

Lesson Plan

Name of Faculty : **Ujjwal Jyoti**
 Discipline : **Applied Science**
 Semester : **II**
 Subject : **Applied Physics-II**

Lesson Plan Duration: 15 Week (From Jan 2018 to April 2018)

Work Load (Lecture/ Practical) per week (In hours): Lecture – 28, Practical – 28)

APPLIED PHYSICS – II (170023)

Week	Theory		Practical	
	Lecture Day	Topic (Including Assignment / Test)	Practical Day	Topic
1	1	Wave motion, transverse and longitudinal wave motion with examples,	1	General Introduction and Familiarization with Lab apparatus
	2	Terms used in wave motion like displacement, amplitude, time period, frequency, wavelength, wave velocity,		
	3	Relationship among wave velocity, frequency and wave length		
	4	Simple Harmonic Motion (SHM): definition, examples		
2	5	Cantilever (definition, formula of time period (without derivation))	2	To find the time period of a simple pendulum
	6	Free, forced and resonant vibrations with examples		
	7	Assignment 1		
	8	Acoustics of buildings – reverberation, reverberation time, echo,		
3	9	Noise, coefficient of absorption of sound, methods to control reverberation time.	3	To determine and verify the time period of Cantilever
	10	Ultrasonics: Introduction and their engineering applications (cold welding		
	11	Engineering applications (drilling, SONAR), Problem discussion		
	12	Reflection and refraction with laws, refractive index,		
4	13	Lens formula (no derivation), power of lens (related numerical problems).	4	Revision and Viva Voce
	14	Total internal reflection and its applications, Critical angle and conditions for total internal reflection		
	15	Microscope, Telescope (definition), Uses of microscope and telescope.		
	16	Revision and Problem discussion		
5	17	Sessional Test 1	5	To verify ohm's laws by plotting a graph between voltage and current.
	18	Coulombs law, unit charge,		
	19	Electric field, Electric lines of force (definition and properties),		
	20	Electric flux, Electric Intensity		
6	21	Electric potential (definition, formula).	6	To verify laws of resistances in series combination.
	22	Electric field intensity due to a point charge.		
	23	Gauss law (Statement and derivation)		
	24	Capacitor and Capacitance (with formula and units),		
7	25	Series and parallel combination of capacitors	7	To verify laws of resistances in series combination.
	26	Simple numerical problems		
	27	Revision and Problem discussion		
	28	Assignment 2		
8	29	Electric Current and its Unit,	8	Revision and Viva Voce
	30	Direct and alternating current,		
	31	Resistance and Specific Resistance (definition and units) Conductance,		
	32	Series and Parallel combination of Resistances.		
9	33	Ohm's law (statement and formula),	9	To verify laws of resistance in parallel combination.
	34	superconductivity (definition only).		
	35	Heating effect of current, Electric power,		

	36	Electric energy and its units		
10	37	Kirchhoff's laws(statement and formula)	10	To find resistance of galvanometer by half deflection method
	38	Revision and Problem discussion		
	39	Sessional Test 2		
	40	Introduction to magnetism,		
11	41	Types of magnetic materials. Dia, para and ferromagnetic materials with examples.	11	Revision and Viva Voce
	42	Magnetic field,magnetic intensity,		
	43	Magnetic lines of force, magnetic flux and their units		
	44	Electromagnetic induction (definition)		
12	45	Revision and Problem discussion	12	To verify laws of reflection of light using mirror.
	46	Assignment 3		
	47	Energy bands, Types of materials (insulator, semi conductor, conductor),		
	48	Intrinsic and extrinsic semiconductors, p-n junction diode and its V-I characteristics		
13	49	Diode as rectifier: half wave and	13	To identify different components like resistance, capacitor, diode.
	50	Full wave rectifier (centre tap only)		
	51	Semiconductor transistor; pnp and npn (Introduction only).		
	52	Revision and Problem discussion		
14	53	Lasers: full form, characteristics,	14	To study colour coding scheme of resistance.
	54	Engineering and medical applications of lasers.		
	55	Fibre optics: Introduction to optical fibers (definition , parts),		
	56	Applications of optical fibers in different fields.		
15	57	Introduction to nanotechnology (definition of nanomaterials with examples) and its applications.	15	Revision and Viva Voce
	58	Revision and Problem discussion		
	59	Sessional Test 3		