GOVT. POLYTECHNIC SUNDERNAGAR
Session - 27th Jan.2025 to 29th May 2025

LESSON PLAN
Name of the Teacher : Suniti Rani
Branch: Comp.Engg. (2nd Sem.)
Subject: Mathematics-II

S. No.	Month	Date	Week	Unit	Name of Chapter	Content to be taught	Remark
1	January & February	27,29,30, 31,1	1st	1	Determinants	Def.of Det., Minors, co-factors & Laplace's Expansion (Ex-1.1) Properties of Det. (Ex-1.2)	
2	February	3,5,6,7	2nd	1	Matrices	Solution of the system of equations by Cramer's Rule (Ex-1.3) Matrix , Algebra of Matrix , (Ex- 2.1)	
3	February	10,13,14, 15	3rd	1	Matrices	Multiplication of Matrices , Transpose of Matrix ,Symmetric & Skew Symm. Matrices (Ex-2.2)	
4	February	17,19,20, 21,22	4th	1	Matrices	Adjoint of Matrix, Inverse of Matrix,Solution of System of Linear Equations in three variables (Ex-2.3)	
5	February & March	24,27,28, 1	5th	2	Integral Calculus	Fundamental Integrals(Ex 1.1), Int.by Substitution (Ex-2.1)	
6	March	3,5,6,7	6th	2	Integral Calculus	(Ex-2.2), Integration by Parts Ex-3.1	
7	March	10,12,13, 15	7th	2	Definite Integral	Some Special Methods (Ex 2.3) , Int. By Partial Fractions (Ex-4.1)	
8	March	17,19,20, 21,22	8th	2	Definite Integral	Standard Formulae (Ex-4.2), Area of the Curve,Revision of Some Imortant Questions (CLASS TEST -1)	
9	March	24,26,27, 28,29	9th	3	Definite Integral & Straight Line	Volume Under the Curve(Ex-4.3) Equation of a St. Line in Different Forms (Ex-1.1)	
10	April	2,3,4,5	10th	3	Straight Line	Angle B/N Two Line , Any line parallel /perpendicular to the St. Line(Ex-1.2)	
11	April	7,9,10,11	11th	3	The Circle	The Equation of a Circle in Standard Form , Central Form & General Form (Ex-2.1)	
12	April	16,17,19	12th	3	The Circle	Revision (CLASS TEST-2)	
13	April	21,23,24, 25,26	13th	3	The Circle, Conics (Parabola)	The Equation of a Circle in Diameter Form (Ex-2.1), Equation of Parabola (Ex-3.1)	
14	April & May	28,30,1,2, 3	14th	3	Conics (Ellipse & Hyperbola)	Equation of Ellipse (Ex-3.2) , Equation of Hyperbola (Ex-3.3)	
15	May	5,7,8,9	15th		Revision	Revision of Previous Question Papers	
16	May	14,15,16, 17	16th		HOUSE TEST	HOUSE TEST	
17	May	19,21,22, 23,24	17th	4	Differential Equations	Order & Degree of Diffrential Equation Ex(1.1)	
18	May	26,28	18th	4	Differential Equations	Order & Degree of Diffrential Equation Ex(1.2)	

Teacher's Signature

HOD (A S & H)

LESSON PLAN

Program Name	COMPUTER ENGG
Course/Subject Name	Applied Physics-II
Course/Subject Code	BS-104 & BS-106
Course/Subject Coordinator Name	Bharti Choudhary

Evaluation scheme

S.No.	Subject Name	Study scheme · (Hrs/Week)	Marks in evaluation scheme			
			Internal Assessment		External Assessment	
			Theory	Practical	Theory	Practical
I.	Applied physics-II & Applied Physics-II lab	TH |3+1(DCS) + 2 (Lab)	40	40	60	60
Reference books			(i) Fundamental of Physics By Halliday/Resnick/Walker			
			(ii) New simplified Physics by S.L.Arora			
			(iii) Applied Physics, Vol. I and Vol. II, TTTI Publications, Tata McGraw Hill, Delhi			
			(iv) Engineering Physics by DK Bhattacharya & Poonam Tandan; Oxford University Press, New Delhi			

Course Outcomes: After the completion of the course the student will be able to
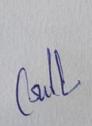
CO1	Describe waves and wave motion, periodic and simple harmonic motions and solve simple problems.
CO2	Explain ultrasonic waves and engineering, medical and industrial applications of Ultrasonic. Apply acoustics principles to various types of buildings for best sound effect.
CO3	Describe the refractive index of a liquid or a solid and will be able to explain conditions for total internal reflection.
CO4	Define capacitance and its unit, explain the function of capacitors in simple circuits, and solve simple problems.
CO5	Differentiate between insulators, conductors and semiconductors, and define the terms: potential, potential difference, electromotive force.
CO6	Express electric current as flow of charge, concept of resistance, measure of the parameters: electric current, potential difference, resistance.
CO7	Explain the operation of appliances like moving coil galvanometer, simple DC motors.
CO8	Illustrate the conditions for light amplification in various LASER and laser based instruments and optical devices.
CO9	Appreciate the potential of optical fiber in fields of medicine and communication.

Teaching Plan:

Lecture No.	Topic Covered	Actual Date	Remarks
1	**UNIT - 1: Wave motion and its applications-** Wave motion, transverse and longitudinal waves with examples.		
2	Definitions of wave velocity, frequency and wavelength and their relationship		
3	Sound and light waves and their properties		
4	Wave equation ($y = r \sin \omega t$) amplitude, phase, phase difference,Principle of superposition of waves and beat formation		
5	Simple Harmonic Motion (SHM): definition, expression for displacement, velocity		

	6	Acceleration, time period, frequency of SHM, Free, forced and resonant vibrations and their examples.		
	7	Acoustics of buildings – reverberation, reverberation time, echo, noise, coefficient of absorption of sound		
	8	Methods to control reverberation time and their applications.		
	9	Ultrasonic waves – Introduction and properties, engineering and medical applications of ultrasonic.		
	10	UNIT - 2: Optics -Basic optical laws- reflection and refraction		
	11	Refractive index, Images and image formation by mirrors.		
	12	Lens and thin lenses, lens formula, power of lens, magnification		
	13	Total internal reflection, Critical angle and conditions for total internal reflection,applications of total internal reflection in optical fiber.		
	14	Optical Instruments- simple and compound microscope		
	15	Astronomical telescope in normal adjustment and their magnifying power		
	16	UNIT - 3: Electrostatics- Coulomb's law, unit of charge.		
	17	Electric field, Electric lines of force and their properties.		
	18	Electric flux, Electric potential and potential difference		
	19	Gauss's law		
	20	Capacitor and its working, Capacitance and its units. Capacitance of a parallel plate capacitor		
	21	Series and parallel combination of capacitors (related numerical)		
	22	Dielectric and its effect on capacitance, dielectric break down		
	23	UNIT - 4: Current Electricity- Electric Current and its units. Direct and alternating current.		
	24	Resistance and its units, Specific resistance, Conductance, Specific conductance,		
	25	Series and parallel combination of resistances.		
	26	Factors affecting resistance of a wire, carbon resistances and colour coding.		
	27	Ohm's law and its verification		
	28	Kirchhoff's laws, Concept of terminal potential difference and Electromotive force (EMF)		
	29	Heating effect of current, Electric power, Electric energy and its units (related numerical problems)		
	30	Advantages of Electric Energy over other forms of energy.		
	31	UNIT - 5: Electromagnetism- Types of magnetic materials: dia. para and ferromagnetic with their properties.		
	32	Magnetic field and its units, magnetic intensity,magnetic lines of force, magnetic flux and units, magnetization		
	33	Lorentz force (force on moving charge in magnetic field), Force on current carrying conductor.		
	34	Moving coil galvanometer; principle, construction and working		
	35	Conversion of a galvanometer into ammeter and voltmeter.		
	36	UNIT - 6: Semiconductor Physics-Energy bands in solids, Types of materials (insulator, semiconductor, conductor)		
	37	Intrinsic and Extrinsic semiconductors. p-n junction		
	38	Junction diode and V-I characteristics		
	39	Diode as rectifier – half wave and full wave rectifier (center taped).		
	40	Photocells, Solar cells; working principle and engineering applications.		

41	**UNIT - 7: Modern Physics-** Lasers: Energy levels, ionization and excitation potentials; spontaneous and stimulated emission
42	Population inversion, pumping methods, optical feedback.
43	Types of lasers; Ruby, He-Ne Laser
44	Semiconductor laser and engineering and medical applications of lasers. laser characteristics
45	Fiber Optics: Introduction to optical fibers, light propagation. acceptance angle and numerical aperture
46	Fiber types, applications in; telecommunication. medical and sensors.

Assignments:

Assignment serial	Contents of syllabus covered	Proposed date	Actual date	Remarks
A-1	Wave motion and its applications & Optics			
A-2	Electrostatics & Current electricity			
A-3	Semiconductor & Modern Physics			

House Test/Class Test:

House/Class Test	Contents of syllabus covered	Proposed date	Actual date	Remarks
CT-I	30% of the syllabus	3rd week of March		
CT-II	Next 30% of the syllabus	3rd week of April		
House Test	80% of the syllabus	2nd week of May 2025		

Lab Plan:

Exp. No.	Name of experiment	Actual date G-1	Actual date G-2	Remarks
1	To determine and verify the time period of cantilever.			
2	To verify laws of reflection from a plane mirror/ interface.			
3	To verify laws of refraction (Snell's law) using a glass slab.			
4	To verify Ohm's law by plotting graph between current and potential difference.			
5	To verify laws of resistances in series and parallel combination.			
6	To draw V-I characteristics of a semiconductor diode (Ge,Si) & determine its knee voltage			
7	To find resistance of a galvanometer by half deflection method.			
8	To convert a galvanometer into an ammeter.			
9	To convert a galvanometer into a voltmeter.			

(Signature of Teacher)

(Bharti Choudhary)

(Signature of HOD)

Govt. Polytechnic Sundernagar (H.P.)
Lesson Plan Theory

Semester : 2nd Semester Computer Engg.(Diploma)
Session :2025(Feb-July,2025)

Branch: Computer Engineering
Subject : Introduction to IT System
Teacher : Er. Sudhir Sen

Chapter	Month	Week	Date	Chapter Discription	Detail of Contents	Remarks
1	January	5th	29,30	UNIT 1: Basics of Computer System	Block Diagram of Computer System, General Understanding of various hardware components- CPU, Memory, Display Devices (CRT and LCD Monitors), Keyboard,	
2	Ferbury	2nd	5,6		Display Devices (CRT and LCD Monitors), Keyboard, Mouse, HDD	
		3rd	12,13		Software and its types, Operating System: Definition, types and function of Operating System	
		4th	19,20	UNIT 2: Software Concepts	Booting the system (Cold and warm)	
		5th	26,27		Class test 1, Discussion regarding class test 1	
3	March	2nd	5,6	UNIT 3: Internet Skills	Understanding the terminology of internet-web browser, search engine, world wide web,	
		3rd	12,13		**Class Test I**, Network, Types of Networks, Various Topologies.	
		4th	19,20		Awareness about the government portals (state portals and national portals) and institute portals.	
		5th	26,27		Introduction to Microsoft, MSWord	
4	April	1st	2,3	UNIT 4: Working with MS-Word	File Management (Creating new document, saving a document, printing a document)	
		2nd	9,10		Editing a document, use of Home toolbar, **Class-Test II**	
		3rd	16,17		Insert, Design Layout ribbons.	
		4th	23,24,30		Working with spread sheets, entering data into the cells, merging cells, formula bar, usage of simple Math functions	
5	May	1st	1	UNIT 5: Working with MS-Excel	sum,average, min, max, percentage, round, floor, ceiling, conditional formatting of cells. ,**House Test**	
		2nd	7,8			
		3rd	14,15	UNIT 6: Information Security	Concept of online frauds, threats of online crime, virus attacks and use of antivirus.	
		4th	21,22			
		5th	28		Revesion of Question Papers	

Session Closed on 29.5.2025

Signature of Teacher

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Govt. Polytechnic Sundernagar (H.P.)
Demonstration Plan Practical

Semester : 2nd Semester Computer(Diploma)

Session :2025(Feb-July,2025)

Theory=Nil Pracical= 4*2

Branch: Computer Engineering

Subject :Introduction to IT Lab.

Teacher : Er. Sudhir Sen

Chapter	Month	Week	Date	Detail of Contents	Remarks
1	Jan	5th	27,28,30,31	To identify the various hardware components of computer system.	
	Ferbury	2nd	3,4,6,7	To assemble hardware components of Computer System.	
		3rd	10,11,13,14	To install Windows OS on computer system.	
		4th	17,18,20,21	To study the various features offered on the desktop, creating new folder and new file on the desktop.	
		5th	24,25,27,28	To work on different web browsers(google chrome , internet explorer), setting up default homepage on browser and study the various settings available.	
2	March	2nd	3,4,6,7	To open search engines (google and yahoo) and search different information using the search engines. Creating an e-mail Account.	
		3rd	10,11,13,14	Visit various e-governance/digital India Portals and understanding the services offered.	
		4th	17,18,20,21	Opening, creating and saving a document, locating files, copying contents in some different file(s), protecting files, giving password protection for a file, Setting margins, tab setting, ruler, indenting, Entering text, cut, copy, paste using tool- bars.	
		5th	24,25,27,28	Formatting a document, Creating and editing tables, mail-merge.	
3	April	1st	1,2	Working on MS – EXCEL- Creating a worksheet in Excel. Copy, Move and Merge the cells and Use various Formatting features.	
		2nd	5,6,8,9	Using formula and functions prepare worksheet for storing subject marks of ten students and perform the following:	
		3rd	12,13,15,16	☐ Calculate the student wise total and average.☐	
		4th	19,20,22,23	☐ Calculate the subject wise total and average.☐	
		5th	26,27,29,30	☐ Calculate the overall percentage and also individual percentage of the student.☐	
4	May	1st	1,2	☐ Create a chart for the above.☐	
		2nd	5,6,8,9	☐ Calculate the subject wise total and average.☐	
		3rd	12,13,15,16	☐ Calculate the subject wise total and average.☐	
		4th	19,20,22,23	Awareness/Excess of the government portals (state portals and national portals) and institute portals.	
		5th	26,27	**Doubt Session, Session Closed on 29.5.2025**	

Signature of Teacher

Signature

Unit	Lecture	Topic	Remarks
		Lesson Plan : Jan-Jun 2025	
		Sub: FEEE 2nd Semester	
		Branch: Computer	
1	1	Passive Active Components	
	2	Resistances	
	3	Capacitors	
	4	Inductors	
	5	Diodes, Transistors	
	6	FET, MOS and CMOS and their Applications	
	7	Signals: DC/AC, voltage/current, periodic/non- periodic signals	
	8	average, rms, peak values	
	9	different types of signal waveforms	
	10	Ideal/non-ideal voltage/current sources	
	11	independent/dependent voltage sources	
	12	independent/dependent current sources	
2	13	Operational Amplifiers-Ideal Op-Amp	
	14	Practical op amp	
	15	Open loop and closed loop configurations	
	16	Open loop and closed loop configurations	
	17	Application of Op-Amp as amplifier	
	18	Application of Op-Amp as adder	
	19	Application of Op-Amp as differentiator	
	20	Application of Op-Amp as integrator.	
3	21	Introduction to Boolean Algebra	
	22	Electronic Implementation of Boolean Operations	
	23	Gates-Functional Block Approach	
	24	Gates-Functional Block Approach	
	25	Storage elements-Flip Flops-A Functional block approach	
	26	Storage elements-Flip Flops-A Functional block approach	
	27	Counters	
	28	Counters	
	29	Introduction to digital IC Gates (of TTL Type)	
	30	Introduction to digital IC Gates (of TTL Type)	
4	31	EMF, Current	
	32	Potential Difference, Power and Energy	
	33	M.M.F, magnetic force	
	34	permeability, hysteresis loop	
	35	reluctance, leakage factor	
	36	BH curve	
	37	Electromagnetic induction, Faraday's laws ofelectromagnetic induction	
	38	Lenz's law	
	39	Dynamically induced emf	
	40	Statically induced emf	
	41	Equations of self and mutual inductance	
	42	Analogy between electric and magneticcircuits	
5	43	Cycle, Frequency, Periodic time	
	44	Amplitude, Angular velocity, RMS value	
	45	Average value, Form Factor Peak Factor, impedance	
	46	phase angle, and power factor	
	47	Mathematical and phasor representation of alternating emf and current	
	48	Mathematical and phasor representation of alternating emf and current	
	49	Voltage and Current relationship in Star and Delta connections	
	50	Voltage and Current relationship in Star and Delta connections	

		51	A.C in resistors, inductors and capacitors	
		52	A.C in resistors, inductors and capacitors	
		53	A.C in R-L series, R-C series, R-L-C series and parallel circuits	
		54	A.C in R-L series, R-C series, R-L-C series and parallel circuits	
		55	A.C in R-L series, R-C series, R-L-C series and parallel circuits	
		56	Power in A. C. Circuits, power triangle.	
6		57	General construction and principle of core type of transformers	
		58	General construction and principle of shell type of transformers	
		59	Emf equation	
		60	transformation ratio of transformer	
		61	Auto transformers	
		62	Basic principle of Electromechanical energy conversion.	
		63	Revision	
		64	Revision	

GOVT. POLYTECHNIC SUNDER NAGAR

LESSON PLAN : ENGINEERING MECHANICS (SESSION: JAN.-JULY. 2025)

COMPUTER ENGINEERING (SEMESTER - 2ND)

S.NO.	MONTH	WEEK	DATE	CONTENT (THEORY)	REMARKS
1	JAN.	5TH	27,28,30	Unit – I Basics of mechanics and force system Significance and relevance of Mechanics, Applied mechanics,	8 (HOLIDAY)
2	FEB.	1st	1	Statics, Dynamics.	
		2nd	3,4,6,8	Space, time, mass, particle, flexible body and rigid body.	
		3rd	10,11,13, 15	Scalar and vector quantity, Units of measurement (SI units) -	
		4th	17,18,20, 22	Fundamental units and derivedunits.Force – unit, representation as a vector and by	
		5th	24,25,27	Unit– II Equilibrium	
3	MARCH	1st	1	Equilibrium and Equilibrant, Free body and Free body diagram, Analytical and	8 (HOLIDAY)
		2nd	3,4,6,8	graphical meth-ods of analyzing equilibrium.	
		3rd	10,11,13, 15	Lami's Theorem – statement and explanation, Application for various engineering	CLASS TEST-1
		4th	17,18,20, 22	Unit– III Friction Friction and its relevance in engineering, types and laws of	
		5th	24,25,27,29	friction, limiting	
4	APRIL	1st	1,3,5	equilibrium, limiting friction, co-efficient of friction, angle of	
		2nd	7,8,10,12	friction, angle of repose, relation between co-efficient of friction and angle of friction.	12 (HOLIDAY)
		3rd	14,15,17, 19	Unit– IV Centroid and centre of gravity Centroid of geometrical plane figures (square, rectangle, triangle, circle, semi-circle, quarter circle).	14,15 (HOLIDAY) & CLASS TEST-II
		4th	21,22,24, 26	Centroid of composite figures composed of not more than two geometrical figures.	
		5th	28,29	Centre of Gravity of simple solids (Cube, cuboid, cone,	29 (HOLIDAY)
5	MAY	1st	1,3	cylinder, sphere, hemisphere)	
		2nd	5,6,8,10	Unit – V Simple lifting machine Simple lifting machine, load, effort, mechanical advantage, applications and	10 (HOLIDAY) & HOUSE TEST
		3rd	12,13,15, 17	advantages. Velocity ratio, efficiency of machines, law of machine.	12 (HOLIDAY)
		4th	19,20,22, 24	Ideal machine, friction in machine, maximum Mechanical advantage and efficiency,	
		5th	26,27,29	reversible and non-reversible machines, conditions for	29 (HOLIDAY)

VIRENDER PAUL
(Lecturer Mech. Engg)

Farah Naaz Kazmi
(HOD Mech. Engg.)

HOD (ME)

GOVT. POLYTECHNIC SUNDER NAGAR
LESSON PLAN

W.E.F. 27 JAN. 2024 - 29 MAY 2025

SUBJECT : ENGINEERING MECHANICS (LAB)

TRADE: COMPUTER ENGINEERING

SEMESTER :- 2ND

S. NO	MONTH	WEEK	DATE G-II	DATE G-I	CONTENT	REMARKS
1	JAN	5th	28	30	To study various equipments related to Engineering Mechanics.	
2	FEB	1st	4	6	To study various equipments related to Engineering Mechanics.	
		2nd	11	13	To find the M.A., V.R., Efficiency and law of machine for Differential Axle and Wheel.	
		3rd	18	20	To find the M.A., V.R., Efficiency and law of machine for Differential Axle and Wheel.	
		4th	25	27	To find the M.A., V.R., Efficiency and law of machine for Simple Screw Jack.	
3	MARCH	1st	4	6		
		2nd	11	13	Derive Law of machine using Worm and worm wheel.	1st CLASS TEST
		3rd	18	20	Derive Law of machine using Worm and worm wheel.	
		4th	25	27	Determine resultant of concurrent force system applying Law of Polygon of forces using force table.	
4	APRIL	1st	1	3	Determine resultant of concurrent force system graphically.	
		2nd	8	10	Determine resultant of parallel force system graphically.	2nd CLASS TEST
		3rd	15	17	Verify Lami's theorem.	
		4th	22	24	Study forces in various members of Jib crane.	
		5th	29		Study forces in various members of Jib crane.	
5	MAY	1st	6	1	Determine support reactions for simply supported beam.	HOUSE TEST
		2nd	13	8	Obtain support reactions of beam using graphical method.	
		3rd	20	15	Determine coefficient of friction for motion on horizontal and inclined plane.	
		4th	27	22	Determine centroid of geometrical plane figure.	
		5th		29	Determine centroid of geometrical plane figure.	

LOVE KISHORE
Lect. Mech.Engg.

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(M.E)

LESSON PLAN

Program Name	Diploma (Auto Engg., Archi Asst., Civil Engg., Computer Engg. & Electrical Engg)
Course/Subject Name	Environmental Science
Course/Subject Code	AU102(Theory)
Course/Subject Coordinator Name	Mrs. Puja Verma

Evaluation scheme

S.No.	Subject Name	Study Scheme (Hrs/Week)	Marks in evaluation scheme			
			Internal Assessment		External Assessment	
			Theory	Practical	Theory	Practical
1.	Environmental Science	2(Theory)	40	-	60	-

Reference books		
	(i)	S.C Sharma & M.P. Poonia, Environmental Studies, Khanna Publishing House, New Delhi
	(ii)	C.N.R Rao, Understanding Chemistry, University Press (India) Pvt. Ltd. 2011
	(iii)	Nazaroff, William, Cohen,Lisa , Envir Engi. Sci. Willy New York, 2000, ISBN10: 0471144940
	(iv)	OP Gupta, Elements of Environmental Pollution Control, Khanna Publishing House New Delhi
	(v)	Keshav Kant , Air Pollution and Control, Khanna Publishing House, New Delhi (2018)
Open Source Software and Website Address	(i)	www.eco-prayer.org
	(ii)	www.cpcp.nic.in
	(iii)	www.indianenvironmentalportal.org.in

Course Outcomes: After the completion of the course the student will be able to:

CO1	Understand the ecosystem and terminology and solve various engineering problems by applying ecosystem knowledge to produce eco friendly products.
CO2	Understand the suitable air, extent of noise pollution , and control measure and acts.
CO3	Understand the water and soil pollution , and control measure and acts.
CO4	Understand different renewable energy resources and use efficient process of harvesting.
CO5	Understand solid waste management , ISO 140000 & environmental management.

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Teaching Plan:

Lecture No.	Name of topic	Actual date	Remarks
1	**Unit-1 Ecosystem:** Structure of ecosystem, biotic and abiotic component.		
2	Food chain and food web, Aquatic and terrestrial ecosystem (lentic and lotic)		
3	Carbon, nitrogen, sulphur and phosphorus cycle.		
4	Global warming (cause, effect and process), green house effect and ozone depletion.		
5	**Unit-2 Air and Noise Pollution:** Pollution and pollutant (definition), source of air pollution(natural and man made. Air pollutant (types).		
6	Particulate pollutants: Effects and control (Bag filter, cyclone separator & electrostatic precipitator).		
7	Gaseous pollution control (Absorber, catalytic converter).		
8	Effects of air pollution due to refrigerants, I.C, Boiler. Noise Pollution (Source).		
9	Noise Pollution (Measurement and effects),Noise Pollution Rules 2000 (Regulation and control)		
10	**Unit-3 Water and Soil Pollution:** Water pollution(Source), water pollutants types & Characteristics (turbidity, pH, total suspended solids (definition and calculation)).		
11	Water pollutants Characteristics BOD and COD (definition and calculation)).		
12	Waste water treatment (Primary methods: sedimentation & froth floatation).		
13	Secondary methods: Activated Sludge treatment, trickling filter and bioreactor)		
14	Waste water treatment (Tertiary methods: membrane separation technology and RO (reverse osmosis))		
15	Soil pollution (Causes, effect and preventive measure), causes: excessive use of fertiliser, pesticite and insecticide, irrigation and e-waste.		
16	**Unit-4 Renewable Source of energy:** Solar energy (basics).Theory of Flat plate collector (liquid & air).		
17	Importance of coating, advanced collector, solar(pond, water heater, dryer &stills)		
18	Biomass(as energy source, thermal characteristics as fuel, anaerobic digestion). Biogas (production mechanism & utilization and storage).		
19	Wind energy (current status and future prospects, environmental benefits and problems), Wind energy in India.		
20	New energy sources (Need, types), Applications (Hydrogen energy, ocean energy, tidal energy).		
21	Geothermal energy (Concept, origin and power plants)		

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22	**Unit-5 Solid waste management, ISO 14000 & environmental management:** Solid waste source & characteristics (Municipal, e waste, biomedical).
23	Industries metallic and non metallic waste(lubricants, plastic and rubber).
24	Collection & disposal : MSW(3R, principles, energy recovery, sanitary landfill), Hazardous Waste.
25	Air quality act 2004, air pollution control act 1981. Water pollution & control act 1996.
26	Structure and role of central and state pollution control board. Carbon credit concept, carbon footprint.
27	Environmental management in fabrication industry.
28	ISO 14000: Implementation in industry and benefits.

Assignments:

Assignment serial	Contents of syllabus covered	Proposed	Actual date	Remarks
A-1	Ecosystem, Air and noise Pollution	2nd week of March 2025		
A-2	Water and Soil Pollution, Renewable Source of Energy	2nd Week of April 2025		
A-3	Solid Waste Management, ISO 14000 & Environmental management	1st Week of May		

House Test/Class Test:

House/Class Test	Contents of syllabus covered	Proposed/ Academic Calander	Actual date	Remarks
CT-I	30% of the syllabus	3rd Week of March 2025		
CT-II	Next 30% of the syllabus	3rd Week of April 2025		
House Test	80% of the syllabus	2nd Week of May 2025		

$\frac{3}{3}$

Signature of Teacher
27/1/2025
(PUSA VERMA)

HOD(AS&H)
(Sh. Sushil Patial)