Department of Computer Engg.
Govt. Polytechnic for Women Rehan
Distt. – Kangra (H.P.) - 176022

LESSON PLAN

Program Name	Computer Engineering
Subject Name	Applied Physics-II
Subject Code	BS104
Semester	2nd
Subject Teacher Name	Gopal Sharma

Evaluation Scheme

Sr. No.	Subject Name	Study scheme (Hrs/Week)		Marks in Evaluation Scheme					
				Internal Assessment			External Assessment		
		Th	Pr	Th	Pr	Total	Th	Pr	Total
1.	Applied Physics-II	4	4	40	40	80	60	60	120
Reference Books		(i) Text book of Physics,N.C.E.R.T. New Delhi. Eagle's prakashan.R.A.Banwat.							
		(ii) Concept of Physics by H.C.Verma, Engineering physics PV.Naik.							

Course Outcomes (COs)

CO – 1	Describe wave and wave motion, periodic and Simple harmonic motion.
CO – 2	Explain Ultrasonic waves their engineering and medical application.
CO – 3	Differentiate between conductor, semi-conductor and insulator.
CO – 4	Apply the knowledge of diode in rectifier,power adapters and various electronic circuits.

Teaching Plan

Unit No.	Name of Topic	Proposed Date	Actual Date	Remarks
1	Wave motion with examples, generation of vibrating particles.	29/1/24 30/1/24		
	Types of Wave motion – Transverse and Longitudinal wave motion ,velocity, frequency and wavelength of wave. Relationship between wave velocity, frequency and wavelength.	1/2/24 3/2/24 5/2/24 6/2/24		
	SHM: definition, expression for Displacement, velocity, acceleration, Time Period, frequency in S.H.M.	8/2/24 10/2/24 12/2/24		

	Free, Forced and Resonant vibrations with examples. Numerical based on S.H.M.	13/2/23		
	Sound wave,Beats, Doppler effect of sound, apparent frequency, determination of apparent frequency(when source of sound moving towards and away from stationary observer)	15/2/24 17/2/24 19/2/24		
	Acoustic of buildings- Reverberation, reverberation time, echo, noise, co-efficient of absorption of sound,	20/2/24 22/2/24		
	Method to control reverberation time. Simple numerical on reverberation time.	24/2/24 26/2/24		
	Ultrasonics-Introduction of properties, Medical and engineering applications.	27/2/24		
2	Law of reflection and refraction. Refractive index, Power of lens. Magnification of a lens.	29/2/24 2/3/24 4/3/24		
	Total internal reflection and its applications, Critical angle and conditions for total internal reflection.	5/3/24 7/3/24		
	Simple and Compound microscope, simple telescope, Magnifying power of simple telescope.	11/3/24 12/3/24		
	Coherent and non-coherent source of light.	14/3/24		
	Interference of light, superposition principle, constructive and destructive interference.	16/3/24 18/3/24		
3	Coulombs Law, unit charge.	19/3/24		
	Electric flux and Gauss Law, Electric field intensity and electric potential at any point due to a point charge.	21/3/24 23/3/24		
	Capacitance, principle of capacitor, capacitance of parallel plate capacitor, series and parallel combination of capacitors. Effect on capacitance, dielectric break down.	23/3/24 26/3/24 28/3/24		
	Numericals based on combination of capacitors.	30/3/24		
4	Current, Voltage and resistance, potential difference, electric power and electrical energy and its units.	1/4/24		
	Ohm's Law and its experimental verification.	2/4/24		
	Series and parallel combination of resistor, specific resistance effect of temperature on resistance.	4/4/24		
	Kirchhoff's Laws. Numerical based upon	6/4/24		

	combination of resistances.			
	Heating effect of current. Advantages of electrical energy over other form of energy.	8/4/24		
	Concept of pot.difference and E.M.F.	9/4/24		
5	Magnetic field and its units Biot-Savart Law, magnetic field around a current carrying straight conductor.	11/4/24 13/4/24		
	Force on a moving charge and current carrying conductor in magnetic field.	15/4/24		
	Classification of material on the basis of magnetism (Dia, para, ferromagnetic materials)	16/4/24		
	Moving coil Galvanometer, principle, construction and working.	18/4/24		
	Conversion of Galvanometer into ammeter and voltmeter	20/4/24		
6	Energy bands, definition of conductor, semi-conductor, insulator on the basis of band theory of solid.	22/4/24 23/4/24		
	Intrinsic and Extrinsic conductors.	25/4/24		
	P-N junction diode and its characteristics.	29/4/24		
	Diode as rectifier-Half wave and full wave rectifier.	30/4/24		
7	Concept of energy level, ionization, excitation and de-excitation of laser. * Spontaneous and stimulated emission, pumping scheme, population inversion. * Ruby,He-Ne Laser. * Application of Laser.	2/5/24 4/5/24 6/5/24 16/5/24		
	Fibre Optics: * Optical fibre and its types. * Optical fibre materials. * Acceptance angle and numerical aperture. * Light propagation in optical fibre. * Advantages of optical fibre over copper wires in communications. * Applications of optical fibre.	18/5/24 20/5/24 21/5/24 23/5/24 25/5/24		

Assignments

Assignment No	Contents of Syllabus Covered	Proposed Date	Actual Date	Remarks
A-1	Unit-1 and Unit-2, Unit-3	23/02/2024		
A-2	Unit-4 and Unit-5	19/03/2024		
A-3	Unit-6, Unit-7	20/04/2024		

House Test/Class Test

Name of test	Syllabus for Tests	Proposed Date	Actual Date	Remarks
Class Test -1	Unit-1 and Unit-2	As per HPTSB Academic Schedule		
Class Test -2	Unit-3 and Unit-4			
House Test - 1	Unit-1, Unit-2, Unit-3, Unit-4 and Unit-5			

Lab Plan

Sr .No.	Name of Practical	Proposed Date		Actual Date		Remarks
		G1	G2	G1	G2	
1	To determine and verify the Time period of cantilever.	2/2/24 9/2/24	30/1/24 6/2/24			
2	To verify Kirchhoff's current voltage Laws.	16/2/24 23/2/24	13/2/24 20/2/24			
3	To verify Laws of resistances in series and parallel.	1/3/24 8/3/24	27/2/24			
4	To convert a Galvanometer into an Ammeter of a given range.	8/3/24 15/3/24	5/3/24 12/3/24			
5	To convert a Galvanometer into Voltmeter of a given range.	22/3/24	19/3/24			
6	To study characteristics of P-N junction diode.	29/3/24	26/3/24			
7	To study the capacitance of parallel plate capacitor.	5/4/24 12/4/24	2/4/24 9/4/24			
8	To find the focal length of (1) Convex (2) Concave mirror.	19/4/24 26/4/24	16/4/24 23/4/24			
9	To find the velocity of sound wave by Sonometer method.	3/5/24 10/5/24	30/4/24 7/5/24			
10	To measure wavelength of a He-Ne Laser using a diffraction grating.	17/5/24 24/5/24	14/5/24 21/5/24			

(Signature of Teacher)

27/01/2024
(Signature of HOD)

Approved
27.1.24
Principal
Govt. Polytechnic for Women Rehan