competency (C)	Skills (B)	Knowledge (A)
1.	☐	☐	☒
2.	☐	☐	☒
3.	☐	☐	☒
4.	☐	☐	☒
5.	☐	☐	☒
6.	☐	☐	☒

* Choose only one descriptor for each learning outcome of the program, whether knowledge, skill, or competency.

A- Aims: To give students a proper background on the basic physics behind motion, forces fields and their applications in simple linear circuits and in circuits with diodes and transistors. The lab will give the students a hands-on experience that covers the ideas discussed in class.

B- Intended Learning Outcomes (ILOs): Upon successful completion of this course students will be able to …

1. Differentiate between scalar and vector quantities and apply vector representation, addition, subtraction, and components in physical calculations.
2. Describe and analyze one- and two-dimensional motion using kinematic concepts and equations.
3. Explain and apply Newton's three Laws of Motion, with emphasis on free-body diagrams and force analysis.
4. Analyze physical systems using the concepts of work, energy, and power, and explain the relationships among them.
5. Apply the principles of linear momentum and impulse, including conservation of momentum, to solve basic collision and recoil problems.
6. Describe rotational motion and angular momentum, and apply conservation laws to simple rotational systems.
7. Solve qualitative and quantitative problems from everyday situations, demonstrating critical thinking and appropriate use of fundamental physics principles.

Course ILOs #	The learning levels to be achieved						Competencies
	Remember	Understand	Apply	Analyse	Evaluate	Create	
1.	✓	✓	✓				
2.		✓	✓	✓	✓		
3.	✓	✓	✓	✓			
4.	✓	✓	✓	✓			
5.		✓	✓	✓	✓		
6.		✓	✓	✓	✓		
7.	✓	✓	✓				

23. The matrix linking the intended learning outcomes of the course -CLO's with the intended learning outcomes of the program -PILOs:

PILO's * / CLO's	1	2	3	4	5	6	Descriptors**		
							A	B	C
1.	✓	✓					✓		
2.	✓	✓					✓		
3.	✓	✓					✓		
4.	✓	✓					✓		
5.	✓						✓		
6.	✓	✓					✓		
7.	✓	✓							

***Linking each course learning outcome (CLO) to only one program outcome (PLO) as specified in the course matrix.**

****Descriptors are determined according to the program learning outcome (PLO) that was chosen and according to what was specified in the program learning outcomes matrix in clause (21).**

Chapter	Contents	Number of Weeks	Suggested Exercises & Problems
1	**Units, Physical Quantities and Vectors** 1.7 Vectors and Vector Addition 1.8 Components of Vectors 1.9 Unit Vectors 1.10 Products of Vectors	**Three weeks**	**Chapter 1:** 26, 33, 36, 43, 60, 81
2	**Motion Along A Straight Line** 2.1 Displacement, Time, Average Velocity 2.2 Instantaneous Velocity 2.3 Average and Instantaneous Acceleration 2.4 Motion with Constant Acceleration 2.5 Freely Falling Bodies 2.6 Velocity and Position by Integration Summary		**Chapter 2:** 1, 4, 8, 14, 19, 31, 35, 42, 49, 70
3	**Motion in Two or Three Dimensions** 3.1 Position and Velocity Vectors 3.2 The Acceleration Vector 3.3 Projectile Motion 3.4 Motion in a Circle		**Chapter 3:** 1, 5, 8, 10, 16, 26, 28, 41, 57
4	**Newton's Laws of Motion** 4.1 Force and Interaction 4.2 Newton's First Law 4.3 Newton's Second Law 4.4 Mass and Weight 4.5 Newton's Third Law	**One week**	**Chapter 4:** 2, 7, 16, 23, 31, 40, 49

	4.6 Free body Diagram		
13	13.1 Newton's Law of Gravitation 13.2 Weight		**Chapter 13:** 13.4, 13.5, 13.11, 13,12
5	**Applying Newton's Laws** 5.1 Using Newton's First Law: Particles in Equilibrium 5.2 Using Newton's Second Law: Dynamics of Particles 5.3 Frictional Forces 5.4 Dynamics of Circular Motion 5.5 The Fundamental Forces of Nature		**Chapter 5:** 1, 7, 9, 15, 20, 27, 37, 45, 65, 74
6	**Work and Kinetic Energy** 6.1 Work 6.2 Kinetic Energy and the Work-Energy Theorem 6.3 Work and the Energy with Varying Force 6.4 Power	**One week**	**Chapter 6:** 1, 8, 16, 20, 24, 36, 51, 62, 71, 79
7	**Potential Energy and Energy Conservation** 7.1 Gravitational Potential Energy 7.2 Elastic Potential Energy 7.3 Conservative and Non-Conservative Forces 7.4 Force and Potential Energy		**Chapter 7:** 1, 9, 21, 27, 30, 33, 41, 55, 57
8	**Momentum, Impulse, and Collisions** 8.1 Momentum and Impulse 8.2 Conservation of Momentum 8.3 Momentum Conservation and Collisions 8.4 Elastic Collisions 8.5 Center of Mass (No Integrals)	**One week**	**Chapter 8:** 3, 7, 13, 18, 31, 33, 44, 48, 51, 55, 73
9	**Rotational of Rigid Bodies** 9.1 Angular Velocity, and Acceleration 9.2 Rotation with Constant Angular Acceleration 9.3 Relating Linear and Angular Kinematics 9.4 Energy in Rotational Motion	**One week**	**Chapter 9:** 2, 8, 9, 10, 11, 23, 28, 36, 43
10	**Dynamics of Rotational Motion** 10.1 Torque 10.2 Torque and Angular Acceleration for a Rigid Body 10.4 Work and Power in Rotational Motion 10.5 Angular Momentum 10.6 Conservation of Angular Momentum		**Chapter 10:** 1, 4, 5, 9, 16, 30, 31, 35, 43

25. Evaluation Methods:

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

Evaluation Activity	*Mark wt.	CILO's						
		1	2	3	4	5	6	7
First Exam	30%	✓	✓	✓	✓			✓
Second Exam	20%			✓	✓	✓		✓
Final Exam	50%	✓	✓	✓	✓	✓	✓	✓
Total 100%	100%							

*** According to the instructions for granting a Bachelor's degree.**

****According to the principles of organizing semester work, tests, examinations, and grades for the bachelor's degree.**

26. Course Requirements:

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

The students are expected to have internet connection and a calculator

27. Course Policies:

A- Attendance policies:

Students are expected to attend all class sessions. If a student cannot attend a class session, the teacher must be notified prior to that. For the university's rules and regulations, the student's total absences must not exceed 15 % of the total class hours. Please refer to the University of Jordan student Handbook for further explanation.

B- Absences from exams and submitting assignments on time:

a. Failure in attending a course exam other than the final exam will result in zero mark unless the student provides an official acceptable excuse to the instructor who approves a make up exam.
b. Failure in attending the final exam will result in zero mark unless the student presents an official acceptable excuse to the Dean of his/her faculty who approves an incomplete exam, normally scheduled to be conducted during the first two weeks of the successive semester.

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 for the student.

D- Honesty policy regarding cheating, plagiarism, misbehavior:

Cheating, plagiarism, misbehavior are attempts to gain marks dishonestly and includes; but not limited to:

- Copying from another student's work.
- Using materials not authorized by the institute.
- Collaborating with another student during a test, without permission.
- Knowingly using, buying, selling, or stealing the contents of a test.
- Plagiarism which means presenting another person's work or ideas as one's own, without attribution.
- Using any media (including mobiles) during the exam.

E- Grading policy:

Grades will be awarded based on the statistical distribution of marks out of 100%

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

- Faculty members website

E-Learning website

28. References:

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

University Physics with Modern Physics, F. Sears & M. Zemansky's, **15th edition**, (Pearson, Pearson Education Limited, 2016).

B- Recommended books, materials, and media:

- Raymond A. Serway and John W. Jewett Jr., **"Physics for Scientists and Engineers with Modern Physics",** 9th edition, (Thomson Learning, Belmont, CA, USA, 2014).
- David Halliday, Robert Resnick, and Jearl Walker, **"Extended Principles of Physics",** 9th Edition (John Wiley & Sons, Inc., 2011).
- Bauer Westfall, **"University Physics with Modern Physics",** (McGraw Hill, 2011).
- James S. Walker, **"Physics"** Fourth Edition, (Addison – Wesley, 2010).
- Giancoli, **"Physics for Scientists & Engineers with Modern Physics",** Fourth Edition, (Pearson Education, 2009).

29. Additional information:

Name of the Instructor or the Course Coordinator: …OLA HASSOUNEH……	Signature: … …	Date: 24/2/2025
Name of the Head of Quality Assurance Committee/ Department ……	Signature: ……..……	Date: ……..……
Name of the Head of Department ……	Signature: ……..……	Date: ……..……
Name of the Head of Quality Assurance Committee/ School or Center ……	Signature: ……..……	Date: ……..……
Name of the Dean or the Director ……	Signature: ……..……	Date: ……..……