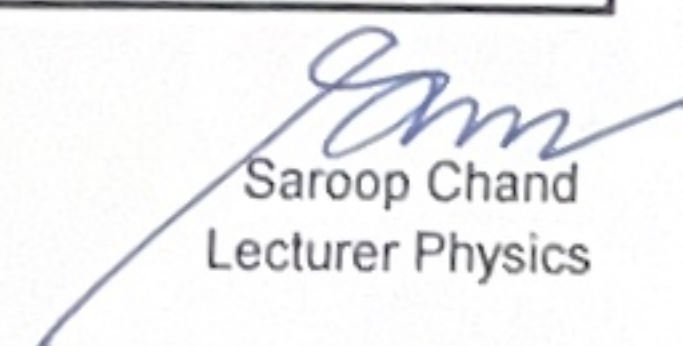




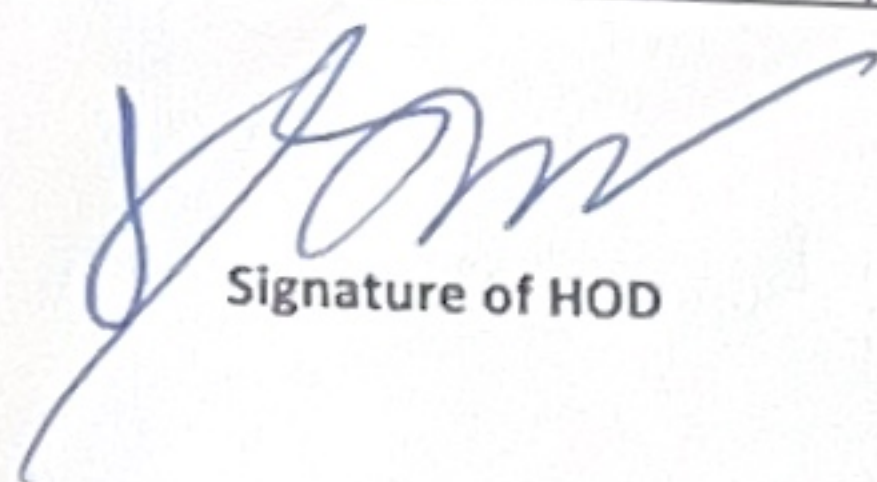
LESSON PLAN

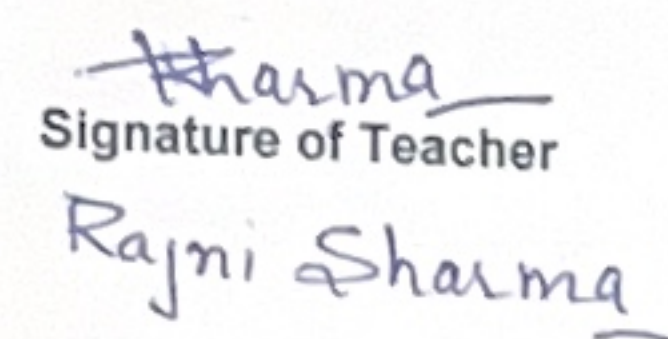
Name of Faculty	Saroop Chand	
Department	Applied Science & Humanities	
Semester	2nd	
Subject	Applied Physics-II	
Lesson Plan for the Duration	Jan, 2024 to May, 2024	
Week	Topic	Theory
1st (29 Jan - 03 Feb.2024)	Wave Motion & Its applications	Wave motion, transverse and longitudinal waves with examples, definitions of wave velocity, frequency and wave length and their relationship, Sound and light waves and their properties, wave equation ($y = r \sin \omega t$) amplitude, phase, phase difference, Principle of superposition of waves and beat formation. Simple Harmonic Motion (SHM): definition, expression for displacement, velocity, acceleration, time period, frequency etc.
2nd (05 Feb.-12 Feb. 2024)	Wave Motion & Its applications	Free, forced and resonant vibrations and their examples. Acoustics of buildings – reverberation, reverberation time, echo, noise, coefficient of absorption of sound, methods to control reverberation time and their applications. Ultrasonic waves – Introduction and properties, engineering and medical applications of ultrasonic.
3rd (13 Feb.-19 Feb. 2024)	Optics	Basic optical laws- reflection and refraction, refractive index, Images and image formation by mirrors, lens and thin lenses, lens formula, power of lens, magnification. Total internal reflection, Critical angle and conditions for total internal reflection, applications of total internal reflection in optical fiber.
4th (20 Feb. -27 Feb. 2024)	Optics	Optical Instruments- simple and compound microscope, astronomical telescope in normal adjustment and their magnifying powers.
5th (28 Feb.-05 March 2024)	Electrostatics	Coulomb's law, unit of charge. Electric field, Electric lines of force and their properties. Electric flux, Electric potential and potential difference, Gauss's law.
6th (06 March-14 March 2024)	Electrostatics	Capacitor and its working, Capacitance and its units. Capacitance of a parallel plate capacitor, Series and parallel combination of capacitors (related numerical), dielectric and its effect on capacitance, dielectric break down
7th (15 March - 21 March 2024)	Current Electricity	Electric Current and its units, Direct and alternating current. Resistance and its units, Specific resistance, Conductance, Specific conductance, Series and parallel combination of resistances. Factors affecting resistance of a wire, carbon resistances and colour coding.
8th (22 March - 30 March 2024)	Current Electricity	Ohm's law and its verification, Kirchhoff's laws. Concept of terminal potential difference and Electro motive force (EMF) Heating effect of current, Electric power, Electric energy and its units (related numerical problems), Advantages of Electric Energy over other forms of energy.
9th (01 April -06 April 2024)	Electromagnetism	Types of magnetic materials: dia, para and ferromagnetic with their properties. Magnetic field and its units, magnetic intensity, magnetic lines of force, magnetic flux and units, magnetization.
10th (08 April -18 April 2024)	Electromagnetism	Lorentz force (force on moving charge in magnetic field), Force on current carrying conductor. Moving coil galvanometer; principle, construction and working, Conversion of a galvanometer into ammeter and voltmeter.
11th (19 April - 25 April 2024)	Semiconductor Physics	Energy bands in solids, Types of materials (insulator, semi-conductor, conductor), intrinsic and extrinsic semiconductors. p-n junction, junction diode and V-I characteristics.
12th (26 April - 02 May 2024)	Semiconductor Physics	Diode as rectifier – half wave and full wave rectifier (centre taped). Photocells, Solar cells; working principle and engineering applications.
13th (03 May - 09 May 2024)	Modern Physics	Lasers: Energy levels, ionization and excitation potentials; spontaneous and stimulated emission; population inversion, pumping methods, optical feedback. Types of lasers; Ruby, He-Ne and semiconductor, laser characteristics, engineering and medical applications of lasers.
14th (20 May - 25 May2024)	Modern Physics	Fiber Optics: Introduction to optical fibers, light propagation, acceptance angle and numerical aperture, fiber types, applications in; telecommunication, medical and sensors.


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Saroop Chand
Lecturer Physics

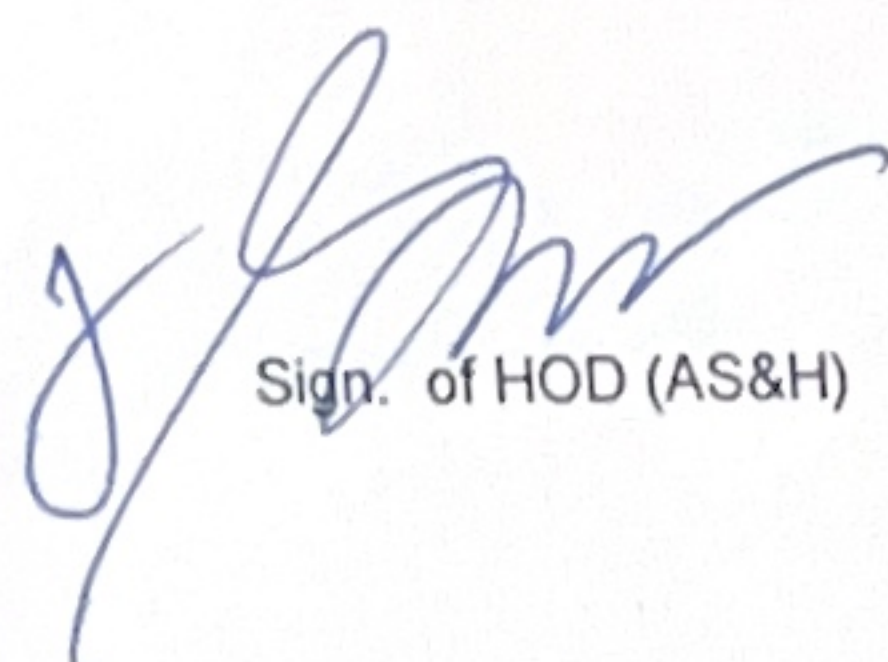
Name of Faculty		LESSON PLAN	
Department		Rajni Sharma	
Semester		Applied Science & Humanities	
Subject		2nd	
Lesson Plan for the Duration		Mathematics - II	
Week		29 Jan. - 25 May 2024	
		Theory	
1st (29 Jan - 03 Feb. 2024)	Determinants	Determinants: Elementary properties of determinants upto 3rd order, consistency of equations, Crammer's rule.	
2nd (05 Feb.-12 Feb. 2024)	Matrices	Matrix: Algebra of matrices, Inverse of a matrix, matrix	
3rd (13 Feb.-19 Feb. 2024)	Matrices	Matrix: Matrix inverse Method to solve a system of linear equations in 3 variables.	
4th (20 Feb. -27 Feb. 2024)	Integral Calculus	Intergration as inverse operation of differentiation.	
5th (28 Feb.-05 March 2024)	Integral Calculus	Simple intergration by substitution, by parts and by partial fraction(for linear factors only.	
6th (06 March-14 March 2024)	Integral Calculus	Use of formulas for solving problems. When m, n are positive integers. $\int_0^{\pi/2} \sin^m x \cdot \cos^n x dx$	
7th (15 March - 21 March 2024)	Integral Calculus	Applications for: (i) simple problems on evaluation of area bounded by a curve and axis.	
8th (22 March - 30 March 2024)	Integral Calculus	Applications for: (ii) Calculation of volume of a solid formed by revolution of an area about axis.	
9th (01 April -06 April 2024)	Co-ordinate Geometry	Co-ordinate Geometry Equations of straight lines in various standard forms (without proof), intersection of two straight lines.	
10th (08 April -18 April 2024)	Co-ordinate Geometry	Angle between two lines .Parallel and perpendicular lines, Perpendicular Distance formula	
11th (19 April - 25 April 2024)	Co-ordinate Geometry	General equation of a circle and its characteristics. To find the equation of a circle given: center and radius, Three points lying on it, coordinates of end points of a diameter.	
12th (26 April - 02 May 2024)	Co-ordinate Geometry	Definition of conics(parabola, Ellipse, Hyperbola) their standard equations without proof.	
13th (03 May - 09 May 2024)	Co-ordinate Geometry	Problems on conics when their foci, directrices or vertices are given.	
14th (20 May - 25 May 2024)	Differential Equations	Solution of first order and first degree differential equation by variable separation	

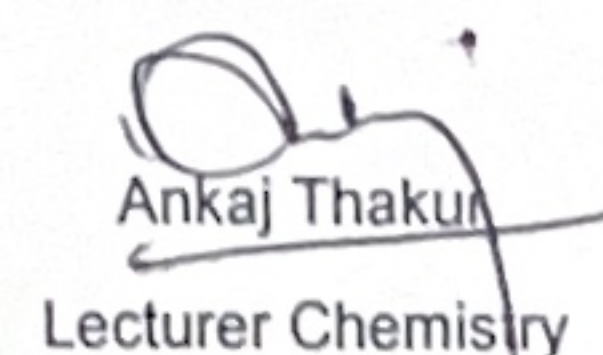

Signature of HOD


Signature of Teacher
Rajni Sharma

LESSON PLAN

Faculty	Mrs. Ankaj Thakur	
	Applied Science & Humanities	
	2nd	
	Environmental Science	
Duration	29 Jan. - 25 May 2024	
Week	Theory	
1-03 Feb.2024)	Topics	Structure of Ecosystem,Biotic & Abiotic components, Food Chain & Food Web,Aquatic & Terrestrial Ecosystem.
4-12 Feb. 2024)	Topics	Carbon,Nitrogen,Phosphorus cycle,Global Warming-Causes,Effects,Process,GreenHouse Effect,Ozone Depletion.
7-19 Feb. 2024)	Topics	Pollution & Pollutants,Natural & Manmade Sources of Air Pollution,Air Pollutants,Types,Particulate Pollutants,Effects & Control.
10-20 Feb. -27 Feb. 2024)	Topics	Gaseous Pollution Control,Absorber,Catalytic Converter,Effects of Air Pollution due to Refrigerants.
13-28 Feb.-05 March 2024)	Topics	Noise Pollution,Sources of Pollution,Measurement of Pollution Levels,Effects of Noise Pollution,Noise Pollution Rules 2000.
16-06 March-14 March 2024)	Topics	Sources of Water Pollution,Types of Water Pollutants,Characteristics of Water Pollutants,Turbidity,Ph,Total suspended solids,Total Solids BOD & COD.
19-15 March - 21 March 2024)	Topics	Waste Water Treatment,Primary Methods: Sedimentation,froath Floating,Secondary Methods: Active Sludge Treatment,Trickling Filter,Bioreactor,Tertiary Methods: Membrane Separation Technology,Reverse Osmosis.
22-22 March - 30 March 2024)	Topics	Causes,Effects & Preventive measures of Soil Pollution,Cause,Excessive use of fertilizers,Pesticides,Insecticides,Irrigation,E-Waste.
25-9th (01 April -06 April 2024)	Topics	Solar Energy:Basics of solar Energy,Flat Plate Collector,Theory of Flat Plate Collector,Importance of coating,Advanced Collector,Solar Pond,Solar Water Heater,Solar Dryer,Solar Stills.
28-10th (08 April -18 April 2024)	Topics	Biomass:Biomass as energy source,Thermal Characteristics of biomass as fuel,Anaerobic Digestion,Biomass Production Mechanism,Utilization & Storage of Biomass.
31-11th (19 April - 25 April 2024)	Topics	Wind Energy:Current Status & Future Prospectus of Wind Energy,Wind energy in India,Environmental Benefits & Problems of Wind Energy
3-12th (26 April - 02 May 2024)	Topics	New Energy Sources,Need of New Sources,Different types of Energy Sources,Applications of Hydrogen Energy,Ocean Energy,Tidal Energy Conversion,Geo Thermal Energy.
6-13th (03 May - 09 May 2024)	Topics	Solid Waste Generation-Sources & Characteristics of Municipal solid waste,E-Waste,Bio- Medical Waste,Metallic Waste,Non Metallic Waste from Industries.
9-14th (20 May-25 May 2024)	Topics	Collection & Disposal:MSW(3R,Principal,energy recovery,sanitary landfill,Hazardous,Waste Water Quality Act 2004,Air Pollution control act 1981,Water Pollution Act 1996,Structure & Role of Central & State Pollution Control Board.
	Topics	Concept of Carbon Credit,Carbon Footprint,Environmental management in Fabrication Industry,ISO14000: Implementation in Industries,Benefits.


Sign. of HOD (AS&H)


Ankaj Thakur
Lecturer Chemistry