

Fr. Conceicao Rodrigues College of Engineering, Bandra (West), Mumbai-400 050				
Subject: Applied Physics- II				
Name of Faculty: Dr. Dipak A Bauskar			Academic Year: 2019-20	
Division: C			Semester: II	
No of Lect	Sr. No.	Name of the Topic	Planned Date	Executed Date
Module1: Laser & Fiber optics(6)				
1	1	Absorption and emission as quantum processes, Metastable states, population inversion and pumping.	1/6/2020	1/6/2020
2	2	Einstein's Coefficients – derivation, He-Ne laser.	1/7/2020	1/7/2020
3	3	Nd-YAG laser and semiconductor laser, Applications of laser-Holography	1/9/2020	1/9/2020
4	4	Optical fiber: construction, Classification & characteristics.	1/13/2020	1/13/2020
5	5	Numerical aperture and acceptance angle - Numericals.	1/14/2020	1/14/2020
6	6	V-number and number of Modes - Numericals	1/16/2020	1/16/2020
Module 2: Diffraction of light(4)				
7	1	Diffraction of light – Basic principles & classification	1/21/2020	1/21/2020
8	2	Diffraction at single slit - Derivation.	1/22/2020	1/22/2020
9	3	Diffraction at multiple slit – diffraction Grating.	1/28/2020	1/28/2020
10	4	Applications and parameters of grating & Numericals.	1/29/2020	2/4/2020
Module 3: Relativity (3)				
11	1	Inertial & non inertial frames of references	2/4/2020	2/5/2020
12	2	Galilean & Lorents transformations	2/5/2020	2/11/2020
13	3	Time dialation, Length contraction, Mass energy relation.	2/11/2020	2/12/2020
Module 4: Electrodynamics (5)				
14	1	Scaler and Vector fields, Vector differentiation	2/12/2020	
15	2	Physical significance of gradient, curl and divergence,	2/25/2020	
16	3	Gauss's law, Faraday's Law, Ampere's Circutal law	3/3/2020	
17	4	Derivation of Maxwell's four equations.	3/4/2020	
18	5	Numerical problems	3/11/2020	
Module 5: Nanotechnology(3)				
19	1	Introduction to nano, Two main approaches in nano technology.	3/17/2020	
20	2	Tools used in nano technology- SEM, STM & AFM	3/18/2020	
21	3	Nano materials: Methods to synthesize nanomaterials (Ball milling, Sputtering, Vapour deposition, solgel),	3/24/2020	
22	4	properties and applications of nanomaterials.	3/31/2020	
Module 6: Physics of Sensors(5)				
23	1	Resistive sensors: Pt100 construction & calibration	4/1/2020	
24	2	Pressure sensors: capacitive, flux and inductive methods	4/7/2020	
25	3	Piezo electric transducer: distance and velocity - using Ultrasonic sensors	4/15/2020	
26	4	Optical sensors: Photo diode -construction & application	4/21/2020	
27	5	Pyroelectric sensors: Construction & Working, Bolometer.	4/22/2020	