Applied Physics

General Information

Course Number	Course Number PHY-150			
Credit Hours (2+1) 3 hours				
Prerequisite	None			
Course Coordinator	Dr. Muhammad Asim Ali			

Course Objectives

It is a computing support course for a computer science program. The aim is to equip the student with the concepts of physics. Course brushes students' basic knowledge by starting from the basic concepts and then progressing gradually toward the advanced concepts. By the course completion, students would have developed a good understanding of physics fundamentals.

Catalog Description

PHY-150

Course Content

Session No.	Topics								
01-02	Units SI Units / Unit Conversions Scalar and Vectors / Dot and Cross Products								
03-05	Electrostatics: Attraction and Repulsion of Charges Coulomb's Law Superposition Principle								
06-07	Electric Field and Electric Potential: The Electric Field Electric Potential The electron Volt Electromotive force								
07-08	Electric Current: Motion of charges in electric Field Resistance and Resistivity Electric Current Kirchhoff's Rules Series / Parallel Circuits								
09-12	Magnetic Fields and Electromagnetics Waves: Magnetic Fields Force on Current Carrying Wires Torque on a Current Loop Magnetic Dipole Moment Force on a Moving Charge								

13-14	Semi Conductors							
	PN Junction Bipolar Transistor							
	Applications of Transistors (Logic Gates, Switch and Amplifiers)							
15-16	Introduction to Quantum Computing							
	Theoretical Framework							
	Principle of Operations							
	Qu-Bits							

Text Book

1. Fundamental of Physics, by Halliday, Resnick and John Walker (8th edition)

Reference Material

- 1. Electronic Devices, by Thomas Floyd
- 2. Conceptual Physics, by Paul. H. Hewitt
- 3. Introduction to Quantum mechanics by David Griffith
- 4. Quantum-Computing-since-Democritus, by Scott Aaronson

Course Learning Outcomes

	Course Learning Outcomes (CLO)						
1	To learn the basic knowledge of fundamentals of Physics.						

2

To apply the application's concepts of Physics in the real world.

CLO-SO Map

	SO IDs											
CLO ID	GA1	GA2	GA3	GA4	GA5	GA6	GA7	GA8	GA9	GA10	GA11	GA12
CLO 1	1	0	0	0	0	0	0	0	0	0	0	0
CLO 2	0	1	1	0	0	0	0	0	0	0	0	0