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جامعة كل العرب

**Course Syllabus**  
**Faculty of Arts and Science**

**Academic Department Basic Science and Humanities**

**Academic Year 2021 / 2022 Semester: Second**

<b>Course Title :</b>	<b>General Physics 1</b>
<b>Course No. :</b>	<b>1501120</b>
<b>Prerequisite :</b>	-
<b>Concurrent :</b>	-
<b>Department :</b>	<b>Basic Science and Humanities</b>
<b>Coordinator :</b>	<b>Dr. Husam Miqdad</b>
<b>Mode of Instruction</b>	<b><u>On- campus</u></b> - 3 hours in-class (Synonym) learning

**\* Instructor:**

<b>Lecturer</b>	<b>Office Phone</b>	<b>Room No.</b>	<b>Office Hours</b>	<b>E-mail</b>
Dr.Husam Miqdad	217	1409	(9:30-11) Sun.,Thu.Mon.,Wed.	<a href="mailto:h_miqdad@asu.edu.jo">h_miqdad@asu.edu.jo</a>
Tasneem Alayed	215	1412	(12:30-2) Mon.,Wed.	<a href="mailto:t_ibrahim@asu.edu.jo">t_ibrahim@asu.edu.jo</a>

**Course Description**

The material in this course covers fundamental topics in classical physics mechanics (motion in one dimension and two dimensions,circular motion) and energy).The students will learn the basic concepts of physics and its applications. This course is specified for engineering and science students.

**Intended Learning Outcomes**

Upon the completion of the course, this module should lead to the following learning outcomes:

**A. Knowledge and Understanding (Student should):**

- A1 Understand the basic concepts and principles in physics (mechanics).  
A2 Explain the basic concepts in motion.

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A3 Understand the basic concepts in energy.

### **B. Cognitive and Intellectual Skills (Student should):**

B1 Distinguish physical applications needs and requirements.

B2 Analyze and compare the different applications requirements.

### **C. Subject Specific Skills (Student should):**

C1 Implement solution of physics (mechanics).

C2 Learn how to implement different applications in physics.

### **D. Transferable Skills (Student should):**

D1 Form a good foundation for follow-up courses.

D2 Demonstrate communication skills with others.

D3 Enhance the self-learning ability of the student.

### **Program Learning Outcomes (PLOs):**

1. -----
2. -----
3. -----
4. -----
5. -----

Course Learning Outcomes Alignment Matrix				
	CLO. 1	CLO. 2	CLO. 3	CLO. 4
PLO.1:	-	-	-	-
PLO 2:	-	-	-	-
PLO.3:	-	-	-	-
PLO.4:	-	-	-	-
PLO. 5	-	-	-	-



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**Course Contents and Schedule**

Week	Day and Date	Topics to be covered	Method of instruction	CLOs	PLOs
1	Sun. 17/10/2021	<b>Ch.2: Motion in One Dimension</b> Displacement, Velocity and Speed, Instantaneous Velocity and Speed, Acceleration.	In-class lecture	A1,A2, B1, C2,D1,D3	-
	Tue. Official holiday		In-class lecture		
2	Sun. 24/10/2021	<b>Ch.2: Motion in One Dimension</b> One Dimensional Motion with Constant Acceleration and Freely Falling Objects.	In-class lecture	A1,A2, B1, C2,D1,D3	-
	Tue. 26/10/2021		In-class lecture		
3	Sun. 31/10/2021	<b>Ch.3: Vectors</b> Coordinate System, Frames of Reference, Vector and Scalar Quantities.	In-class lecture	A1, B1, C1, D1	-
	Tue. 2/11/2021		In-class lecture		
4	Sun. 7/11/2021	<b>Ch.3: Vectors</b> Some Properties of Vectors Components of a Vector, Unit vectors, scalar product and cross product.	In-class lecture	A1,B1, C1,D1	-
	Tue.9/11/2021		In-class lecture		
5	Sun. 14/11/2021	<b>Ch.4: Motion in Two Dimensions</b> The Displacement, Velocity and Acceleration Vectors. Two Dimensional Motion with Constant Acceleration and Projectile Motion.	In-class lecture	A1,A2, B1, C2,D1,D3	-
	Tue.16/11/2021		In-class lecture		
6	Sun. 21/11/2021	<b>Ch.5: The Laws of Motion</b> The concept of Force, Newton's First Law, Inertial Mass, Newton's Second Law, Weight, Newton's third Law.	In-class lecture	A1,A2,B1, B2,C1,C2, D1, D2	-
	Tue.23/11/2021		In-class lecture		
7	Sun. 28/11/2021	<b>Ch.5: The Laws of Motion</b> Some Applications of Newton's Laws and Forces of Friction.	In-class lecture	A1,A2,B1, B2,C1,C2, D1,D2,D3	-
	Tue.30/11/2021		In-class lecture		
8.	<b>MID Term Exam</b>				
9	Sun. 12/12/2021	<b>Ch.6: Circular Motion and Other Applications</b> Newton's Second Law Applied to Uniform Circular Motion and Non uniform Circular Motion.	In-class lecture	A1,A2,B1, B2,C1,C2, D1,D2,D3	-
	Tue. 14/12/2021		In-class lecture		



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10	Sun. 19/12/2021	<b>Ch.7:Energy of a System</b> Work Done by a Constant Force, The Scalar Product of two vectors.	In-class lecture	A1,A2,A3, B1,B2,C1, C2,D1,D2, D3	-
	Tue 21/12/2021		In-class lecture		
11	Sun. 26/12/2121	<b>Ch.7:Energy of a System</b> Work Done by a Varying Force, Kinetic Energy and Work-Energy Theory and Power.	In-class lecture	A1,A2,A3, B1,B2,C1, C2,D1,D2, D3	-
	Tue.28/12/2021		In-class lecture		
12	Sun. 2/1/2022	<b>Ch.8:Conservation of Energy</b> Potential energy, Conservative and No conservative Forces, Conservative Forces and Potential Energy.	In-class lecture	A1,A2,A3, B1,B2,C1, C2,D1,D2, D3	-
	Tue.4/1/2022		In-class lecture		
13	Sun. 9/1/2022	<b>Ch.8:Conservation of Energy</b> Conservation of Energy, Changes in Mechanical Energy when non conservative Forces Are Present, Relationship Between Conservative Forces and Potential Energy and Conservation Energy in General.	In-class lecture	A1,A2,A3, B1,B2,C1, C2,D1,D2, D3	-
	Tue.11/1/2022		In-class lecture		
14	Sun. 16/1/2022	<b>Ch.9:Linear Momentum and Collisions</b> Linear Momentum and its Conservation, Impulse and momentum.	In-class lecture	A1,A2,B2, C2,D1,D2	-
	Tue.18/1/2022		In-class lecture		
15	Sun. 23/1/2022	<b>Ch.9:Linear Momentum and Collisions</b> Collisions, Elastic and Inelastic Collisions in One Dimension and Tow Dimensional Collisions.	In-class lecture	A1,A2,B2, C2,D1,D2	-
	Tue. 25/1/2022		In-class lecture		
16.	<b>Final Exam</b>				



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## Grading Plan and Assessment Tools

Assessment Tools	Weights	Due date
Mid-term	30	
Assignments	-	
Quizzes	20	
Inter active lectures	-	
Group Work	-	
Presentation	-	
Reports	-	
Project	-	
Case-Study	-	
Final Exam	50	

## Supplementary Reading

### **Textbook:**

- 1- "Physics for Scientists and Engineers, with Modern Physics; " 9th edition, Serway/Jewett, 2014.

### **References:**

- 1- "Physics for Scientists and engineers"; by Lawrence S. Lerner; Jones and Bartlett Publishers, 1996.
- 2- "Fundamentals of Physics"; by D. Halliday and R. Resnick; 10<sup>th</sup> Edition; John Wiley and Sons; 1991.
- 3- "University Physics"; by H. Benson; John Wiley and sons; 1991.
- 4- "University Physics"; 7<sup>th</sup> Edition; by F. Sears, M. Zemansky and H. Young; Addison-Wesley Publications Company; 1987.

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Subject Coordinator

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Head of Curriculum Committee

Dr. Husam Miqadad

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Copy to:

- Department Head.
- Head of Curriculum Committee.
- Course File.

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