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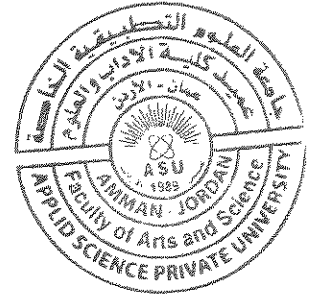
AMMAN - JORDAN

المستوى الذهبي

جامعة كل العرب

Faculty of Arts and Science
Course Syllabus
Second Semester /academic Year 2020 / 2021

Course Title: General Physics For Pharmacy
Course No.: 1501123
Prerequisite: -
Concurrent: -
Department: Basic Science and Humanities
Coordinator: Tasneem Alyed
Instructor:



Name	Office Number	Office Phone	Office Hours	E-mail
Dr.Hussam Miqdad	217	1409	(1:00-2:00) Sun, Thu (9:30-11:00) Mon, Wed	H_miqdad@asu.edu.jo
Tasneem Alayed	215	1214	(9:00-10:00) Sun, Tue, Thu (9:00-10:00) Mon, Wed	t_ibrahim@asu.edu.jo

*** Course Description:**

The material in this course covers fundamental topics in classical physics (mechanics, Fluids, Heat, and Light). The students will learn the basic concepts of physics and its application in Biology, Medicine, and Pharmacy. This course is specified for pharmacy students.

The E-learning platform (Microsoft Teams) will be used for teaching.

*** Learning Outcomes :**

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

A. Knowledge and Understanding (student should) :

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رقم القرار 24 / 233

تاريخ الاعتماد 2017/9/18



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A1) Be able to understand the basic concepts and principles in physics.

A2) Be able to solve problems.

B. Cognitive and Intellectual Skills :

B1) Distinguish physical applications needs and requirements

B2) Analyze and compare the different applications requirements

C. Subject specific skills :

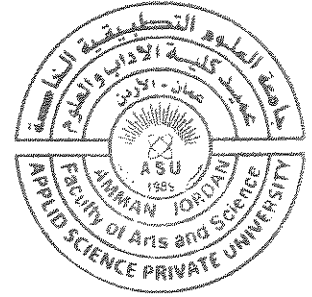
C1) Learn how to implement different applications in physics.

C2) Implement solution of physics

D. Transferable Skills :

D1) Home works and quizzes.

D2) Assignments.



*** Course Contents and Schedule:**

Semester Weeks	Subject
First	Describing Motion: Kinematics in One Dimension 2.1 Reference Frames and Displacement 22 2.2 Average Velocity 23 2.3 Instantaneous Velocity 25 2.4 Acceleration 26 2.5 Motion at Constant Acceleration 28
Second	Kinematics in Two Dimensions: Vectors 3.1 Vectors and Scalars 50 3.2 Addition of Vectors—Graphical Methods 50 3.3 Subtraction of Vectors, and Multiplication of a Vector by a Scalar 52 3.4 Adding Vectors by Components 53
Third	Dynamics: Newton's Laws of Motion 4.1 Force 76 4.2 Newton's First Law of Motion 76 4.3 Mass 78 4.4 Newton's Second Law of Motion 78 4.5 Newton's Third Law of Motion 81 4.6 Weight—the Force of Gravity; and the Normal Force 84 4.7 Solving Problems with Newton's Laws: Free-Body Diagrams 87 4.8 Problems Involving Friction, Inclines 93



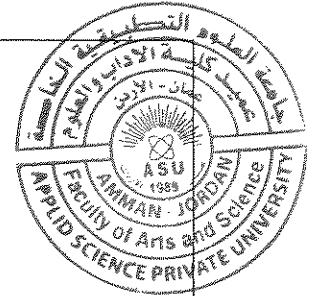
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Fourth	<p>Work and Energy</p> <p>6.1 Work Done by a Constant Force 139</p> <p>6.2 Work Done by a Varying Force 142</p> <p>6.3 Kinetic Energy, and the Work-Energy Principle 142</p> <p>6.4 Potential Energy 145</p> <p>6.5 Conservative and Nonconservative Forces 149</p> <p>6.6 Mechanical Energy and Its Conservation 150</p> <p>6.7 Problem Solving Using Conservation of Mechanical Energy 151</p> <p>6.8 Other Forms of Energy and Energy Transformations; The Law of Conservation of Energy 155</p> <p>6.9 Energy Conservation with Dissipative Forces: Solving Problems 156</p> <p>6.10 Power 159</p>
Fifth	<p>Fluids</p> <p>10.1 Phases of Matter 261</p> <p>10.2 Density and Specific Gravity 261</p> <p>10.3 Pressure in Fluids 262</p> <p>10.4 Atmospheric Pressure and Gauge Pressure 264</p> <p>10.5 Pascal's Principle 265</p> <p>10.6 Measurement of Pressure; Gauges and the Barometer 266</p> <p>10.7 Buoyancy and Archimedes' Principle 268</p> <p>10.8 Fluids in Motion; Flow Rate and the Equation of Continuity 272</p> <p>10.9 Bernoulli's Equation 274</p> <p>10.10 Applications of Bernoulli's Principle: Blood Flow 276</p>
Sixth	<p>Heat</p> <p>14.1 Heat as Energy Transfer 391</p> <p>14.2 Internal Energy 392</p> <p>14.3 Specific Heat 393</p> <p>14.4 Calorimetry—Solving Problems 394</p> <p>14.5 Latent Heat 397</p>
Seventh	<p>Light: Geometric Optics</p> <p>23.1 The Ray Model of Light 645</p> <p>23.4 Index of Refraction 656</p> <p>23.5 Refraction: Snell's Law 657</p> <p>23.6 Total Internal Reflection; Fiber Optics 659</p> <p>23.7 Thin Lenses; Ray Tracing 661</p>
Eighth	<p>The Wave Nature of Light</p> <p>24.1 Waves vs. Particles; Huygens' Principle and Diffraction 680</p> <p>24.2 Huygens' Principle and the Law of Refraction 681</p> <p>24.4 The Visible Spectrum and Dispersion 685</p> <p>24.7 The Spectrometer and Spectroscopy 692</p> <p>24.10 Polarization 699</p>

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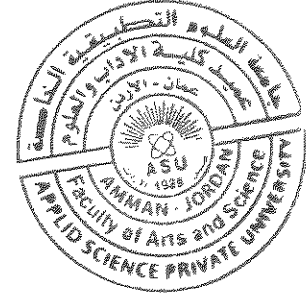
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*** Teaching Methods:**

- Inter active lectures
- Self reading
- Written assignments

*** Evaluation:**

Mid Term Exam	30%	(20/4/2021) (Microsoft Teams)
Assignments	20%	
Final Exam	50%	
Total	100%	



*** Written Assignment :**

There will be homework handed on paper and **homework** problems from your textbook. To receive full credit for your hardcopy homework handed in, you must prepare and submit lucid and clearly reasoned written solutions. These problems will be graded and returned

*** Guide line for written Assignment :**

1. Introduction
2. Rationale / importance of studying the topic.
3. Objectives.
4. Review of literature

*** Textbook :**

"Physics, Principles with application", by D. C. Giancoli, 7th ed. 2014, Pearson.

*** References :**

1. "Physics in Biology and Medicine", by Paul Davidovits, 3th ed. 2007, Elsevier.
2. "Physics" Third Edition (1988) by Joseph W. Kane, and Morton M. Sternheim



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Subject Coordinator

Tasneem Alayed

Signature:

Head of Curriculum Committee

Dr. Husam Miqdad

Signature:

Department Head

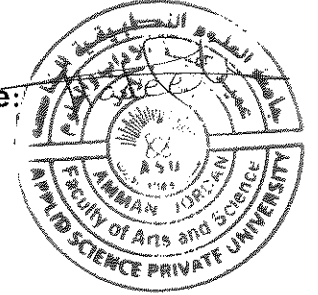
Dr. Husam Miqdad

Signature:

Dean Faculty

Dr.Hadeel Ail saed

Signature:



Copy to:

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

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