



ASU
جامعة العلوم التطبيقية الخاصة
APPLIED SCIENCE PRIVATE UNIVERSITY

AMMAN - JORDAN



المستوى الذهبي

جامعة كل العرب

**Faculty of Arts and Science
Course Syllabus**

Semester: Second

Academic Year: 2020/2021

Course Title: General Physics 2

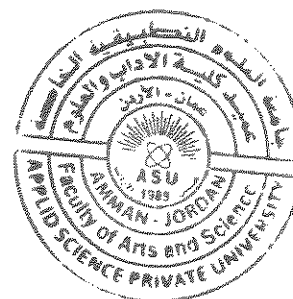
Course No.: 1501220

Prerequisite: 1501120

Concurrent:-

Department: Basic Science and Humanities

Coordinator: Dr. Abeer Adaileh



***Instructors:**

Name	Office Number	Office Phone	Office Hours	E-mail
Dr. Abeer Adaileh	225A	1281	Sun., Tue., Thu. :9-10 Mon., Wed.:9:30 -11:00	a_adaileh@asu.edu.jo

*** Course Description:**

The material in this course covers fundamental topics in classical physics (electrostatics (electric fields, electric potential and capacitance), direct current and magnetic fields). The students will learn the basic concepts of physics and its application in. This course is specified for engineering and science students. The E-learning platform (Microsoft Teams) will be used for to teach this course.

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رقم القرار 233 / 24

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*** Learning Outcomes:**

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

A. Knowledge and Understanding (student should):

- A1) Understand the basic concepts in physics electrostatics.
- A2) Explain the basic concepts in direct current.
- A3) Understand the basic concepts in magnetic fields
- A4) Understand concepts of electrical circuits.

B. Cognitive and Intellectual Skills:

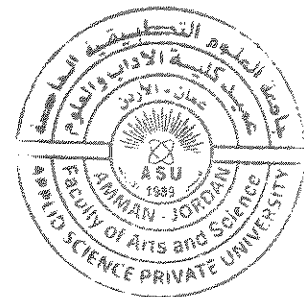
- B1) Distinguish physical applications needs and requirements
- B2) Analyze and compare the different applications requirements

C. Subject specific skills:

- C1) Implement solution of physics electrostatics
- C2) Implement solution of physics direct current
- C3) Learn how to implement different applications in physics.

D. Transferable Skills:

- D1) Home works and quizzes
- D2) Case study.
- D3) Assignments.



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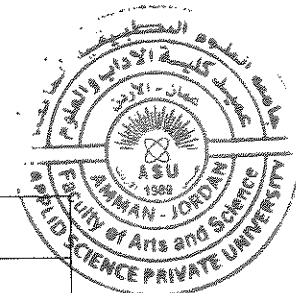
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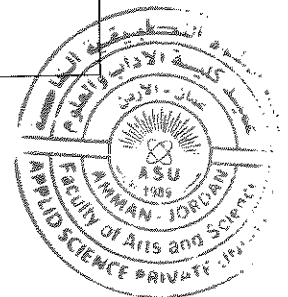
*** Course Contents and Schedule:**



Semester Weeks	Subject	Topic Details
First	Electric Fields	23.1 Properties of Electric Charges 23.2 Charging Objects by Induction 23.3 Coulomb's Law
Second	Electric Fields	23.4 Analysis Model: Particle in a Field (Electric). 23.5 Electric Field of a Continuous Charge Distribution 23.7 Motion of Charges in Uniform Electric Field
Third	Gauss's Law	24.1 Electric Flux 24.2 Gauss's Law
Fourth	Gauss's Law	24.3 Application of Gauss's Law to Various Charge Distribution 24.4 Conductors in Electrostatic Equilibrium
Fifth	Electric Potential	25.1 Electric Potential and Potential Difference 25.2 Potential Difference in a Uniform Electric Field
Sixth	Electric Potential	25.3 Electric Potential and Potential Energy Due to Point Charges 25.4 Obtaining the Value of the Electric Field from Electric Potential 25.5 Electric Potential Due to Continuous Charge Distribution
Seventh	Capacitance and Dielectrics	25.6 Electric Potential Due to a Charged Conductor 26.1 Definition of Capacitance 26.2 Calculating Capacitance
Eighth	Capacitance and Dielectrics	26.4 Energy Stored in a Charged Capacitor 26.5 Capacitors with Dielectrics



Ninth	Current and Resistance	26.3 Combinations of Capacitors 27.1 Electric Current 27.2 Resistance
Tenth	Current and Resistance	27.6 Electrical Power 28.1 Electromotive force
Eleventh	Direct Current Circuits	28.2 Resistors in Series and in Parallel. 28.3 Kickoff's Rules
Twelfth	Direct Current Circuits	28.3 Kickoff's Rules 28.4 RC Circuits
Thirteenth	Magnetic Fields	29.1 Analysis Model: Particle in a Field (Magnetic) 29.2 Motion of a Charged Particle in a Uniform Magnetic Field
Fourteenth	Magnetic Fields	29.3 Torque on a Current Loop in a Uniform Magnetic Field 29.4 Magnetic Force acting on a Current-Carrying Conductor
Fifteenth	Sources of Magnetic Field	30.1 The Biot-Savart Law 30.2 The Magnetic Force Between Two Parallel conductors
Sixteen	Sources of Magnetic Field	30.3 Ampere's Law 30.4 The Magnetic Field of a Solenoid 30.5 Gauss's Law in Magnetism





*** Teaching Methods:**

- Inter active lectures
- Self reading
- Written assignments

*** Evaluation:**

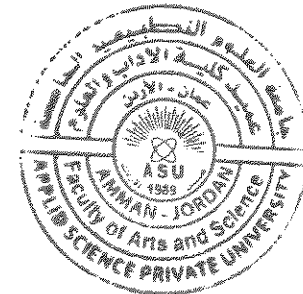
Mid Term Exam	30% (22/4/2021) (Microsoft Teams)
Assignments	20%
Final Exam	50%

*** Written Assignment:**

There will be homework handed on paper, homework problems from your textbook, and quizzes. 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.





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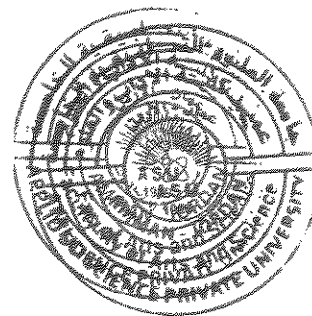
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*** Textbook:**

R. Serway., "Physics for Scientists and Engineers: with Modern Physics", 9th Edition, Saundens College Publishing.

*** References:**

- 1- Halliday, Resnick, Walker., "Fundamentals of Physics Extended", 10th edition, 2010, John Wiley & Sons, Inc.
- 2- Fishbane, Gasiorowicz, Thornton, "Physics: For Scientists and Engineers with Modern Physics", 3rd edition, 2005, Pearson Prentice Hall.
- 3- H. Benson, "University Physics" John Wiley and Sons, 1991.



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Subject Coordinator

Dr. Abeer Adaileh

Signature:

د. عبير عضايلة

Head of Curriculum Committee

Dr. Husam Miqdad

Signature:

د. حسان ميقداد

Department Head

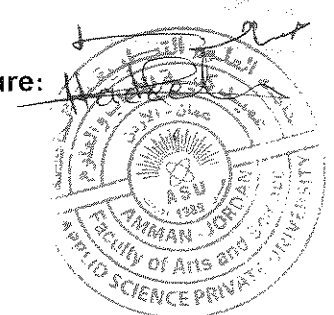
Dr. Husam Miqdad

Signature:

Dean Faculty

Dr. Hadeel Ail saed

Signature:



Copy to:

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

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