

Government Polytechnic Nanakpur(PKL)

Lesson Plan

Name- Mrs. Kavita

Discipline- Applied Science

Semester – 2nd Sem

Subject –Applied Mathematics

Duration –16 weeks (2022-23)

Work load (per week)-: lectures-04

Week	Theory			
	Lect. day	Topic		
1st	1st	UNIT I Differential Calculus Definition of function; Concept of limits (Introduction only) and problems related to four standard limits only.		
	2nd	Differentiation of x^n $\sin x, \cos x, e^x$ by first principle.		
	3rd	Differentiation of sum, product and quotient of functions.		
	4th	Revision Unit- I		
2nd	1st	Revision Unit- I		
	2nd	UNIT II Differential Calculus and Its Applications Differentiation of trigonometric functions, inverse trigonometric functions.		
	3rd	Logarithmic differentiation, successive differentiation (upto 2nd order)		
	4th	Application of differential calculus in: (a) Rate measures		

3 rd	1 st	(b) Maxima and minima		
	2 nd	Revision Unit- 2		
	3 rd	Revision Unit- 2		,
	4 th	Revision Unit- 2		
4 th	1 st	UNIT III Integral Calculus Integration as inverse operation of differentiation with simple examples.		
	2 nd	Simple standard integrals and related problems, Integration by Substitution method and Integration by parts.		
	3 rd	Evaluation of definite integrals with given limits. $\pi/2 \pi /2 \pi/2$ Evaluation of $\int \sin x$ $\int \cos x$, $\int \sin mx$ $\int \cos nx$ $\int x \sin x$ $\int x \cos x$ $\int x^2 \sin x$ $\int x^2 \cos x$ using formulae without proof (m and n being positive integers only) using pre-existing mathematical models.		
	4 th	Revision Unit- 3		
5 th	1 st	Revision-Unit-3		
	2 nd	Revision-Unit-3		
	3 rd	UNIT IV Application of Integration, Numerical Integration and Differential Equations Applications of integration: for evaluation of area under a curve and axes (Simple problems).		
	4 th	Numerical integration by Trapezoidal Rule		
6 th	1 st	Simpson's 1/3rd Rule using pre-existing mathematical models.		

	2 nd	Revision-Unit-4		
	3 rd	Revision-Unit-4		
	4 th	Revision-Unit-4		
7 th	1 st	Differential Equations Definition, order, degree, Type of differential Equations, linearity,		
	2 nd	Formulation of ordinary differential equation (up to 1st order), solution of ODE (1st order) by variable separation method.		
	3 ^{rd^h}	Revision-Unit-4		
	4 th	Revision-Unit-4		
8 th	1 st	UNIT V Statistics and Software Statistics Measures of Central Tendency: Mean, Median, Mode		
	2 nd	Measures of Dispersion: Mean deviation		
	3 rd	Standard Deviation, variance, coefficient of standard deviation		
	4 th	Revision Statistics		
9 th	1 st	Revision Statistics		
	2 nd	Revision Statistics		
	3 rd	Software SciLab software – Theoretical Introduction.		
	4 th	Basic difference between MATLAB and SciLab software,		
10 TH	1 st	Calculations with MATLAB or SciLab - (a) Representation of matrix (2×2 order), (b) Addition, Subtraction of matrices (2×2 order) in MATLAB or SciLab		

	<i>2nd</i>	Revision- MATLAB		
	<i>3rd</i>	Revision- MATLAB		
	<i>4th</i>	Revision- MATLAB		
11TH	<i>1st</i>	Revision- MATLAB		
	<i>2nd</i>	Revision- MATLAB		
	<i>3rd</i>	Functions and limits		
	<i>4th</i>	Differentiation of Trigonometric function		
12th	<i>1st</i>	Differentiation of logarithmic function and infinite series function		
	<i>2nd</i>	Integration of simple standard function		
	<i>3rd</i>	Integration of trigonometric function		
	<i>4th</i>	Integration by parts		
13th	<i>1st</i>	Application of integration		
	<i>2nd</i>	Numerical integration		
	<i>3rd</i>	Differential Equation		
	<i>4th</i>	Solution of ODE in differential Equation		
14th	<i>1st</i>	Revision- Unit-1		
	<i>2nd</i>	Revision- Unit-1		
	<i>3rd</i>	Revision- Unit-2		
	<i>4th</i>	Revision- Unit-2		

15th	<i>1st</i>	Revision- Unit-3		
	<i>2nd</i>	Revision- Unit-3		
	<i>3rd</i>	Revision- Unit-4		
	<i>4th</i>	Revision- Unit-4		
16th	<i>1st</i>	Revision- Unit-5		
	<i>2nd</i>	Revision- Unit-5		
	<i>3rd</i>	Revision- Unit-5		
	<i>4th</i>	Revision- Unit-5		

LESSON PLAN

Name Of The Faculty : Mrs. Pooja Saini

Discipline : CSE/Civil/Mech./ECE/Electrical Engg.

Semester : 2nd Sem

Subject : Applied Physics-II

Lesson Plan Duration : -- weeks (from March,2023 to June, 2023)

Work Load (Lecture/Practical) per week (in hours) : Lecture – 02 , Practicals -02

Week	Theory		Practical	
	Lecture day	Topic (including assignment/test)	Practical day	Topic
1	1	<ul style="list-style-type: none"> Wave motion - Introduction 	1	Familiarization with apparatus (resistor, rheostat, key, ammeter, volt meter, telescope, microscope etc)
	2	<ul style="list-style-type: none"> Terms - displacement, amplitude, time period, frequency, wavelength, wave velocity, 		
	3	<ul style="list-style-type: none"> Transverse wave motion 		
	4	<ul style="list-style-type: none"> longitudinal wave motion 		
2	5	<ul style="list-style-type: none"> Difference b/w Transverse & longitudinal wave motion 		
	6	<ul style="list-style-type: none"> relationship among wave velocity, frequency and wave length . Simple Harmonic Motion (SHM): definition, examples 		
3	7	<ul style="list-style-type: none"> Cantilever Vibrations & its types 	2	To find the time period of simple pendulum
	8	<ul style="list-style-type: none"> Acoustics of buildings – reverberation reverberation time 		
	9	<ul style="list-style-type: none"> Echo, noise, coefficient of absorption of sound 		

	10	<ul style="list-style-type: none"> • methods to control reverberation time. 		
	11	<ul style="list-style-type: none"> • Ultrasonics 	3	To study variation of time period of a simple pendulum with change in length of pendulum
	12	<ul style="list-style-type: none"> • Engineering applications of Ultrasonics 		
4	13	<ul style="list-style-type: none"> • Optics – Introduction 		
	14	<ul style="list-style-type: none"> • Reflection of Light • Refraction of Light 		
	15	<ul style="list-style-type: none"> • refractive index • Total internal reflection • Critical angle 	4	To find and verify the time period of cantilever
	16	<ul style="list-style-type: none"> • Applications of TIR • conditions for TIR 		
5	17	<ul style="list-style-type: none"> • Super Position of Waves, Definition of Interference, Diffraction and Polarization of Waves • Microscope, telescope& their uses 		
	18	<ul style="list-style-type: none"> • Introduction of Lens, lens Formula (no derivation), Power of Lens • Based numerical 		
	19	<ul style="list-style-type: none"> • Assignment – Ultrasonics 	5	To find Ohm’s laws by plotting a graph between voltage and current
	20	<ul style="list-style-type: none"> • Test 		
6	21	<ul style="list-style-type: none"> • Electrostatics and Electricity – Introduction 		
	22	<ul style="list-style-type: none"> • Coulombs law • Unit charge 		
7	23	<ul style="list-style-type: none"> • Electric field • Electric lines of force,its properties 	6	To study colour coding scheme of resistance
	24	<ul style="list-style-type: none"> • Electric Intensity • Electric Flux 		
8	25	<ul style="list-style-type: none"> • Electric potential • Electric field intensity due to a point charge. 		
	26	<ul style="list-style-type: none"> • Gauss law(Statement and derivation) 		
	27	<ul style="list-style-type: none"> • Capacitor • Capacitance 	7	To verify laws of resistance in series combination
9	28	<ul style="list-style-type: none"> • Series combination of capacitors 		
	29	<ul style="list-style-type: none"> • parallel combination of capacitors • Ohm’s Laws 		
10	30	<ul style="list-style-type: none"> • Numerical based on Grouping of capacitors 		

	31	<ul style="list-style-type: none"> • Classification of Materials and their Properties 	8	To verify laws of resistance in parallel combination
11	32	<ul style="list-style-type: none"> • Types of materials • Conductor, Semi-Conductor, Insulator and Dielectric with examples 		
	33	<ul style="list-style-type: none"> • intrinsic and extrinsic semiconductors (Introduction only) 	9	To find resistance of galvanometer by half deflection method
12	34	<ul style="list-style-type: none"> • Introduction to Magnetism • Types of magnetic materials • Dia materials with example 		
	35	<ul style="list-style-type: none"> • para and ferromagnetic materials with examples 	10	To verify laws of reflection of light using mirror
	36	<ul style="list-style-type: none"> • Magnetic field • magnetic Flux 		
13	37	<ul style="list-style-type: none"> • Magnetic lines of force 	11	To verify laws of refraction using glass slab
	38	<ul style="list-style-type: none"> • Electromagnetic induction (Definition) 		
	39	Test	12	To find the focal length of a concave lens using a convex lens
14	40	Modern Physics - Introduction		
	41	<ul style="list-style-type: none"> • Lasers: full form, Principle, absorption, spontaneous emission, stimulated emission, population inversion • Engineering and applications of laser 	13	revision
15	42	<ul style="list-style-type: none"> • Fibre optics – Definition, principle, parts, light propagation, fiber types (mono-mode, multi-mode) • Applications in medical, tele-communication and sensors 		
	43	<ul style="list-style-type: none"> • Introduction to nanotechnology- Definition of nano materials with examples, properties at nano scale 	14	revision
	44	<ul style="list-style-type: none"> • Applications of nanotechnology(brief) 		
16		<ul style="list-style-type: none"> • Revision and test 	15	revision

Government Polytechnic Nanakpur, Panchkula

Lesson Plan

Name- Ms. Manju Dahiya

Discipline- Applied Science

Semester – 2nd Sem.

Subject –EVS & DM

Duration – 16 weeks (2022-23)

Work load (per week):- Lectures-02

Week	Theory	
	Lect. day	Topic
1 st	1 st	UNIT I Introduction: Basics of ecology, eco system- concept,
	2 nd	sustainable development,
2 nd	1 st	Sources, advantages, disadvantages of renewable and nonrenewable energy.
	2 nd	Rain water harvesting
3 rd	1 st	Deforestation – its effects & control measures
	2 nd	Revision
4 th	1 st	Revision
	2 nd	Revision
5 th	1 st	UNIT II Air and Noise Pollution: Air Pollution: Source of air pollution.Effect of air pollution on human health,
	2 nd	economy, Air pollution control methods.
6 th	1 st	Noise Pollution: Source of noise pollution,
	2 nd	Unit of noise,
7 th	1 st	Effect of noise pollution, Acceptable noise level,

8 th	2 nd	Different method of minimizing noise pollution.
	1 st	Water Pollution: Impurities in water, Cause of water pollution,
9 th	2 nd	Source of water pollution. Effect of water pollution on human health,
	1 st	Concept of DO, BOD, COD. Prevention of water pollution-
10 th	2 nd	Water treatment processes, Sewage treatment. Water quality standard.
	1 st	Soil Pollution :Sources of soil pollution, Effects and Control of soil pollution,
11 th	2 nd	Types of Solid waste- House hold, Industrial, Agricultural, Biomedical,
	1 st	Disposal of solid waste,
12 th	2 nd	Solid waste management E-waste, E – waste management
	1 st	UNIT IV Impact of Energy Usage on Environment
13 th	2 nd	Global Warming, Green House Effect,
	1 st	Depletion of Ozone Layer, Acid Rain. Eco-friendly Material,
14 th	2 nd	Recycling of Material,
	1 st	Concept of Green Buildings,
15 th	2 nd	Concept of Carbon Credit & Carbon footprint.
	1 st	UNIT V Disaster Management A. Different Types of Disaster: Natural Disaster: such as Flood, Cyclone, Earthquakes and Landslides
16 th	2 nd	Man-made Disaster: such as Fire, Industrial Pollution, Nuclear Disaster, Biological Disasters,
	1 st	Accidents (Air, Sea Rail & Road), Structural failures(Building and Bridge), War & Terrorism etc.
	2 nd	B. Disaster Preparedness: Disaster Preparedness Plan Prediction, Early Warnings and Safety Measures of Disaster Psychological response and Management (Trauma, Stress, Rumour and Panic)

Government Polytechnic Nanakpur (Panchkula)

Lesson Plan

Name- Ms.Manju Dahiya

Discipline- Applied Science

Semester – 2nd Sem

Subject –Applied chemistry

Duration – 16 weeks (2022-23)

Work load (per week):- Lectures-03 Practical :02

Week	Theory		Practical	
	Lect. day	Topic	Lect. day	Topic
1 st	1 st	UNIT 1 Atomic Structure, Periodic Table and Chemical Bonding.	1 st	To prepare standard solution of oxalic acid.
	2 nd	Bohr's model of atom (qualitative treatment only), dual character of matter: derivation of de-Broglie's equation,	2 nd	To prepare standard solution of oxalic acid.
	3 rd	Heisenberg's Principle of Uncertainty,		
2 nd	1 st	modern concept of atomic structure: definition of orbitals, shapes of s, p and d-orbitals, quantum numbers and their	1 st	To prepare standard solution of oxalic acid.
	2 nd	Electronic configuration: Aufbau and Pauli's exclusion principles and Hund's rule, electronic configuration of elements up to atomic number 30.	2 nd	To prepare standard solution of oxalic acid.
	3 rd	Modern Periodic law and Periodic table,		
3 rd	1 st	classification of elements into s, p, d and f-blocks, metals, non-metals and metalloids (periodicity in properties excluded).	1 st	To dilute the given KMnO ₄ solution

	2 nd	Chemical bonding: cause of bonding, ionic bond, covalent bond, and metallic bond (electron sea or gas model), Physical properties of ionic, covalent and metallic substances.		To dilute the given KMnO ₄ solution
	3 rd	Revision	2 nd	
3 rd	1 st	UNIT II Metals and Alloys: Metals: mechanical properties of metals such as conductivity, elasticity, strength and stiffness, luster, hardness, toughness, ductility, malleability, brittleness, and impact resistance and their uses.	1 st	To dilute the given KMnO ₄ solution
	2 nd	Definition of a mineral, ore, gangue, flux and slag.	2 nd	To dilute the given KMnO ₄ solution
	3 rd	Metallurgy of iron from haematite using a blast furnace. Commercial varieties of iron.	1 st	To find out the strength in grams per litre of an unknown solution of sodium hydroxide using a standard (N/10) oxalic acid solution.
4 th	1 st	Alloys: definition, necessity of making alloys, composition, properties and uses of duralumin and steel.	2 nd	To find out the strength in grams per litre of an unknown solution of sodium hydroxide using a standard (N/10) oxalic acid solution.
	2 nd	Heat treatment of steel-normalizing, annealing, quenching, tempering.	1 st	To find out the strength in grams per litre of an unknown solution of sodium hydroxide using a standard (N/10) oxalic acid solution.
	3 rd	UNIT III Water, Solutions, Acids and Bases	2 nd	To find out the strength in grams per litre of an unknown solution of sodium hydroxide using a standard (N/10) oxalic acid solution.

	4 th	Solutions: definition, expression of the concentration of a solution in percentage (w/w, w/v and v/v), normality, molarity and molality and ppm. Simple problems on solution preparation.	1 st	To find out the total alkalinity in parts per million (ppm) of a water sample with the help of a standard sulphuric acid solution.
5 th	1 st	Arrhenius concept of acids and bases, strong and weak acids and bases, pH value of a solution and its significance, pH scale. Simple numerical problems on pH of acids and bases.	2 nd	To find out the total alkalinity in parts per million (ppm) of a water sample with the help of a standard sulphuric acid solution.
	2 nd	Hard and soft water, causes of hardness of water, types of hardness – temporary and permanent hardness, expression of hardness of water, ppm unit of hardness; disadvantages of hard water; removal of hardness: removal of temporary hardness by boiling and Clark's method;		To determine the total hardness of given water sample by EDTA method
	3 rd	removal of permanent hardness of water by Ion-Exchange method; boiler problems caused by hard water: scale and sludge formation, priming and foaming, caustic embrittlement; water sterilization by chlorine, UV radiation and RO.		To determine the total hardness of given water sample by EDTA method
6 th	1 st	UNIT IV Fuels and Lubricants 4.1 Fuels: definition and classification of higher and lower calorific values, units of calorific value, characteristics of an ideal fuel.		To determine the amount of total dissolved solids(TDS) in ppm in a given sample of water gravimetrically
	2 nd	Petroleum: composition and refining of petroleum;		To determine the amount of total dissolved solids(TDS) in ppm in a given sample of water

			gravimetrically
	3 rd	<i>composition, properties and uses of CNG, PNG, LNG, LPG; relative advantages of liquid and gaseous fuels over solid fuels. Scope of hydrogen as future fuel.</i>	To determine the pH of different solutions using a digital pH meter.
7 th	1 st	<i>Lubricants- Functions and qualities of a good lubricant, classification of lubricants with examples;</i>	<i>To determine the pH of different solutions using a digital pH meter.</i>
	2 nd	<i>Lubrication mechanism (brief idea only); physical properties (brief idea only) of a lubricant: oiliness, viscosity, viscosity index, flash and fire point, ignition temperature, pour point.</i>	<i>To determine the calorific value of a solid/liquid fuel using a Bomb calorimeter.</i>
	3 rd	<i>Lubrication mechanism (brief idea only); physical properties (brief idea only) of a lubricant: oiliness, viscosity, viscosity index, flash and fire point, ignition temperature, pour point.</i>	<i>To determine the calorific value of a solid/liquid fuel using a Bomb calorimeter.</i>

8 th	1 st	UNIT V	
	2 nd	Polymers and Electrochemistry	To determine the viscosity of a lubricating oil using a Redwood viscometer
9 th	3 rd	<i>Polymers and Plastics: definition of polymer, classification, addition and condensation</i> <i>polymerization; preparation properties and uses of polythene, PVC, Nylon-66, Bakelite;</i>	To determine the viscosity of a lubricating oil using a Redwood viscometer
	1 st	definition of plastic, thermoplastics and thermosetting polymers; natural rubber and	To prepare a sample of Phenol-formaldehyde resin (Bakelite)/Nylon-66 in the lab.
	2 nd	neoprene, other synthetic rubbers (names only).	
10 th	3 rd	Corrosion: definition, dry and wet corrosion	To prepare a sample of Phenol-formaldehyde resin (Bakelite)/Nylon-66 in the lab.
	1 st	factors affecting rate of corrosion, methods of	To prepare a sample of Phenol-formaldehyde resin (Bakelite)/Nylon-66 in the lab.
	2 nd	prevention of corrosion	
	3 rd	hot dipping, metal cladding, cementation, quenching, cathodic protection methods	To prepare a sample of Phenol-formaldehyde resin (Bakelite)/Nylon-66 in the lab.
11 th	1 st	methods of	Viva Voice
	2 nd	prevention of corrosion—hot dipping, metal cladding, cementation, quenching, cathodic protection methods	
	3 rd	Introduction and application of nanotechnology: nano-materials and their classification, applications of nanotechnology in various engineering applications	Viva Voice
12 th	1 st	Revision	Viva Voice
	2 nd	Revision	

13 th	3 rd	Revision	Viva Voice
	1 st	Revision	
	2 nd	Revision	Viva Voice
14 th	3 rd	Revision	Viva Voice
	1 st		Viva Voice
	2 nd	Revision	
15 th	3 rd	Revision	Viva Voice
	1 st	Revision	Revision and file checking
	2 nd		
16 th	3 rd	Revision	Revision and file checking
	1 st	Revision	
	2 nd	Revision	Revision and file checking

Lesson Plan

Discipline : Computer Engg.
Semester : 2nd
Subject : **Multimedia Applications**
Lesson Plan Duration : 15 weeks

Workload (Lecture / Practical) per week (in hours): Lectures-02, Practical-04

Week	Theory		Practical	
	Lecture day	Topic (including assignment / test)	Practical Day	Topic
1 st	1 st	Definitions and Classification Multimedia Hardware	1st	Study of Adobe Flash Tools; Frame by Frame Animation; Motion Tweening; Simple Tweening;
	2 nd	Revision		
	3 rd	Multimedia Software		
2 nd	4 th	Revision	2nd	Using Guide Layer; Shape Tweening; Simple Tweening; Shape Hint; Masking; Single Layer
	5 th	Meetings the analog signals		
	6 th	Revision		
3 rd	7 th	Search of Digital recording	3rd	Masking; Double Layer Masking; Movie Clip; Buttons; Publishing of Flash Movie
	8 th	CD ROMs.		
	9 th	Revision		
4 th	10 th	Digital Audio Technologies	4th	Action Scripts 1. Simple functions: Stop, Play, Go to, Get URL, Call
	11 th	Sound Cards		
	12 th	Playback		
5 th	13 th	Revision	5th	
	14 th	Revision		
	15 th	Revision		
6 th	16 th	Revision	6th	2. Properties - _x, _y, _x Scale, _y Scale, _alpha
	17 th	Revision		
	18 th	Revision		

Week	Theory		Practical	
	Lecture day	Topic (including assignment / test)	Practical Day	Topic
7 th	19 th	MIDI	7th	3. Event handling
	20 th	Working with MIDI.		
	21 st	Multimedia texts		
8 th	22 nd	Coloring	8th	Image Editing Software (Adobe Photoshop)
	23 rd	Digital Imaging Fundamentals		
	24 th	Digital Image Development		
9 th	25 th	Revision	9th	Image Editing Software (Adobe Photoshop)
	26 th	Revision		
	27 th	Revision		
10 th	28 th	Image Editing	10th	Image Editing Software (Adobe Photoshop)
	29 th	Revision		
	30 th	Revision		
11 th	31 st	Animation fundamentals Animation Software tools	11th	Study of Adobe Photoshop tools
	32 nd	Animation Techniques		
	33 rd	Revision		
12 th	34 th	Digital video fundamentals	12th	2. Image editing
	35 th	Digital video production techniques.		
	36 th	Revision		
13 th	37 th	M/M Project Design Concepts	13th	2. Image editing
	38 th	Revision		
	39 th	Authoring		
14 th	40 th	Project Planning	14th	3. Applying special effects.
	41 st	Project Planning		
	42 nd	Costing – Multimedia team.		
15 th	43 rd	Revision	15th	Revision
	44 th	Revision		
	45 th	Revision		

