

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