## Lesson Plan

Name	:	Dr. Wasim Javed
Discipline	:	Common for all branches
Semester	:	2 <sup>nd</sup>
Subject	:	Applied Physics II
Code	:	220023
Duration	:	6 month
Session	:	2022-23

Theory		Practical
Lecture	Торіс	Торіс
1.	Waves: definition, types (mechanical	Familiarization with apparatus (resistor,
	and electromagnetic wave)	rheostat, key, ammeter, voltmeter,
		telescope,
2.	Wave motion- transverse and	microscope etc.)
	longitudinal with examples	
3.	terms used in wave motion like	
	displacement, amplitude, time period,	
	frequency, wavelength, wave velocity;	
4.	relationship	
	wave length	
5	Simple harmonic motion (SHM):	
	definition, examples	
6.	Cantilever: definition, formula of time	
	period (without derivation)	Revision & Checked practical note book
		1
7.	Free, forced and resonant vibrations with	
	examples	
8.	Sound waves: types (infrasonic,	
	audible, ultrasonic) on the basis of	
	frequency, noise,	To find the time period of a simple
		pendulum.
9.	coefficient of absorption of sound,	
	ecno	
10	Reflection and refraction of light with	
10.	laws refractive index	
	idws, foliaetive index	
11.	Lens: introduction, lens formulae (no	
	derivation),	
12.	power of lens and simple numerical	To study variation of time period of a
	problems	simple pendulum with change in length
		of pendulum.
13.	Total internal reflection and its	
	applications,	

14.	critical angle and conditions for total internal reflection	
15.	Superposition of waves (concept only), definition of Interference, Diffraction and Polarization of waves	
16.	Introduction to Microscope, Telescope and their applications	Revision & Checked practical note book
17.	Electric charge, unit of charge,	
18.	conservation of charge	
10	Coulomb's law of electrostatics	
19.	(definition and properties),	To determine and verify the time period of Cantilever.
20.	electric field intensity due to a point charge	
21.	Definition of electric flux, Gauss law (statement and formula)	
22.	Capacitor and capacitance (with formula and unit)	Revision & Checked practical note book
23.	Electric current and its SI Unit, direct an alternating current	
		To verify Ohm's laws by plotting a graph between voltage and current.
24.	Resistance, conductance (definition and unit) Series and parallel combination of resistances	
25.	Ohm's law (statement and formula).	Desiring & Charles I and the last hash
26	Definition of energy level energy hands	Revision & Checked practical note book
27.	Types of materials (conductor, semiconductor, insulator and dielectric) with examples	
		To study colour coding scheme of resistance.
28.	intrinsic and extrinsic semiconductors (introduction only	Revision & Checked practical note book
29.	Introduction to magnetism, type of magnetic materials: diamagnetic, paramagnetic and ferromagnetic materials with examples	To verify laws of resistances in series
30.	Magnetic field, magnetic lines of force, magnetic flux	combination.
31.	Electromagnetic induction (definition)	

32.	introduction, principle, absorption,	
	spontaneous emission	
33.	stimulated emission, population	To verify laws of resistance in parallel
	inversion	combination.
34.	Engineering and medical applications	
	of laser	
35.	Fibre optics: introduction to optical $f_{1}$	
	light group action	Revision & Checking of practical note
	light propagation,	books
36	fiber types (mono-mode	
50.	multi mode)	
27	multi-mode),	
37.	applications in medical,	
	telecommunication and sensors	To find resistance of galvanometer by
		half deflection method.
38.	Nanotechnology: introduction, definition	
	of nanomaterials with examples	
39.	properties at	
	nanoscale,	
		Revision & Checking of practical note
		books
40.	applications of nanotechnology (brief)	To verify laws of reflection of light using
		mirror.
41.	Revision of unit 1	Revision & Checking of practical note
		books
42.	Revision of unit 1	loverify laws of refraction using glass slat
43.	Revision of unit 2	Revision & Checking of practical note
		DOOKS
44	Revision of unit 2	To find the focal length of a concave lens
	Revision of unit 2	using a convex lens
45	Revision of unit 3	Revision & Checking of practical note
101		books
46.	Revision of unit 3	Revision & Checking of practical note
	_	books
47.	Revision of unit 4	Revision & Checking of practical note
		books
48.	Revision of unit 5	Revision & Checking of practical note
		books
49.	Revision of unit 5	Revision & Checking of practical note
		books