LESSON PLAN

Name of Teacher – Nidhi Katoch   Subject: Applied Chemistry   Class: 1st Semester Civil Engg

S. No	Month	Week	Date	Name of Chapter	Contents to be taught	Remarks
1		1st week	1,2,3	Atomic Structure	1.1 Fundamental particles of atoms - Electron, proton, neutron (Definitions)	
2		2nd week	7,8,9	Atomic Structure	1.2 Atomic Structure: Bohr's theory ... and Hydrogen spectrum explanation based on Bohr's model of atom, 1.3 Heisenberg uncertainty principle, Quantum numbers	
3	August	3rd week	14,15,17	Atomic Structure	1.3 Heisenberg uncertainty principle, Quantum numbers, orbital concept, Shapes of s, p orbitals	
		4th Week	21,22,23,24	Atomic Structure	... orbital concept, Shapes of s, p orbitals ... difference between ... 1.4 Pauli's exclusion principle, Hund's rule of maximum multiplicity Aufbau rule, electronic configuration (Z=1 to 30)	
4		5th Week	28,29,30,31	Chemical bonding and Solutions	2.1 Concept of chemical bonding ... types of bonds, ionic bonding (NaCl) examples 2.2 Lewis concept of covalent bond (H2, F2, HF), Electronegativity, Difference ... 2.3 Electron sea model of metallic bond, 2.4 Idea of solute, solvent and solution	
5		1st week	4,5,6,7	Chemical bonding and Solutions	2.5 Methods to express the concentration of solution: molarity (M) - moles per litre, molality, mass percentage (Numericals excluded)	
6		2nd week	11,12,13	Electro Chemistry and Corrosion	3.1 Electronic concept of oxidation, reduction and redox reactions, Definition of ionic, electrolytes, non-electrolytes with suitable examples, 3.2 Faradays laws of electrolysis and simple numerical problems, 3.3 Industrial application of Electrolysis	Class Test
7	September	3rd week	18,19,20,21	Electro Chemistry and Corrosion	Electrometallurgy • Electroplating • Electrolytic refining, 3.4 Application of redox reactions in electrochemical cells • 4 Primary cells - dry cell, • Secondary cell: commercially used lead acid storage battery. 3.5 Introduction to Corrosion of metals - definition, types of corrosion (electrochemical), (i) Generation and (ii) absorption mechanism of electrochemical corrosion	
8		4th week	25,26,27,28	Electro Chemistry and Corrosion	Internal corrosion preventive measures - Purification, alloying and heat treatment and Exterior corrosion preventive measures: metal (anodic, cathodic) coatings	
10		1st week	1,4,5	Engineering Materials	4.1 Natural occurrence of metals - minerals, ores of iron, aluminium and copper metallurgy - brief account of general principles of metallurgical Crushing and grinding (ii) Concentration of ore (Levigation, froth flotation, Magnetic separation) (iii) Extraction (Roasting and calcinations & smelting) (iv) Refining (Electric refining, zone refining)	
11		2nd week	9,10,11	Engineering Materials	Extraction of iron from haematite ore using blast furnace along with reactions 4.2 Alloys - Definition, purposes of alloying, ferrous alloys (Invar steel) and non-ferrous/simple Brass & bronze. Nichrome, Duralumin, Magnalium with suitable examples, properties and applications	

	October	3rd week	15,18,19	Water	5.11 Classification of soft and hard water based on soap test, salts causing water hardness, units of hardness, temporary and permanent hardness. Cause of poor lathering off soap in hard water, 5.2 Problems caused by the use of hard water in boiler (scale and sludge, foaming and priming, corrosion	Class /Test -II
		4th Week	23,24,25,26	Water	5.11 Water softening techniques: zeolite process aj. Municipal water treatment (in brief only) – sedimentation, coagulation, filtration, sterilization. 5.4 Properties of water used for human consumption for drinking and cooking purposes from any water sources and Indian standard specification of drinking water	
		5th week	30,31		**Diwali Vacation**	
		1st week	1,2	Fuel	6.1 Definition of fuel and combustion of fuel, classification of fuels 6.2 calorific values (HCV and LCV), calculation of HCV and LCV using Dulong's formula. Characteristics of good fuel 6.3 Petrol and diesel - fuel rating, octane and cetane numbers) 6.4 Chemical composition, calorific values and applications of LPG, CNG, water gas, producer gas and biogas.	
		2nd week	6,7,8		**House Test**	
	November	3rd week	13,14,16	Lubrication	7.1 Function and characteristic properties of good lubricant, 7.2 classification with examples, 7.3 Lubrication mechanism – hydrodynamic and boundary lubrication 7.4 Physical properties (viscosity and viscosity index.	
		4th week	20,21,22,23	Polymers	8.1 Monomer, homo and co polymers , degree of polymerization 8.2 simple reactions involved in preparation and their application of thermoplastics and thermosetting plastics (using Polythene, PVC, PS, PTFE, nylon 6,6 and bakelite only)	
		5th week	27,28,29,30	Polymers	8.3 Vulcanization of rubber and properties of vulcanized r	

Govt. Polytechnic Talwar
Distt. Kangra H.P. 176096
Lesson Plan
(Labs/Workshop)

Name of Teacher:- Nidhi Katoch	Designation:- Lecturer	Group:- G1 and G2		
Name of Lab/Workshop:- Applied Chemistry	Class/Branch:- Civil Engg/ 1st Semester			
		Date		
Sr. No.	Description of Practical job	G1	G2	Remarks
1	Preparation of standard solution of oxalic acid.	05-08-2024 12-08-2024 02-09-2024	06-08-2024 13-08-2024 20-08-2024	
2	To determine strength of given sodium hydroxide solution by titrating against standard oxalic acid solution using phenolphthalein indicator.	09-09-2024 16-09-2024	27-08-2024 03-09-2024	
3	Experimental verification of Faraday's first law of Electrolysis using Copper sulphate solution and Copper electrodes.	23-09-2024 30-09-2024	10-09-2024 17-09-2024	
4	To determine the percentage of Iron present in the given Haematite ore by standard Potassium permanganate solution	07-10-2024 14-10-2024	24-09-2024 1-10-2024	
5	To estimate total alkalinity of given water sample by titrating it against standard Sulphuric acid solution.	21-10-2024 28-10-2024	08-10-2024 15-10-2024	
6	To estimate moisture in given coal sample gravimetrically	4-11-2024 11-11-2024	22-10-2024 29-10-2024	
7	To estimate ash in given coal sample gravimetrically.	18-11-2024	5-11-2024 12-11-2024	
8	To determine viscosity of given lubricating oil by Redwood viscometer	25-11-2024 02-12-2024	19-11-2024 26-11-2024	

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LESSON PLAN

Program Name	DIPLOMA (Automobile Engg.)
Course/Subject Name	Applied Mathematics-I
Course/Subject Code	BS- 101
Course/Subject Coordinator Name	Kharatti Lal

Evaluation scheme

S.No.	Subject Name	Study scheme (Hrs/Week)	Marks in evaluation scheme			
			Internal Assessment		External Assessment	
			Theory	Practical	Theory	Practical
1.	Applied Mathematics-I	5	40	00	60	-
Reference books			(i)	Elementary Engineering Mathematics by Bs Grewal		
			(ii)	Applied mathematics by Dr. RD Sharma		
			(iii)	Engineering Mathematics by Dass Gupta		
			(iv)	Applied Mathematics, vol I &II by SS Sabharwal & Sunita Jain		

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

CO1	Understand the concept of Angles, its measurement and Allied angles
CO2	Understand the concept of compound angles, sub-multiple angles.
CO3	Understand the concept of Differentiation.
CO4	Able to solve the questions of differentiation and its application.
CO5	Understand the Complex Number and their fundamental operations
CO6	Understand the concept of Partial fractions and Permutation & combination.
CO7	Understand the concept of Binomial theorem.

Teaching Plan:

Lecture No.	Name of topic	Proposed date	Actual date	Remarks
1-5	Angles and its Measurement	01/08/2024 3,5,6,7,8,		
6 - 9	Trigonometrical Ratio of some Allied angles	12/08/2024 13,14,17,19		
10 -11	Addition and Subtraction formulae	20/08/202 21,24,26,27		
12 - 21	Transformation of a product into a sum or a difference and vice-versa	28/08/2024 29,31, 03/09/2024, 04,05,07,09 . .		
22 - 27	Trigonometrical ratios of Multiple angles	10/09/2024 10,11,12,17 ,19,		
28-31	Trigonometrical ratios of Sub – Multiple angles	21/09/2024 23,24,25,		
32-34	Graphs of Trigonometrical functions	28/09/2024 30, 03/10/2024 ,05,		
35-37	Functions and their Limits	07/10/2024 09,10,		
37-39	Differentiation	11/10/2024 12,13,		
39-43	Applications of Differential Calculus	14/10/2024, 16,19,21		

43-46	Complex Number: Definition , real and imaginary parts of complex Numbers. Polar &Cartesian form and representation of Complex Number.	22/10/2024 23,24,26, 04/11/2024 05.		
46-51	Conjugate, Modulus & Amplitude of Complex Number .	06/11/2024 07,08,11		
51-57	Fundamental operations (Addition, Subtraction Multiplication &Division) of Complex Numbers.	13/11/2024 14,15,		
57-60	De-movier's theorem, its application.	16/11/2024 18,19		
60-62	Partial fractions (linear factors, repeated linear factors)	20/11/2024 21,23,		
62-65	Permutations	24/11/202 25.		
65-69	Combinations	26/11/2024 27.		
70-73	Binomial theorem for positive index (expansion and general form).	28/11/2024 29,30,		
73- 75	Binomial theorem for any index and applications	02/12/2024		

Assignments:

Assignment serial	Contents of syllabus covered	Proposed date	Actual date	Remarks
A-I	Trigonometry	01/09/24		
A-II	Differentiation	05/10/24		
A-III	Complex Number	10/11/24		

House Test/Class Test:

House/Class Test	Contents of syllabus covered	Proposed date	Actual date	Remarks
CT-I	30% of the syllabus	1st week of September		
CT-II	Next 30% of the syllabus	2nd week of october		
House Test	80% of the syllabus	2nd week of November		

Teacher's signature

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LESSON PLAN

Name of Teacher :- Kumari Indu   Subject: Applied Physics -I   Class: 1st Semester Civil Engg.

S. No.	Month	Week	Date	Name of Chapter	Contents to be taught	Remarks
		1st week	3	Physical world, Units and Measurements	Introduction	
1		2nd week	5,6,7	Physical world, Units and Measurements	Physical quantities fundamental and derived, Units and systems of units (FPS, CGS and SI units)	
2		3rd week	12,13,14,17	Physical world, Units and Measurements	Dimensions and dimensional formulae of physical quantities ,Principle of homogeneity of dimensions, Dimensional equations and their applications (conversion from one system of units to other, checking of dimensional equations and derivation of simple equations)	
3	August	4th Week	20,21,24	Physical world, Units and Measurements	Limitations of dimensional analys and Numerical problems , Errors in measurements (systematic and random), absolute error, relative error, error estimation and sign figure	
4		5th Week	27,28,31	Force and Motion	Scalar and Vector quantities – examples, representation of vector, types of vectors. Addition and Subtraction of Vectors. Triangle and Parallelogram law (Statement only,)Scalar and Vector Product.	
5		1st week	2,3,4,7	Force and Motion	Resolution of a Vector and its application to inclined plane (Rectangular components) and lawn rollerForce, Momentum, Statement and derivation of conservation of linear momentum, its applications such as recoil of gun &rockets, Impulse and its applications Circular motion, definition of angular displacement, angular velocity, angular acceleration, frequency, time period	
6	September	2nd week	9,10,11	Force and Motion	Relation between linear and angular velocity, linear acceleration and angular acceleration (related numerical)Centripetal and Centrifugal forces with live examples, Expression and applications such as banking of roads and bending of cyclist	Class -Test -1
7		3rd week	16,17,18,21	Work, Power and Energy	Work, Concept and units, examples of zero work, positive work and negative workEnergy and its units, kinetic energy , gravitational potential energy with examples and derivations, Mechanical energy, conservation of mechanical energy for freely falling bodies	

8		4th week	23,24,25,28	Work, Power and Energy	Power and its units, power and work relationship, calculation of powerFriction concept, types, laws of limiting friction, coefficient of friction, methods for reducing friction and its engineering applications.	
9		5th Week	30	Work, Power and Energy	transformation of energy (examples)	
10		1st week	1,5	Work, Power and Energy	Work done in moving an object on horizontal and inclined plane for rough and plane surfaces and related applications	
11		2nd week	7,8,9	Rotational Motion	Translational and rotational motions with examples. Definition of torque and angular momentum and their examples. Conservation of angular momentum (quantitative) and its	
12	October	3rd week	14,15,16,19	Rotational Motion	Moment of inertia and its physical significance, radius of gyration for rigid body. Theorems of parallel and perpendicular axes (statements only). Moment of inertia of rod, disc, ring and sphere (hollow and solid) (Formulae only)	Class -Test -II
13		4th Week	21,22,23,26	Properties of Matter	Elasticity Definition of stress and strain Different types of moduli of elasticity, Hooke's law, significance of stress-strain curvePressure definition, units, atmospheric pressure, gauge pressure, absolute pressure, Fortin's Barometer and its applicationSurface tension concept, units	
14		5th Week	28,29,30	Diwali Vacations		
15		1st week	2	Properties of Matter	cohesive and adhesive forces, angle of contact,	
16		2nd week		House Test		
17	November	3rd week	11,12,13,16	Heat and Thermometry	Ascent Formula (No derivation), applications of surface tension, effect of temperature and impurity on surface tension ,Concept of heat and temperatureModes of heat transfer (conduction, convection and radiation with examples)	
18		4th Week	18,19,20,23	Heat and Thermometry	scales of temperature and their relationship. Types of Thermometer (Mercury thermometer, bimetallic thermometer, Platinum resistance thermometer, Pyrometer) and their uses	
19		5th Week	25,26,27,30	Heat and Thermometry	Expansion of solids, liquids and gases : coefficient of linear, surface and cubical expansions and relation amongst them. Co-efficient of thermal conductivity and numerical problem	
20	December	1st week	2	Heat and Thermometry	Co-efficient of thermal conductivity and numerical problem	

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Govt. Polytechnic Talwar
Distt. Kangra H.P. 176096
Lesson Plan
(Labs/Workshop)

Name of Teacher:- Kumari Indu	Designation:- Lecturer	Group:- G1	
Name of Lab/Workshop:- Applied Physics-I	Class/Branch:- Civil Engg/ 1st Semester		

Sr. No.	Description of Practical job	Date	Remarks
1	To measure length, radius of a given cylinder, a test tube and a beaker using a Vernier caliper and find volume of each object.	02-08-2024 09-08-2024 16-08-2024	
2	To determine diameter of a wire, a solid ball and thickness of cardboard using a screw gauge	23-08-2024 30-08-2024	
3	To determine radius of curvature of a convex and a concave mirror/surface using a spherometer	06-09-2024 13-09-2024	
4	To verify triangle and parallelogram law of forces	20-09-2024 27-09-2024	
5	To determine force constant of a spring using Hook's Law	04-10-2024 11-10-2024	
6	To verify law of conservation of mechanical energy (PE to KE).	18-10-2024 25-10-2024	
7	To measure room temperature and temperature of a hot bath using mercury thermometer and convert it into different scales	01-11-2024 08-11-2024	
8	To find the moment of inertia of a flywheel	22-11-2024 29-11-2024	

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Govt. Polytechnic Talwar
Distt. Kangra H.P. 176096
Lesson Plan
(Labs/Workshop)

Name of Teacher:- Kumari Indu	Designation:- Lecturer	Group:- G2	
Name of Lab/Workshop:- Applied Physics-I	Class/Branch:- Civil Engg/ 1st Semester		

Sr. No.	Description of Practical job	Date	Remarks
1	To measure length, radius of a given cylinder, a test tube and a beaker using a Vernier caliper and find volume of each object.	03-08-2024 17-08-2024 24-08-2024	
2	To determine diameter of a wire, a solid ball and thickness of cardboard using a screw gauge	31-08-2024 07-09-2024	
3	To determine radius of curvature of a convex and a concave mirror/surface using a spherometer	21-09-2024 28-09-2024	
4	To verify triangle and parallelogram law of forces	05-10-2024 19-10-2024	
5	To determine force constant of a spring using Hook's Law	26-10-2024	
6	To verify law of conservation of mechanical energy (PE to KE	2-11-2024 16-11-2024	
7	To measure room temperature and temperature of a hot bath using mercury thermometer and convert it into different scales	23-11-2024	
8	To find the moment of inertia of a flywheel	30-11-2024	

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Govt. Polytechnic Talwar
(Deptt. Of Applied Sciences & Humanities)
Lesson Plan
Session:August-2024 To December-2024

					Designation: Lecturer Mathematics	
Name of teacher: Sangeeta Sharma					Class: Civil Engg	
Name of Subject: Applied Mathematics-1					Contents to be taught	Remarks
Sr. No.	Month	Week	Date	Name of Chapter		
1	August	1st	2,3	Trigonometry	Concept of angles measurment of	
2					angles in degrees,grades and	
3		2nd	5,6,7,9		radians and their conversions	
4					T-ratios of allied angles	
5					T-ratios of allied angles	
6		3rd	12,13,14,17		Sum, Difference formlae and	
7					their application	
8					Sum, Difference formlae and	
9					their application	
10		4th	20,21,23,24		Transformation of product to	
11					sum, Difference .	
12					Transformation of sum,	
13					difference in to product	
14		5th	27,28,30,31		T-ratios of allied angles	
15					Sum, Difference formlae and	
16					T-ratios of multiple angles,	
17		1st	2,3,4,6,7		T-ratios of multiple angles,	
18					sub -multiples angles(2A,3A,A/2)	
19					sub -multiples angles(2A,3A,A/2)	
20					sub -multiples angles(2A,3A,A/2)	
21					Graph of SinX,Cosx,Tanx & ex	
22		2nd	9,10,11,13		Graph of SinX,Cosx,Tanx & ex	Class Test 1
23					Definition of function; concept of	
24					limits	
25					Definition of function; concept of	

#	Month	Week	Dates	Subject	Topic	Test
26	September				limits	
27					Differentiation by definition of	
28		3rd	16,17,18,20,21		sinx,cosx,tanx,logx,	
29					Differentiation by definition of	
30					sinx,cosx,tanx,logx,	
31					Differentiation of sum, product and	
32					quotient of functions.	
33		4th			Differentiation of function of a	
34					function.	
35			23,24,25,27,28		Differentiation of tigonometric	
36		5th	30	Differential Calculus	Differentiation of tigonometric	
37					Derivative of function in implicit form	
38		1st	1,4,5		Derivative of function in parametric form	
39					inverse function.	
40					logarithimic differentiation.	
41					logarithimic differentiation.	Class Test 2
42			7,8,9,11,12		Complex no. definition,real&imaginary	
43					partsof complex no. rep. of complex no.	
44		2nd			&its conversion one form to other,	
45					conjugate,modulus&amplitude of	
46					Complex no. addtion,subtraction,	
47	October	3rd	14,15,16,18,19		division&multiplication of comp.no.	
48					De-movier theorem,its application.	
49					Partial fractions(linear factors,	
50					repeated linear factors)	
51					Partial fractions(linear factors,	
52		4th	21,22,23,25,26		repeated linear factors)	
53					Permutations&Combinations:	
54					P(n,r),C(n,r) simple problems.	
55					P(n,r),C(n,r) simple problems.	
56		5th	28,29,30		Binomial theorem for positive index	
57					middle term,constant term.	

No.	Month	Week	Topic	Subject	Description
58					Binomial theorem for positive index middle term,constant term.
59		1st	1,2		
60					House Test
61				Algebra	House Test
62			4,5,6,8		House Test
63		2nd			Binomial theorem for any index aplications on first&second binomial approximation.
64					
65					
66			11,12,13,16		Revision Chapter 1
67	November	3rd			Revision Chapter 1
68					Revision Chapter 1
69					Revision Chapter 2
70		4th	18,19,20,22,23		Revision Chapter 2
71					Revision Chapter 2
72					Revision Chapter 2
73					Revision Chapter 2
74					Revision Chapter 3
75			25,26,27,29,30		Revision Chapter 3
76					Revision Chapter 3
77		5th			Revision Chapter 3
78	December	1st	2		Revision Chapter 3

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Applied Sciences & Humanities

LESSON PLAN

Name of Teacher :- Kumari Indu   Subject: Applied Physics -I   Class: 1st Semester Automobile Engg.

S. No.	Month	Week	Date	Name of Chapter	Contents to be taught	Remarks
		1st week	1,2	Physical world, Units and Measurements	Introduction	
1	August	2nd week	6,7,8,9	Physical world, Units and Measurements	Physical quantities fundamental and derived, Units and systems of units (FPS, CGS and SI units)	
2		3rd week	13,14,16	Physical world, Units and Measurements	Dimensions and dimensional formulae of physical quantities ,Principle of homogeneity of dimensions, Dimensional equations and their applications (conversion from one system of units to other, checking of dimensional equations and derivation of simple equations)	
3		4th Week	20,21,22,23	Physical world, Units and Measurements	Limitations of dimensional analys and Numerical problems , Errors in measurements (systematic and random), absolute error, relative error, error estimation and sign. figure	
4		5th Week	27,28,29,30	Force and Motion	Scalar and Vector quantities – examples, representation of vector, types of vectors Addition and Subtraction of Vectors, Triangle and Parallelogram law (Statement only)Scalar and Vector Product	
5	September	1st week	3,4,5,6	Force and Motion	Resolution of a Vector and its application to inclined plane (Rectangular components) and lawn rollerForce, Momentum, Statement and derivation of conservation of linear momentum, its applications such as recoil of gun &rockets, Impulse and its applications Circular motion, definition of angular displacement, angular velocity, angular acceleration, frequency, time period.	
6		2nd week	10,11,12,13	Force and Motion	Relation between linear and angular velocity, linear acceleration and angular acceleration (related numerical)Centripetal and Centrifugal forces with live examples, Expression and applications such as banking of roads and bending of cyclist	Class -Test -I
7		3rd week	17,18,19,20	Force and Motion	Work: Concept and units, examples of zero work, positive work and negative workEnergy and its units, kinetic energy, gravitational potential energy with examples and derivations. Mechanical energy, conservation of mechanical energy for freely falling bodies	

8		4th week	24,25,26,27	Work, Power and Energy	Power and its units, power and work relationship, calculation of powerFriction concept, types, laws of limiting friction, coefficient of friction, methods for reducing friction and its engineering applications, transformation of energy (examples)	
9		1st week	1,3,4	Work, Power and Energy	Work done in moving an object on horizontal and inclined plane for rough and plane surfaces and related applications	
10		2nd week	8,9,10,11	Rotational Motion	Translational and rotational motions with examples.Definition of torque and angular momentum and their examples. Conservation of angular momentum (quantitative) and its	
11	October	3rd week	15,16,18	Rotational Motion	Moment of inertia and its physical significance, radius of gyration for rigid body, Theorems of parallel and perpendicular axes (statements only), Moment of inertia of rod, disc, ring and sphere (hollow and solid) (formulae only)	Class -Test -II
12		4th Week	22,23,24,25	Properties of Matter	Elasticity: Definition of stress and strain. Different types of moduli of elasticity, Hooke's law, significance of stress-strain curvePressure definition, units, atmospheric pressure, gauge pressure, absolute pressure, Fortin's Barometer and its applicationSurface tension concept, units	
13		5th Week	29,30	Diwali Vacations		
14		1st week	1	Properties of Matter	cohesive and adhesive forces, angle of contact,	
15		2nd week		House Test		
16	November	3rd week	12,13,14	Heat and Thermometry	Ascent Formula (No derivation), applications of surface tension, effect of temperature and impurity on surface tension .Concept of heat and temperatureModes of heat transfer (conduction, convection and radiation with examples)	
17		4th Week	19,20,21,22	Heat and Thermometry	scales of temperature and their relationship .Types of Thermometer (Mercury thermometer, bimetallic thermometer, Platinum resistance thermometer, Pyrometer) and their uses	
18		5th Week	26,27,28,29	Heat and Thermometry	Expansion of solids, liquids and gases , coefficients of linear, surface and cubical expansions and relation amongst them. Co-efficient of thermal conductivity and numerical problem .Co-efficient of	

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Govt. Polytechnic Talwar
Distt. Kangra H.P. 176096
Lesson Plan
(Labs/Workshop)

Name of Teacher:- Kumari Indu	Designation:- Lecturer	Group:- G1	
Name of Lab/Workshop:- Applied Physics-I	Class/Branch:- Automobile Engg/ 1st Semester		

Sr. No.	Description of Practical job	Date	Remarks
1	To measure length, radius of a given cylinder, a test tube and a beaker using a Vernier caliper and find volume of each object.	05-08-2024 12-08-2024 02-09-2024	
2	To determine diameter of a wire, a solid ball and thickness of cardboard using a screw gauge	09-09-2024 16-09-2024	
3	To determine radius of curvature of a convex and a concave mirror/surface using a spherometer	23-09-2024	
4	To verify triangle and parallelogram law of forces	30-09-2024 07-10-2024	
5	To determine force constant of a spring using Hook's Law	14-10-2024 21-10-2024	
6	To verify law of conservation of mechanical energy (PE to KE	28-10-2024 4-11-2024	
7	To measure room temperature and temperature of a hot bath using mercury thermometer and convert it into different scales	11-11-2024	
8	To find the moment of inertia of a flywheel	18-11-2024 25-11-2024 02-12-2024	

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Govt. Polytechnic Talwar
Distt. Kangra H.P. 176096
Lesson Plan
(Labs/Workshop)

Name of Teacher:- Kumari Indu		Designation:- Lecturer	Group:- G2	
Name of Lab/Workshop:- Applied Physics-I		Class/Branch:- Automobile Engg/ 1st Semester		
Sr. No.	Description of Practical job		Date	Remarks
1	To measure length, radius of a given cylinder, a test tube and a beaker using a Vernier caliper and find volume of each object.		06-08-2024 13-08-2024 20-08-2024	
2	To determine diameter of a wire, a solid ball and thickness of cardboard using a screw gauge		27-08-2024 03-09-2024	
3	To determine radius of curvature of a convex and a concave mirror/surface using a spherometer		10-09-2024 17-09-2024	
4	To verify triangle and parallelogram law of forces		24-09-2024 1-10-2024	
5	To determine force constant of a spring using Hook's Law		08-10-2024 15-10-2024	
6	To verify law of conservation of mechanical energy (PE to KE		22-10-2024 29-10-2024	
7	To measure room temperature and temperature of a hot bath using mercury thermometer and convert it into different scales		5-11-2024 12-11-2024	
8	To find the moment of inertia of a flywheel		19-11-2024 26-11-2024	

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LESSON PLAN

Name of Teacher – Nidhi Kanoch   Subject   Applied Chemistry   Class   1st Semester Automobile Engg.

S. No.	Month	Week	Date	Name of Chapter	Contents to be taught	Remarks
1	August	1st week	1,2	Atomic Structure	1.1 Fundamental particles of atom : Electron, proton, neutron (Definitions)	
2		2nd week	5,6,8,9	Atomic Structure	1.2 Atomic Structure. Bohr's theory, successes and limitations(expression of energy and radius to be omitted), and Hydrogen spectrum explanation based on Bohr's model of atom. 1.3 Heisenberg uncertainty principle. Quantum numbers	
3		3rd week	12,13,16	Atomic Structure	1.3 Heisenberg uncertainty principle. Quantum numbers– orbital concept, Shapes of s, p orbitals	
		4th Week	20,22,23	Atomic Structure	– orbital concept, Shapes of s, p orbitals , difference between orbit and orbital 1.4 Pauli's exclusion principle, Hund's rule of maximum multiplicity Aufbau rule, electronic configuration(z=1 to 30)	
4		5th Week	27,29,30	Chemical bonding and Solutions	2.1 Concept of chemical bonding – cause of chemical bonding, types of bonds ionic bonding (NaCl example) 2.2 Lewis concept of covalent bond (H2, F2, HF). Electronegativity. Difference between sigma and pie bond 2.3 Electron sea model of metallic bond. 2.4 Idea of solute, solvent and solution	
5	September	1st week	2,3,5,6	Chemical bonding and Solutions	2.5 Methods to express the concentration of solution- molarity (M = mole per liter), molality, mass percentage (Numerical excluded)	
6		2nd week	9,10,12,13	Electro Chemistry and Corrosion	3.1 Electronic concept of oxidation, reduction and redox reactions. Definition of terms: electrolytes, non-electrolytes with suitable examples. 3.2 Faradays laws of electrolysis and simple numerical problems. 3.3 Industrial application of Electrolysis	Class Test - 1
7		3rd week	16,17,19,20	Electro Chemistry and Corrosion	Electrometallurgy • Electroplating • Electrolytic refining 3.4 Application of redox reactions in electrochemical cells – • Primary cells – dry cell, • Secondary cell commercially used lead acid storage battery. 3.5 Introduction to Corrosion of metals – definition, types of corrosion (electrochemical), H2 liberation and O2 absorption mechanism of electrochemical corrosion	
8		4th week	23,24,26,27,30	Electro Chemistry and Corrosion	Internal corrosion preventive measures – Purification, alloying and heat treatment and External corrosion preventive measures metal (anodic, cathodic) coatings	
10		1st week	1,3,4	Engineering Materials	4.1 Natural occurrence of metals – minerals, ores of iron, aluminium and copper metallurgy – brief account of general principles of metallurgy(a) Crushing and grinding (b) Concentration of ore (Levigation, Froth flotation, Magnetic separation) (c) Extraction: Roasting and calcination & smelting (d) Refining (Electro refining, Zone refining	
11		2nd week	7,8,10,11	Engineering Materials	Extraction of – iron from haematite ore using blast furnace along with reactions. 4.2 Alloys – definition, purposes of alloying, ferrous alloys (like steel) and non-ferrous(Simple Brass & Bronze, Nichrome, Duralumin, Magnalium) with suitable examples, properties and applications	

	October	3rd week	14,15,18	Water	5.1 Classification of soft and hard water based on soap test, salts causing water hardness, units of hardness(mg/L and ppm) and simple numerical on water hardness. Cause of poor lathering of soap in hard water. 5.2 Problems caused by the use of hard water in boiler (scale and sludge, foaming and priming, corrosion)	Class -Test -II
12						
13		4th Week	21,22,24,25	Water	5.3 (i) water softening techniques- zeolite process (ii) Municipal water treatment (in brief only) – sedimentation, coagulation, filtration, sterilization. 5.4 Properties of water used for human consumption for drinking and cooking purpose from any water sources and indian standard specification of drinking water	
14		5th week	30,31		**Diwali Vacation**	
15		1st week	1	Fuel	6.1 Definition of fuel and combustion of fuel, classification of fuels	
		2nd week	6,7,8		**House Test**	
16	November	3rd week	11,12,14	Lubrication	6.1 Definition of fuel and combustion of fuel, classification of fuels 6.2 calorific values (HCV and LCV), Calculation of HCV and LCV using Dulong's formula. Characteristics of good fuel 6.3 Petrol and diesel – fuel rating (octane and cetane numbers) 6.4 Chemical composition, calorific values and application of LPG, CNG, water gas, producer gas and biogas	
		4th week	18,19,21,22	Polymers	7.1 Function and characteristic properties of good lubricant. 7.2 classification with examples 7.3 Lubrication mechanism – hydrodynamic and boundary lubrication 7.4 Physical properties (viscosity and viscosity index)	
		5th week	25,26,28,29	Polymers	8.1 Monomer, homo and co polymers, degree of polymerization 8.2 simple reactions involved in preparation and their application of thermoplastics and thermosetting plastics (using Polythene, PVC, PS, PTFE, nylon 6,6 and Bakelite only)	
17	December	1st week	2		8.3 vulcanization of rubber and properties of vulcanised r	

Signature of Teacher

Govt. Polytechnic Talwar
Distt. Kangra H.P. 176096
Lesson Plan
(Labs/Workshop)

Name of Teacher:- Nidhi Katoch		Designation:- Lecturer	Group:- G1 and G2		
Name of Lab/Workshop:- Applied Chemistry -I		Class/Branch:- Automobile Engg/ 1st Semester			
	Description of Practical job		Date		Remarks
Sr. No			G1	G2	
1	Preparation of standard solution of oxalic acid.		07-08-2024 14-08-2024	03-08-2024 17-08-2024 24-08-2024	
2	To determine strength of given sodium hydroxide solution by titrating against standard oxalic acid solution using phenolphthalein indicator.		21-08-2024 28-08-2024	31-08-2024 07-09-2024	
3	Experimental verification of Faraday's first law of Electrolysis using Copper sulphate solution and Copper electrodes.		04-09-2024 11-09-2024	21-09-2024 28-09-2024	
4	To determine the percentage of Iron present in the given Haematite ore by standard Potassium permanganate solution		18-09-2024 25-09-2024	05-10-2024 19-10-2024	
5	To estimate total alkalinity of given water sample by titrating it against standard Sulphuric acid solution.		09-10-2024 16-10-2024	26-10-2024	
6	To estimate moisture in given coal sample gravimetrically		23-10-2024 30-10-2024	2-11-2024 16-11-2024	
7	To estimate ash in given coal sample gravimetrically.		6-11-2024 13-11-2024	23-11-2024	
8	To determine viscosity of given lubricating oil by Redwood viscometer		20-11-2024 27-11-2024	30-11-2024	
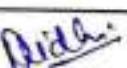
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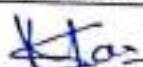
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Govt. Polytechnic Talwar
Distt. Kangra H.P. 176096
Lesson Plan
Session: August2024 -December 2024

Name of Teacher:- Parveen Kumari	Designation:-Lecturer (AS&H)			
Name of Lab :- Communication Skills in English -Lab.	Class/Branch:- 1st semester/ Civil Engg.	Group:- G 1 and G 2		

Sr. No.	Description of Practical job	Date (G1)	Date (G2)	Remarks
1	Listening Skills- Listening Process and Practice: Introduction to recorded lectures,poems,interviews and speeches, listening tests	3/08/2024 17/08/2024 24/08/2024	2/8/2024 9/8/2024 16/8/2024	
2	Introduction to Phonetics- (1) Sounds: consonants, vowels, diphthongs,etc. transcription of words (IPA), syllable division	31/08/2024 7/09/2024 21/09/2024	23/08/2024 30/08/2024 6/09/2024	
	(2) Word stress, intonation, voice modulation etc.	28/09/2024 5/10/2024	13/09/2024 20/09/2024	
3	Speaking Skills: Standard and formal speech: Group Discussion	5/10/2024 19/10/2024	27/10/2024 4/10/2024	
	Oral Presentations, Public speaking, business presentations etc	26/10/2024	11/10/2024	
	Conversation Practice	26/10/2024 2/11/2024	18/10/2024 25/10/2024	
	Role playing	2/11/2024 16/11/2024	25/10/2024 1/11/2024	
	Mock Interviews	16/11/2024 23/11/2024	22/11/2024 29/11/2024	

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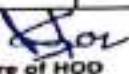
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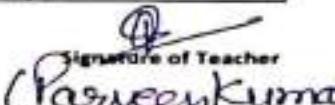**Distt. Kangra H.P. 176096**
LESSON PLAN

Name of Teacher :- Parveen Kumari   **Subject: Communication Skills in English Class: 1st Semester Civil Engg.**

Session: August 2024-December 2024

S. No.	Month	Week	Date	Name of Chapter	Contents to be taught	Remarks
1	August	1st week	1,2	Communication: Theory and Practice	Basics of communication: Introduction, meaning and definition, process of communication etc	
2		2nd week	7,8,9		Types of communication: formal and informal, verbal, non verbal and written , Barriers to effective communication	
3		3rd week	14,16		7Cs for effective communication, Art of Effective Communication,	
4		4th week	21,22,23		Technical Communication Introduction:Soft Skills and Hard Skills	
5		5th week	28,29,30		Introduction: Soft Skills and Hard Skills, Importance of soft Skills,	
6	September	1st week	4,5,6	Soft Skills for Professional Excellence	Life skills, Applying soft skills across cultures	
7		2nd week	11,12,13		Short Stories: The Gift of the Magi by O. Henry	Class Test-1
8		3rd week	18,19,20	Reading Comprehension	Uncle Podger Hangs a Picture by Jerome K. Jerome Poetry: (1) Night of the Scorpion by Nissim Ezekiel	
9		4th week	25,26,27		Night of the Scorpion (2) Stopping by Woods on a Snowy Evening by Robert Frost	
10	October	1st week	3,4		Poetry: (3) Where the Mind is Without Fear by Rabindranath Tagore	
11		2nd week	9,10,11	Professional Writing	The Art of precis writing	
12		3rd week	16,18		Letters: Business and Personal Drafting e-mail	Class Test- 2
13		4th Week	23,24,25		Drafting notices, minutes of a meeting etc.	
14		5th week	31	Vocabulary and Grammar	Diwali Vacation	
15	November	1st week	1		Glossary of administrative terms (English and Hindi), One-word substitution,Idioms and phrases	
16		2nd week	7,8,9		House Test	
17		3rd week	13,14		Parts of Speech, active and passive voice	
18		4th week	20,21,22		Active and passive voice , Tenses	
19		5th week	27,28,29		Tenses, Punctuation	

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Signature of Teacher
Parveen Kuma

LESSON PLAN

Name of Teacher :- Meenakshi Saini Subject: Communication Skills in English Class: 1st Semester Auto. Engg.

S. No.	Month	Week	Date	Name of Chapter	Contents to be taught	Remarks
1	August	1st Week	1,2,3	Unit-1 Communication: Theory and Practice	1. Basics of communication: Introduction, Meaning and definition, process of communication etc.	
2		2nd week	8, 9		1.2 Types of communication: formal and informal, verbal, non-verbal and written	
3		3rd week	16, 17		1.2 Types of communication: formal and informal, verbal, non-verbal and written. 2. Barriers to effective communication	
4		4th week	22, 23, 24		3. 7Cs for effective communication (considerate, concrete, concise, clear, complete, correct, courteous). 4. Art of Effective communication: A. Choosing words B. Voice C. Modulation D. Clarity E. Time F. Simplification of words. 5. Technical Communication.	
5	September	5th week	29, 30 31	Unit-2 Soft Skills for Professional Excellence	1. Introduction, Soft Skills and Hard Skills. 2. Importance of soft skills	
6		1st week	5,6,7		3. Life skills: Self-awareness and Self-analysis, adaptability, resilience, emotional intelligence and empathy etc. 4. Applying soft skills across cultures.	
7		2nd week	12	Class Test	Class Test-1	
			13	Unit-3: Reading Comprehension	Section-1 Short Stories 1. "The Gift of the Magi" by O. Henry	
8		3rd week	19, 20, 21	Comprehension, vocabulary enhancement and grammar exercises based on reading of the following texts	Section-1 Short Stories 1. "The Gift of the Magi" by O. Henry. 2. "Uncle Podger Hangs a Picture" Jerome K. Jerome	

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9	September	4th week	26,27,28	Unit-3: Reading Comprehension: Comprehension, vocabulary enhancement and grammar exercises based on reading of the following texts	2. "Uncle Podger Hangs a Picture" Jerome K. Jerome Section-2 Poetry 1. "Night of the Scorpion" by Nissim Ezekiel 2. "Stopping by Woods on a Snowy Evening" by Robert Frost.	
10		1st week	3		3. "Where the Mind is Without Fear" by Rabindranath Tagore	
11	October	2nd week	4,5	Unit-4 Professional Writing & Unit -5 Vocabulary and Grammar	1. The art of précis writing.	
			10, 11		The art of Precis Writing 2. Letters: business	
12		3rd week	18	Class Test	Class Test-2	
			19	Unit-4 Professional Writing & Unit -5 Vocabulary and Grammar	2. Letters: business	
13		4th week	24, 25, 26		2. Letters: personal. 3. Drafting e-mail, Notices, minutes of a meeting etc.	
14	November	1st week	1	Unit-5 Vocabulary and Grammar	1. Glossary of administrative terms (English and Hindi).	
15		2nd week	House Test			
16		3rd week	14, 16		2. One-word substitution, Idioms and phrases etc.,	
17		4th week	21, 22, 23		3. Parts of speech, Active and passive voice,	
18		5th Week	28, 29, 30	Unit-5 Vocabulary and Grammar	Active and passive voice, tenses etc., Punctuation.	

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Distt. Kangra H.P. 176096
Lesson Plan
(Labs/Workshop)

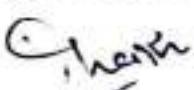| Name of Teacher:-		Designation:- Lecturer P.I. and V.C.			
Name of Lab/Workshop:-		Class/Branch:- Civil Engg/ 1st		Group:- G1 and G2	
Sr. No.	Description of Practical Job		Date		Remarks
			G1	G2	
1	Introduction to Physical EducationMeaning & definition of Physical Education o Aims & Objectives of Physical Education o Changing trends in Physical Education		07/08/2024 & 08/08/24	14/08/2024 & 21/08/24	
2	Olympic MovementAncient & Modern Olympics (Summer & Winter) o Olympic Symbols, Ideals, Objectives & Values o Awards and Honours in the field of Sports in India (Dronacharya Award, Arjuna Award, Dhayanchand Award, Rajiv Gandhi Khel Ratna Award etc		22/08/2024 & 23/08/24	29/08/2024 & 04/09/24	
3	Physical Fitness, Wellness & LifestyleMeaning & Importance of Physical Fitness & Wellness o Components of Physical fitness o Components of Health related fitness o Components of wellness o Preventing Health Threats through Lifestyle Change o Concept of Positive Lifestyle		08/05/2024	08/11/2024	
4	Fundamentals of Anatomy & Physiology in Physical Education, Sports and YogaDefine Anatomy, Physiology & Its Importance o Effect of exercise on the functioning of Various Body Systems (Circulatory System, Respi- ratory System, Neuro-Muscular		12/11/23 and 19/11/23	18/11/23 and 25/11/23	
5	Kinesiology, Biomechanics & SportsMeaning & Importance of Kinesiology & Biomechanics in Physical Edu & Sports o Newton's Law of Motion & its application in sports o Friction and its effects in Sports		09/19/2024	09/25/2024	
6	PosturesMeaning and Concept of Postures o Causes of Bad Posture o Advantages & disadvantages of weight training o Concept & advantages of Correct Posture o Common Postural Deformities Knock Knee, Flat Foot, Round Shoulders, Lordosis, Ky- phosis, Bow Legs and Scoliosis o Corrective Measures for Postural Deformities		26/09/2024	10/03/2024	
7	YogaMeaning & Importance of Yoga o Elements of Yoga o Introduction - Asanas, Pranayama, Meditation & Yogic Kriyas o Yoga for concentration & related Asanas (Sukhasana, Tadasana, Padmasana & Sha- shankasana) o Relaxation Techniques for improving concentration Yognidra		10/03/2024	10/09/2024	

8	Yoga & LifestyleAsanas as preventive measures o Hypertension Tadasana, Vajrasana, Pavan Muktasana, Ardha Chakrasana, Bhujangasana, Sharasana o Obesity Procedure, Benefits & contraindications for Vajrasana, Hastasana, Trikonasana, Ardh Matsyendrasana o Back Pain Tadasana, Ardh Matsyendrasana, Vakrasana, Shalabhasana, Bhujangasana o Diabetes Procedure, Benefits & contraindications for Bhujangasana, Paschimottasana, Pavan Muktasana, Ar	10/10/2024	10/16/2024	
9	Training and Planning in SportsMeaning of Training o Warming up and limbering down o Skill, Technique & Style o Meaning and Objectives of Planning o Tournament – Knock-Out, League/	10/17/2024	10/23/2024	
10	Psychology & SportsDefinition & Importance of Psychology in Physical Edu & Sports o Define & Differentiate Between Growth & Development o Adolescent Problems & Their Management o Emotion Concept, Type & Controlling of emotions o Meaning, Concept & Types of Aggressions in Sports o Psychological benefits of exercise	10/24/2024	10/30/2024	
11	Doping Meaning and Concept of Doping o Prohibited Substances & Methods o Side Effects of Prohibited Substances	10/31/2024	11/06/2024	
12	Sports Medic. iFirst Aid – Definition, Aims & Objectives o Sports injuries Classification, Causes & Prevention o Management	11/07/2024	11/13/2024	
13	Sports / GamesFollowing sub topics related to any one Game/Sport of choice of student out of Athletics, Badminton, Basketball, Chess, Cricket, Kabaddi, Lawn Tennis, Swimming, Table Tennis, Vol leyball, Yoga etc o History of the Game/Sport o Latest General Rules of the Game/Sport 36 o Specifications of Play Fields and Related Sports Equipment o Important Tournaments and Venues o Sports Personalities o Proper Sports Gear	14/11/2024 & 21/11/2024 28/11/2024	20/11/2024 &27/11/2024 &02/12/2024	
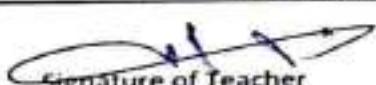
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Govt. Polytechnic Talwar
Distt. Kangra H.P. 176096
Lesson Plan
Session:August-2024 To December-2024
(Labs/Workshop)

Name of Teacher:-	Designation:- Lecturer S.S. and V.C.				
Name of	Class/Branch:- Civil Engg/ 1st Semester		Group:- G1 and G2		
Sr. No.	Description of Practical job		Date		Remarks
			G1	G2	
1	Introduction to Physical EducationMeaning & definition of Physical Education. o Aims & Objectives of Physical Education. o Changing trends in Physical Education		2/8/2024 &9/08/2024	1/8/2024 & 8/8/2024	
2	Olympic MovementAncient & Modern Olympics (Summer & Winter.) o Olympic Symbols, Ideals, Objectives & Values. o Awards and Honours in the field of Sports in India		16/8/2024 &23/08/2024	22/08/2024 & 29/08/2024	
3	Physical Fitness, Wellness & LifestyleMeaning & Importance of Physical Fitness & Wellness. o Components of Physical fitness. o Components of Health related fitness.		30/8/2024 & 6/09/2024	5/9/2024	
4	Fundamentals of Anatomy & Physiology in Physical Education, Sports and YogaDefine Anatomy, Physiology & Its Importance. o Effect of exercise on the functioning of Various Body		13/9/2024 & 20/09/2024	12/9/2024	
5	Kinesiology, Biomechanics & SportsMeaning & Importance of Kinesiology & Biomechanics in Physical Edu. & Sports. o Newton's Law of Motion & its application in sports.		27/9/2024 &	19/09/2024	
6	PosturesMeaning and Concept of Postures. o Causes of Bad Posture. o Advantages & disadvantages of weight training. o Concept & advantages of Correct Posture.		4/10/2024	26/09/2024	
7	YogaMeaning & Importance of Yoga. o Elements of Yoga. o Introduction - Asanas, Pranayama, Meditation & Yogic Kriyas		11/10/2024	3/10/2024	
8	Yoga & LifestyleAsanas as preventive measures. o Hypertension: Tadasana, Vajrasana, Pavan Muktasana, Ardha Chakrasana, Bhujangasana, Sharasana. o Obesity: Procedure, Benefits & contraindications for		18/10/2024	10/10/2024	
9	o Warming up and limbering down. o Skill, Technique & Style. o Meaning and Objectives of Planning. o Tournament – Knock-Out, League/		25/10/2024	24/10/2024	

10	Psychology & Sports:Definition & Importance of Psychology in Physical Edu. & Sports. o Define & Differentiate Between Growth & Development o Adolescent Problems & Their Management. o Emotion: Concept, Type & Controlling of emotions.		1/11/2024	7/11/2024	
11	Doping Meaning and Concept of Doping. o Prohibited Substances & Methods. o Side Effects of Prohibited Substances		8/11/2024	14/11/2024	
12	Sports Medic. iFirst Aid – Definition, Aims & Objectives. o Sports injuries: Classification, Causes & Prevention. o Management		22/11/2024	21/11/2024	
13	Game/Sport of choice of student out of: Athletics, Badminton, Basketball, Chess, Cricket, Kabaddi, Lawn Tennis, Swimming, Table Tennis, Vol leyball, Yoga etc. o History of the Game/Sport.		29/11/2024	28/11/2024	

Signature of Teacher Dhatu,

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