GP L&S at Udaipur,camp at S.Nagar

PLANNING OF THEORY CONTENT FOR THE PERIOD 29TH JANUARY ,2024 TO 25TH MAY,2024

DEPARTMENT : APPLIED SCIENCES AND HUMANITIES **2 Hrs/Week**

COURSE : Diploma **SUBJECT:ENVIRONMENT SCIENCE (AU-102)**

Week	Date		Content Planned	Remarks
1	31-01-2024	**Ecosystem**	Structure of ecosystem, Biotic & Abiotic components Food	
2	01-02-2024		food web Aquatic (Lentic and Lotic) and terrestrial ecosystem Carbon, Nitrogen	
3	07-02-2024		Sulphur, Phosphorus cycle. Global warming -Causes, effects, process, Green House Effect, Ozone depletion.	
3	08-02-2024	**Air and, Noise Pollution**	Definition of pollution and pollutant, Natural and manmade sources of air pollution (Refriger- ants, I.C., Boiler) ,Air	
4	14-02-2024		Particulate Pollutants: Effects and control (Bag filter, Cyclone separator, Electrostatic Precipitator).	
4	15-02-2024		Gaseous Pollution Control: Absorber, Catalytic Converter, Effects of air pollution due to Refrigerants, I.C., Boiler.	
5	21-02-2024		Noise pollution: sources of pollution, measurement of pollution level, Effects of Noise pollution, Noise pollution (Regulation and Control) Rules, 2000.	
5	22-02-2024	**Water and Soil Pollution**	Sources of water pollution, Types of water pollutants, Characteristics of water pollutants Tur-bidity, pH,	
6	28-02-2024		Total suspended solids, total solids BOD and COD: Definition, calculation.	
6	29-02-2024		Waste Water Treatment: Primary methods: sedimentation, froth floatation, Secondary meth- ods: Activated sludge treatment,	
7	06-03-2024		Causes, Effects and Preventive measures of Soil Pollution: Causes-Excessive use of Fertilizers, Pesticides and Insecticides,	
7	07-03-2024	**Renewable sources of Energy**	Solar Energy: Basics of Solar energy. Flat plate collector (Liquid & Air). Theory of flat plate col- lector.	
8	13-03-2024		CLASS TEST-1	
8	14-03-2024		Importance of coating. Advanced collector. Solar pond. Solar water heater, solar dryer. Solar stills.	
9	20-03-2024		Biomass: Overview of biomass as energy source. Thermal characteristics of biomass as fuel. Anaerobic digestion.	
9	21-03-2024		Biogas production mechanism. Utilization and storage of biogas.	
10	27-03-2024		Wind energy: Current status and future prospects of wind energy. Wind energy in India. Environmental benefits and problem of wind energy.	
10	28-03-2024		New Energy Sources: Need of new sources. Different types new energy sources. Applications of Hydrogen energy,	
11	03-04-2024	**Solid Waste Management,**	Applications of (Ocean energy resources, Tidal energy conversion.) Concept, origin and power plants of geothermal energy.	

11	04-04-2024	**ISO 14000 & Environmental Management**	Solid waste generation- Sources and characteristics of : Municipal solid waste, E- waste, bio- medical waste.Metallic wastes and Non-Metallic wastes (lubricants, plastics, rubber)	
12	10-04-2024		Collection and disposal: MSW (3R, principles, energy recovery, sanitary landfill), Hazardous.	
12	18-04-2024		CLASS TEST-II	
13	24-04-2024	**Solid Waste Management, ISO 14000 & Environmental Management**	Waste Air quality act 2004, air pollution control act 1981 and water pollution and control act1996.	
13	25-04-2024		Structure and role of Central and state pollution control board.	
14	01-05-2024		Concept of Carbon Credit, Carbon Footprint.	
14	02-05-2024		Environmental management in fabrication industry. ISO14000: Implementation in industries, Benefits.	
15-16	08-05-2024 onwards	Revision		

GOVT. POLYTECHNIC LAHAUL & SPITI AT UDAIPUR CAMP AT SUNDERNAGAR

LESSON PLAN — **Session - 29th Jan.2024 to 25th May 2024**

Name of the Teacher : Suniti Rani — **Subject: Applied Mathematics-II**

Branch: Civil Engg. (2nd Sem.)

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

HOD (A S & H)

Teacher's Signature

Department of Civil Engineering

Government Polytechnic Lahaul Spiti at Udaipur Camp At Sundernagar Distt Mandi (H.P) -175018

Lesson Plan for Engineering Mechanics (Semester-2nd)Session: 2024

S.No.	MONTH	WEEK	Date	CONTENTS	REMARKS
1	JAN	Week 5	30,31	Significance and relevance of Mechanics, Applied mechanics, Statics, Dynamics. Space, time, mass, particle, flexible body and rigid body Scalar and vector quantity, Units of measurement (SI units) - Fundamental units and derived units. Force – unit, representation as a vector and by Bow's notation .	
2	FEB	Week 1	1,2,3	characteristics and effects of a force, Principle of transmissibility of force, Force system and its classification. Resolution of a force - Orthogonal components of a force .	
		Week 2	6,7,8,9	moment of a force, Varignon's Theorem.Composition of forces – Resultant, analytical method for determination of resultant for concur- rent, non-concurrent and parallel co-planar force systems .	
		Week 3	13,14,15,16	Law of triangle, parallelogram and polygon of forces	
		Week 4	21,22,23	Equilibrium and Equilibrant, Free body and Free body diagram, Analytical and graphical meth- ods of analyzing equilibriumLami's Theorem – statement and explanation .	
		Week 5	28,29	Application for various engineering problemsTypes of beam	
3	MARCH	Week 1	1	Types of supports (simple, hinged, roller and fixed) and loads acting on beam (vertical point load, uniformly distributed load).	
		Week 2	5,6,7,8	Beam reaction for cantilever, simply supported beam with or without overhang – subjected to combination of Point load and uniformly distributed load. Beam reaction graphically for simply supported beam subjected to vertical point loads only	
		Week 3	12,13,14,15	Friction and its relevance in engineering, types and laws of friction, limiting equilibrium, limiting friction, co-efficient of friction, angle of friction, angle of repose, relation between co-efficient of friction and angle of friction . **CLASS TEST-I**	

		Week 4	19,20,21,22	Relation between co-efficient of friction and angle of friction . Equilibrium of bodies on level surface subjected to force parallel and inclined to plane.	
		Week 5	26,27,28	Equilibrium of bodies on inclined plane subjected to force parallel to the plane only. Numerical on inclined and level plane.	
4	APRIL	Week 1	2,3,4,5	Centroid of geometrical plane figures (square, rectangle, triangle, circle, semi-circle, quarter circle) Centroid of composite figures composed of not more than two geometrical figures.	
		Week 2	9,10,11,12	Centre of Gravity of simple solids (Cube, cuboid, cone, cylinder, sphere, hemisphere)	
		Week 3	16,17,18,19	Centre of Gravity of composite solids composed of not more than two simple solidsSimple lifting machine, load, effort, mechanical advantage applications and advantages. Velocity ratio, efficiency of machines law of machine . **CLASS TEST-II**	
		Week 4	23,24,25,26	Simple lifting machine, load, effort, mechanical advantage applications and advantages. Velocity ratio, efficiency of machines law of machine	
		Week5	30	Ideal machine, friction in machine	
5	MAY	Week 1	2,3	Maximum Mechanical advantage and efficiency reversible and non-reversible machines, conditions for reversibility	
		Week 2	7,8,9,10	Velocity ratios of Simple axle and wheel, Differential axle and wheel	
		Week 3	14,15,16,17	Worm and worm wheel Simple screw jack .**HOUSE TEST**	
		Week 4	21,22,23,24	Numerical problem of simple lifting machine	

Signature of Teacher
(Er Pawan Kumar)

Sign of HOD A/SH
Sh. Mohan Singh Thakur

Department of Civil Engineering

Government Polytechnic Lahaul Spiti at Udaipur Camp At Sundernagar Distt Mandi (H.P) -175018

Lesson Plan for Engineering Mechanics G-II (Semester-2nd)Session: (Jan- May 2024)

S.No.	MONTH	WEEK	DATE	CONTENTS	REMARKS
1	February	Week 1	1	To study various equipments related to Engineering Mechanics.	
		Week 2	8	To find the M.A., V.R., Efficiency and law of machine for Differential Axle	
		Week 3	15	To find the M.A., V.R., Efficiency and law of machine for Simple Screw Jack.	
		Week 4	22	Derive Law of machine using Worm and worm wheel	
		Week 5	29	Determine resultant of concurrent force system applying Law of Polygon of forces using force table.	
2	March	Week 2	7	Determine resultant of concurrent force system graphically	
		Week 3	14	Determine resultant of parallel force system graphically	
		Week 4	21	Verify Lami's theorem	
		Week 5	28	Study forces in various members of Jib crane	
3	April	Week 1	4	Determine support reactions for simply supported beam	
		Week 3	18	Obtain support reactions of beam using graphical method.	
		Week 4	25	Determine coefficient of friction for motion on horizontal and inclined plane	
5	May	Week 1	2	Determine centroid of geometrical plane figure	
		Week 2	9	viva and file checking	
		Week 3	16	viva and file checking	

Signature of Teacher
(Er Pawan Kumar)

Signature of H.O.D
(Sh. Mohan Thakur)

Department of Civil Engineering

Government Polytechnic Lahaul Spiti at Udaipur Camp At Sundernagar Distt Mandi (H.P) -175018

Lesson Plan for Engineering Mechanics G-I (Semester-2nd)Session: (Jan- May 2024)

S.No.	MONTH	WEEK	DATE	CONTENTS	REMARKS
1	January	Week 5	29	To study various equipments related to Engineering Mechanics.	
2	February	Week 2	5	To find the M.A., V.R., Efficiency and law of machine for Differential Axle	
		Week 3	12	To find the M.A., V.R., Efficiency and law of machine for Simple Screw Jack.	
		Week 4	19	Derive Law of machine using Worm and worm wheel	
		Week 5	26	Determine resultant of concurrent force system applying Law of Polygon of forces using force table.	
3	March	Week 2	4	Determine resultant of concurrent force system graphically	
		Week 3	11	Determine resultant of parallel force system graphically	
		Week 4	18	Verify Lami's theorem	
4	April	Week 1	1	Study forces in various members of Jib crane	
		Week 2	8	Determine support reactions for simply supported beam	
		Week 4	22	Obtain support reactions of beam using graphical method.	
		Week 5	29	Determine coefficient of friction for motion on horizontal and inclined plane	
5	May	Week 2	6	Determine centroid of geometrical plane figure	
		Week 3	13	viva and file checking	
		Week 4	20	viva and file checking	

Signature of Teacher
(Er Pawan Kumar)

Signature of H.O.D
(Sh. Mohan Thakur)

		Lesson Plan : Jan-Jun 2024	
		Sub: FEEE 2nd Semester	
		Branch: Civil Engg. (GPO)	
Unit	Lecture	Topic	Remarks
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	

Signature of Teacher

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Govt. Polytechnic Lahaul & Spiti at Udaipur Camp at Sundernagar Distt. Mandi H.P

Lesson Plan

2nd Semester Civil Engg. On dated 29/01/2024 to 25/05/2024

S.No	Date	Week	Activity	Name of Teacher	Remarks
JANUARY	30.	5.	Race 100 m,200m,		
FEBRUARY	1.	1	Race 400 m800m		
	6.8	2	High jump boys		
	13.14	3			
	20.23,	4	High jump girl		
	27.29	5	Long jump girl		
MARCH	5.7	1 .	Long jump,boys		
	12.14	2			
	19.21,	3	Shot put boys/girl		
	26.28	4	do		
APRIL	2.4,	1	Dis. Caush,through.		
	9.	2	do		
	16.18	3	Cultural activity		
	23.25	4	do		
	30	5	Sports.activity		
MAY	2,	1	do		
	7.9	2	do		
	14.16	3	Cultural activity		
	21	4	do		

Signature of Teacher

Signature of HOD

GOVT. POLYTECHNIC L & S AT UDAIPUR CAMP AT SUNDERNAGAR

LESSON PLAN (Applied Physics -II BS104)

Name of the Teacher - Manisha Pathania (Lecturer in Physics)

Class: 2nd Sem. Civil. Engg. (29th Jan. -25TH May 2024)

Month	Week	Date	Name of the Unit	Contents to be taught	Remarks
Jan-Feb	1st	29th Jan	1) Wave motion and its applications	Wave motion ,transverse and longitudinal waves with examples,Definition of wave velocity,frequency and wave length of a wave.Relations between wave velocity,frequency and wavelength.	
		31st Jan		Sound and light waves and their properties,Wave equation (y=r sin wt),amplitude,phase,phase difference	
		1st Feb		Principle of superposition of waves and beat formation	
		3rd Feb		Simple harmonic motion:definition,expression for displacement,velocity.	
	2nd	5th Feb		expression for acceleration,time period,frequency in S.H.M.	
		7th Feb		Free,forced and resonant vibrations with examples.	
		8th Feb		Acoustics of buildings-reveration,reverberation time,echo,noise,coefficient of absorption of sound.	
	3rd	12th Feb		Methods to control reverberation time and their applications.Ultrasonic waves-Introduction and properties	
		14th Feb		Ultrasonic waves-Introduction and properties,Engineering and medical applications.	
		15th Feb	2) Optics	Basic optical laws-reflection and refraction	
		17th Feb		refractive index,images and image formation by mirrors	
	4th	19th Feb		lens and thin lenses,lens formula	
		21st Feb		Power of lens ,Magnification of a lens	
		22nd Feb		Total internal reflection ,critical angle and conditions for total internal reflection and and its application in optical fibre	
	5th	26th Feb		Optical Instruments-Simple and compound microscope and their magnifying powers.	
		28th Feb		astronomical telescope in normal adjustment with its magnifying power	
		29th Feb	3) Electrostatics	Coulombs law,unit charge	
March		2nd Mar		Electric field ,Electric lines of force and their properties.	
	6th	4th Mar		Electric flux,Electric Potential and potential difference	
		6th Mar		Gauss's law.Capacitance and its working	
		7th Mar		Capacitance and its units,capacitance of parallel plate capacitor	
	7th	11th Mar		Series and parallel combination of capacitors.	
		13th Mar		Numerical based on combination of capacitor	
		14th Mar		**Class Test-1**	
		16th Mar		Dielectric and its effect on capacitance,dielectric break down	
	8th	18th Mar	4) Current Electricity	Electric Current and its units,Direct and alternating current	
		20th Mar		resistance and its units,specific resistance ,Conductance,specific conductance	
		21st Mar		Series and parallel combination of resistors,Factors affecting resistance of a wire	
		23rd Mar		carbon resistances and colour coding.Ohm's law and its verification	
		27th Mar		Ohm's law and its verification	

	9th	28thMar		Kirchhoff's Laws	
		30thMar		Concept of terminal potential difference and EMF	
April	10th	1st April		Heating effects of Current,Electric power,electrical energy	
		3rd April		Related numerical problems,Advantages of electric energy over other forms of energy.	
		4th April	5) Electrom agnetism	Classification of material -dia,para and ferromagnetic materials with their properties.	
		6th April		Magnetic field and its units.magnetic intensity,magnetic lines of force	
	11th	8th April		magnetic flux and units,magnetization,Lorentz force	
		10th April		Force on a current carrying conductor ,Moving coil galvanometer-principle,construction and working	
	12th	18th April		conversion of galvanometer into ammeter and voltmeter	
		20thApril		**Class Test-2**	
	13th	22ndApril	6) Semi conductor Physics	Energy bands in solids,Types of materials(insulators,semi-conductors,conductors)	
		24thApril		Intrinsic and extrinsic semiconductors	
		25thApril		P-n junction ,junction diode and V-I characteristics .	
		27thApril		Diode as rectifier-half wave and full wave rectifier(centre taped).	
	14th	29thApril		Photo cells,solar cells-working principle and engineering applications.	
May		1st May	7) Modern Physics	Lasers: Energy levels,ionization and excitation potentials	
		2nd May		Spontaneous and stimulated emission,population inversion	
		4th May		Pumping methods,optical feedback,Types of lasers : Ruby laser	
	15th	6th May		He-Ne and semiconductor laser	
		8th May		laser characteristics,engineering and medical applications of lasers	
		9th May		Fiber optics: Introduction to optical fibres,light propagation,Acceptance angle and numerical aperture	
	16th	13th May		**House Test**	
		15th May			
		16th May			
		18th May			
	17th	20th May		Fibre types,applications in telecommunication ,medical and	
		22ndMay		Revision	
		25th May		Revision	

Subject Teacher:-

HOD
(Applied Sc. & Hum.)