Faculty of Engineering & Technology

Physics 2

Information :

Course Code :	PHY 132	**Level** :	Undergraduate	**Course Hours :**	4.00- Hours

Department :	Faculty of Engineering & Technology

Instructor Information :

Title	Name	Office hours
Lecturer	AHMED MOHAMED ALI ASHOUR AHMED	2
Assistant Lecturer	Mohamed Essam Abd El Aziz Abd El Aal	20
Teaching Assistant	Ahmed Abdelfattah Abdelaziz Abdelfattah	
Teaching Assistant	Youmna Elsayed Abd Elalem Mohamed Sayed Ahmed	

Area Of Study :

Enrich students' knowledge about physical concepts of electricity and magnetism.
Train student about electromagnetic applications related to engineering.

Description :

Coulomb's Law, Electric field intensity and flux, Gauss's law of electrostatics and its applications, Electric potential and potential energy, electrodynamics, electric current and current density, ohm's law and Kirchhoff's rules for electric circuit solving, magnetic field and flux, gauss's law of magnetism, force due to a moving charge and current carrying wire, Ampere's circuital law, Faraday's law for induction, Maxwell's equations in integral form and their physical meaning for electromagnetism.

Course outcomes :

a.Knowledge and Understanding: :

1 -	Explain basic principles of electric field and flux.
2 -	Describe fundamentals of electrodynamics including Ohm's and Kirchhoff's laws.
3 -	Explain basic principles of Magnetic field and flux.
4 -	Describe Ampere's circuital law, Faraday's law, and Maxwell's equations.

b.Intellectual Skills: :

1 -	Estimate electric field and flux to solve physical engineering problems.
2 -	Evaluate simple D.C. circuits based on electrodynamics fundamentals.
3 -	Apply Magnetic field basic principles in physical engineering problems.

c.Professional and Practical Skills: :

1 -	Perform experiments on different physical phenomena including electricity and magnetism.
2 -	Measure different physical parameters related to studied topics.

d.General and Transferable Skills: :

1 -	Work effectively in a team.
2 -	Communicate effectively.

Course Topic And Contents :

Topic	No. of hours	Lecture	Tutorial / Practical
Gauss's law of magnetism and forces due to a moving charge and current carrying wire.	7	1	2
Ampere's circuital law and its applications	9	1	3
Faraday's law for induction and its applications	11	1	4
Maxwell's equations in integral form and their meaning	5	1	1
Coulomb's Law	5	1	1
Electric field intensity and flux	10	2	2
Gauss Law of electrostatics and its applications	12	2	3
Electric potential and potential energy	14	2	4
Electric current and current density	11	1	4
Ohm's law and Kirchhoff's rules for electric circuit solving	9	1	3
Magnetic field and flux	12	2	3

Teaching And Learning Methodologies :

Interactive Lecturing
Discussion
Problem solving
Experimental learning
Cooperative learning

Course Assessment :

Methods of assessment	Relative weight %	Week No	Assess What
Assignment	5.00		
Final Exam	40.00		
Lab.	10.00		
Mid- Exam 1I	20.00		
Mid- Exam I	10.00		
Participation	10.00		

Course Notes :

handout and notes

Recommended books :

a) %College physics+ Giambattista and Richardson, Mac gramttill, 3rd edition, 2010.
b) %Principles of physics+ Halliday and Resnick, Jearl Walker, 9th edition, 2012.

http://www.fue.edu.eg