

LESSON PLAN

NAME OF FACULTY: Ms Minakshi

SEMESTER: Ist YEAR

SUBJECT: ENGINEERING GRAPHICS

LESSON PLAN DURATION: 35 WEEKS

WORK LOAD (LECTURE/PRACTICAL) PER WEEK: (3 Practical)

WEEK	PRACTICALS		DRAWING SHEET
	LECTURE NOS	TOPIC	
1 st	1	Unit-1- INTRODUCTION TO ENGINEERING DRAWING	06
	2	Definition of Engineering Drawing, Introduction to drawing instruments	
	3	Materials, layout and sizes of drawing sheets and drawing boards,	
2 nd	4	Engineering graph book, different grades of pencils to be used.	
	5	Different types of lines in engineering drawing as per BIS specifications	
	6	Practice of vertical, horizontal and inclined lines	
3 rd	7	Practice of vertical, horizontal and inclined lines	
	8	Principles of dimensioning: Types, elements, placing, different methods of dimensioning	
	9	Practice of geometrical figures such as –triangles, rectangles,	
4 th	10	circles, ellipses and parabola,	
	11	Hexagonal, pentagon with the help of drawing instruments.	
	12	Definition and classification of lettering	
5 th	13	single stroke vertical	
	14	and inclined lettering at 75 ^o (alphabet)	
	15	and inclined lettering at 75 ^o (numerals)	
6 th	16	Freehand letter writing	
	17	sketches of various kind of objects in graph Sketch book/graph paper	
	18	sketches of various kind of objects in graph -graph paper	
7 th	19	Revised Unit-1	
	20	Revised Unit-1	
	21	SESSIONAL TEST -1	
8 th	22	Unit-2- GRAPHICS USING CAD, Meaning, requirement of computer graphics	06
	23	CAD, screen structure and toolbars in AutoCAD,	
	24	coordinate system, Drawing Limits, Units	
25	Practice of LINE command,		

9 th	26	Coordinates-Absolute, incremental, polar.		
	27	POLYLINE,		
10 th	28	CIRCLE(3P,2P, TTR),		
	29	ARC, ELLIPSE		
	30	Using above geometrical commands for making figure e.g. triangle,		
11 th	31	Using above geometrical commands for making figure e.g. rectangle, hexagon		
	32	Using above geometrical commands for making figure e.g. pentagon, parabola.		
	33	Editing commands-Scale, erase,		
12 th	34	Editing commands copy, stretch,		
	35	Editing commands lengthen and explode		
	36	Use of SNAP, GRID		
13 th	37	ORTHO mode for selection of points quickly.		
	38	Use of these modes while picking points in LINE, CIRCLE, commands.		
	39	Use of these modes while picking points in PLINE, ARC, ELLIPSE etc commands.		
14 th	40	Revised Unit-2		
	41	Revised Unit-2		
	42	SESSIONAL TEST -2		
15 th	43	Unit-3- Scales		01
	44	Scales-their needs and importance (theoretical instructions),		
	45	Types of scales,		
16 th	46	Definition of Representative Fraction (R.F.) and length of scale.		
	47	Construction of Plain and diagonal scale		
	48	Unit-4- Orthographic Projection		
17 th	49	Theory of orthographic projections (Elaborate theoretical instructions)		08
	50	Projections of points in different quadrants		
	51	Projection of line (1 st angle and 3 rd angle) a) Line parallel to both planes b) Line perpendicular to any one of the principal plane c) Line inclined to any one of the principal plane		
18 th	52	d parallel to other an		
	53	Projection of Solid-Cube, Cuboids ,		
	54	Cone, Prism, pyramid		
19 th	55	Three views of orthographic projections of different objects (At least one sheet in 3 rd angle)		
	56	Three views of orthographic projections of different objects (At least one sheet in 3 rd angle)		
	57	Unit-5- Sectioning and Identification of surfaces		
20 th	58	Identifications of surfaces, Importance and		02
	59	salient features of sectioning of objects		

	60	Description of full section, half section partial or broken out sections, Offset	
21th	61	Sections, revolved sections and removed sections	03
	62	Unit-6- Isometric Views	
	63	Fundamental of isometric projections	
22nd	64	and isometric scale	01
	65	Isometric views of different objects	
	66	AutoCAD for the isometric views sheets. Making single computer sheet showing all the three views and an isometric (in single split screen view) of any object showing understanding of use of AutoCAD in making isometric views – at least 1 sheet	
23rd	67	Unit-7- Common Symbols and conventions used in Engineering	01
	68	Civil Engineering sanitary fitting symbols	
	69	Electrical fitting symbols for domestic interior installations	
24th	70	Electrical fitting symbols for domestic interior installations	01
	71	Safety symbols used in engineering works	
	72	Unit-8- Development of surfaces (cylinder)	
25th	73	Development of surfaces (cuboids , cone)	05
	74	Parallel line, radial line method The teacher may explain both methods but will use one method in sheet in classroom and other method on sketchbook	
	75	Unit-9- Detailed and assembly drawing	
26th	76	Principle and utility of detailed and assembly drawings	03
	77	Wooden joints i.e. corner mortise and tenon joint, Tee Halving joint, Mitre faced corner joint, Tee bridle joint ,	
	78	crossed wooden joint, cogged joint, dovetail joint, through Mortise and	
27th	79	tenon joint, furniture drawing – freehand and with the help of drawing instruments	03
	80	Making Wooden Joint sheets in AutoCAD, rendering & showing assembly animation at least 1 sheet	
	81	Unit-10- Screw threads and threaded fasteners	
28th	82	Thread Terms and Nomenclature a) Type of threads-external and internal threads, right and left hand threads (actual conventional representation), Single and multiple start thread.	03
	83	b) Different forms of screw threads –V threads (B.S.W. threads, B.A thread, American National and Metric thread), Square threads (Square, Acme, buttress and Knuckle thread	
	84	10.2) Nuts and Bolts a) Different views of hexagonal and square nuts. Square and hexagonal headed bolt	
29th	85	b) Assembly of Hexagonal ended bolt and Hexagonal nut with washer.	03
	86	c) Assembly of square headed bolt with hexagonal and with washer.	
	87	10.3) Locking Devices a) Different types of locking devices-Lock nut,	

30th	88	castle nut, split pin nut, locking Plate	
	89	Slotted nut and spring washer.	
	90	b) Foundations bolts-Rag bolt Lewis bolt, Curved bolt and eye bolt.	
31th	91	c) Drawing of various types of studs	03
	92	Unit-11- Keys and Cotters	
	93	various types of keys and cotters-weir practical application,	
32th	94	drawings of various keys and cotters showing keys and cotters in position	
	95	various types of Joints -Spigot and Socket Joints	
	96	-Gib and cotter joint -Knuckle joint	
33rd	97	Unit-12- Couplings	02
	98	Introduction to coupling, their use and types	
	99	Muff coupling	
34th	100	Flange coupling (protected)	
	101	Flexible Coupling	
	102	Revised Unit-3-6	
35th	103	Revised Unit-7-9	
	104	Revised Unit-10-12	
	105	SESSIONAL TEST	

Name of Faculty: Sh. Ajay

Discipline: Civil Engg.

Semester: 1st sem

Subject: Engg. Graphics

Week	Topic
1 st	Introduction to Engineering Drawing and Graphics Introduction to use and care of drawing instruments, drawing materials, layout and sizes of drawing sheets and drawing boards. b) Civil Engineering Sanitary fitting symbols c) Electrical fitting symbols for domestic interior installations. .
	1.2 Symbols and conventions- a) Conventions of Engineering Materials, Sectional Breaks and Conventional lines.
2 nd	1.3 Geometrical construction-geometrical figures such as triangles, rectangles, circles, ellipses and curves, hexagons
	, pentagons bisecting a line and arc , division of line and circle with the help of drawing instruments
3 rd	Technical Lettering of Alphabet and Numerals Definition and classification of lettering, Free hand (of height of 5,8,12 mm) and instrumental
	lettering (of height 20 to 35 mm): upper case and lower case, single and double stroke, vertical and inclined (Gothic lettering) at 75 degree to horizontal and with suitable height to width ratio 7:4.
4 th	Revision and sheet check
	Dimensioning 3.1 Necessity of dimensioning, method and principles of dimensioning (mainly theoretical instructions).

5 th	<p>3.2 Dimensioning of overall sizes, circles, threaded holes, chamfered surfaces, angles, tapered surfaces, holes, equally spaced on P.C.D., countersunk holes,</p> <p>counter bored holes, cylindrical parts, narrow spaces and gaps, radii, curves and arches.</p>
6 th	<p>Sessional test</p> <p>Scales 4.1 Scales –Needs and importance (theoretical instructions), Type of scales, Definition of .</p>
7 th	<p>Representative Fraction (R.F.) and Length of Scale. 4.2 To draw/construct plain and diagonal scales</p> <p>Revision and copy check</p>
8 th	<p>Orthographic Projections Theory of orthographic projections (Elaborate theoretical instructions). Three views of orthographic projections of different objects of given pictorial view of a block in 1st and 3rd angle. .</p> <p>1.3 Projection of Points in different quadrant</p>
9 th	<p>Projection of Straight Line (1st angle) i. Line parallel to both the planes. ii. Line perpendicular to any one of the reference plane and parallel to others iii. Line inclined to any one of the references and parallel to another plane. Projection of Plane – Different lamina like square rectangular, triangular, circle and</p> <p>Hexagonal pentagon. Trace of planes (HT and VT). Identification of surfaces</p>
10 th	<p>Sectioning Importance and salient features Drawing of full section, half section, partial or broken out sections,</p> <p>Offset sections, revolved sections and removed sections (theoretical only). 2.3 Orthographic sectional views of different objects.</p>

11 th	Sessional test
	Introduction of projection of right solids such as prism & pyramid (square, Pentagon, Hexagonal) cube, cone & cylinder (Axes perpendicular to H.P and parallel to V.P.)
12 th	pentagon pyramid, cylinder and cone (Section plane parallel to anyone reference planes and perpendicular to V.P. and inclined to H.P.)
	. Development of Surfaces – Development of lateral surfaces of right solids like cone, cylinder, pentagonal prism, pyramid and hexagonal pyramid (Simple problems)
13 th	Isometric Views 1 Fundamentals of isometric projections and isometric scale. Isometric views of different laminas like circle, pentagon and hexagon.
	Isometric views of different regular solids like cylinder, cone, cube, cuboid, pyramid and prism. Isometric views from given different orthographic projections(front, side and top view)
14 th	Introduction to AutoCAD
	Revision and check
15 th	Basic introduction and operational instructions of various commands in AutoCAD. At least two
	sheets of different objects on AutoCAD (given pictorial/isometric view of a block). AutoCAD skill of student is evaluated in internal assessment only not in external exam
16 th	Sessional Test
	Revision
	Revision
	Revision

Name of the Faculty

Mukesh Kumari

Discipline

Computer Engg

Semester and Subject

1st, FIT

Lesson Plan Duration

15 Weeks

Work Load (Lecture / Practical) per week (in hours)

Lectures-02, Practical-04

Week	Theory		Practical	
	Lecture Day	Topic (including assignment / test)	Practical Day	Topic
1st	1st	Brief history of development of computers, Definition of Computer	1st	Browser features, browsing, using various search engines, writing search queries
	2nd	Block diagram of a Computer		various e-governance/Digital India portals, understand their features, services offered
2nd	3RD	Hardware, Software, Booting: Cold and Hot Booting	2nd	Read Wikipedia pages on computer hardware components, look at those components in lab, identify them, recognize various ports/interfaces and related cables, etc.
	4TH	Interaction between the CPU and Memory with Input/Output devices		Using Administrative Tools/Control Panel Settings of Operating Systems
3rd	5TH	Function of CPU and major functional parts of CPU	3rd	Connect various peripherals (printer, scanner, etc.) to computer, explore various features of peripheral and their device driver software
	6TH	Memory, Bit, Nibble, Byte, KB, MB, GB, TB, PB, Functions of memory		Explore features of Open Office tools and MS-Office, create documents, create presentation, create spread sheet, using these features, do it multiple times
4th	7TH	Use of storage devices in a Computer	4th	Working with Conversion Software like pdf To Word, Word To PPT, etc.

	8TH	List types of memory used in a Computer, Importance of cache memory, CPU speed and CPU word length		Working with Mobile Applications – Searching for Authentic Mobile app, Installation and Settings, Govt. of India Mobile Applications
5th	9TH	Understanding browser, Introduction to WWW, efficient use of search engines	5th	Creating email id, sending and receiving mails with attachments
	10TH	awareness about Digital India portals (state and national portals) and college portals		Using Google drive, Google calendar
6th	11TH	Advantages of Email, Various email service providers	6th	Addition of n numbers and display result
	12TH	Creation of email id, sending and receiving emails, attaching documents with email and drive		To convert temperature from Celsius to Fahrenheit
7th	13TH	Effective use of Gmail, G-Drive, Google Calendar, Google Sites, Google Sheets	7th	To find Area and Perimeter of Square
	14TH	Online mode of communication using Google Meet & WebEx, Introduction to Programming		Swap Two Numbers
8th	15TH	Steps involved in problem solving, Definition of Algorithm, Definition of Flowchart, Steps involved in algorithm development	8th	find the smallest of two numbers
	16TH	differentiate algorithm and flowchart, symbols used in flowcharts, algorithm and flowcharts for simple problems		Find whether given number is Even or Odd

9th	17TH	Practice logic building using flowchart/algorithms, Test	9th	To print first n even Numbers
	18TH	Office Tools like LibreOffice/OpenOffice/MSOffice		find sum of series $1+2+3+\dots+N$
10th	19TH	OpenOffice Writer – Typesetting Text and Basic Formatting, Inserting Images, Hyperlinks,Bookmarks, Tables and Table Properties in Writer	10th	print multiplication Table of a number
	20TH	Test		generate first n Fibonacci terms $0, 1, 1, 2, 3, 5 \dots n$ ($n > 2$)
11th	21ST	Introducing LibreOffice/OpenOffice Calc, Working with Cells, Sheets, data, tables, using formulae and functions, using charts and graphics	11th	sum and average of given series of numbers
	22ND	OpenOffice Impress – Creating and Viewing Presentations, Inserting Pictures and Tables, SlideMaster and Slide Design, Custom Animation		Revision
12th	23RD	Introduction to Digital Marketing – Why Digital Marketing,	12th	Factorial of number n ($n! = 1 \times 2 \times 3 \times \dots \times n$)
	24TH	Characteristics of Digital Marketing, Tools for Digital Marketing		Armstrong Number
13th	25TH	Effective use of Social Media like LinkedIn, Google+, Facebook, Twitter	13th	Revision
	26TH	Features of Social media		Find whether given number is Prime or not
14th	27TH	Test	14th	Practical test.
	28TH	Advantages and Disadvantages of Social Media		Revision
15th	29TH	Revision	15th	Revision
	30TH	Revision		Revision

Lesson Plan

Name of Institute: C.M.R.A Govt. Polytechnic Education Society Sanghi, Rohtak

Name of the Faculty member : Prince Kumar

Discipline : Civil Engg

Semester : 1st sem

Subject : Engineering Graphics

Lesson Plan Duration : 15 weeks

Week	Theory		Week	Practical
	Lecture day	Topic (including assignment/ test)		
1 st	1st	Principles of Engineering Graphics and their significance		
	2nd	usage of Drawing instruments		
	3rd	Lettering, Type of Lines		
2 nd	4th	Dimensioning		
	5th	Plain Scales		
	6th	Diagonal Sales		
3 rd	7th	Vernier Scales		
	8th	Conic sections (General method only)		
	9th	Rectangular Hyperbola (General method only)		
4 th	10th	Cycloid		
	11th	Epicycloid, Hypocycloid		
	12th	Involute		
5 th	13th	Sessional 1		
	14th	Sessional 1		
	15th	Sessional 1		
6 th	16th	Projection of points		
	17th	Projection of points		
	18th	Projection of Lines		
7 th	19th	Projection of Lines inclined to one plane		
	20th	Projection of Lines inclined to both plane		
	21st	Projection of Lines inclined to both plane		
8 th	22th	Projection of planes		
	23rd	Projection of planes		

	24th	Projection of inclined planes		
9 th	25th	Projection of solids		
	26th	Projection of solids inclined to one planes		
	27th	Projection of solids inclined to one planes		
10 th	28th	Projection of solids inclined to both planes		
	29th	Projection of solids inclined to both planes		
	30th	Projection of solids inclined to both planes		
11 th	31st	Sessional 2		
	32nd	Sessional 2		
	33rd	Sessional 2		
12 th	34th	Section of Solids		
	35th	Section of Solids		
	36th	Section of Solids		
13 th	37th	Development of surfaces		
	38th	Development of surfaces		
	39th	Development of surfaces		
14 th	40th	Isometric projection		
	41st	Isometric projection		
	42nd	Isometric projection		
15 th	43rd	Conversion of Isometric Views to Orthographic Views		
	44th	Conversion of Isometric Views to Orthographic Views		
	45th	Sessional 3		

Lesson Plan (Ist & IInd Semester)
Environmental Studies and Disaster Management
(2023-24)

Week	Theory/Practical	
	Lecture Day	Topic Including(assignment/Test)
Ist	1	Unit1:- Introduction Basics of Ecology,Eco system Concept and sustainable development
	2	Sources ,advantages,disadvantages of renewable and non-renewable energy
IInd	1	Rain Water Harvesting
	2	Deforestation – its effects and control measures
IIIrd	1	Unit2:- Air and Noise Pollution Air Pollution: Source of Air Pollution
	2	Effect of Air Pollution on Human Health, Economy, Air Pollution control Methods
IVth	1	Noise Pollution: Sources of Noise Pollution, unit of noise ,Effect of Noise Pollution, Acceptable Noise Level, different Methods of minimizing Noise Pollution
	2	Revision of Above topics
Vth	1	Unit3:- Water and Soil Pollution Water Pollution: Impurities in water, Cause of water Pollution
	2	Sources of water Pollution. Effect of water pollution on human health
VIth	1	First Sessional Test(Tentative)
	2	First Sessional Test(Tentative)
VIIth	1	Concept of DO ,BOD, COD
	2	Prevention of water Pollution- water treatment processes
VIIIth	1	Sewage treatment ,Water quality standard
	2	Soil Pollution: Sources of soil Pollution
IXth	1	Effect and control of soil pollution
	2	Type of solid waste- House hold , Industrial , Agricultural , Bio-Medical ,Disposal of Solid waste.
Xth	1	Solid waste management E-waste ,E-waste management
	2	Unit4:- Impact of Energy Usage on Environment Global Warming ,Green House Effect , Depletion of Ozone Layer
XIth	1	Second Sessional Tests(Tentative)
	2	Second Sessional Tests(Tentative)
XIIth	1	Acid Rain .Eco Friendly Material, Recycling of Material, Concept of Green Building
	2	Concept of Carbon credit and Carbon Foot Print
XIIIth	1	Unit5:- Disaster Management A Different type of Disaster ,Natural Disasters such as Flood ,Cyclone ,Earth Quake and Landslides etc.
	2	Manmade Disasters such as Fire ,Industrial Pollution ,Nuclear Disasters , biological Disasters.
XIVth	1	Accidents(Air , Sea Rain and Road) , Structural Failures (Building and Bridges) , War and Terrorism
	2	B Disaster Preparedness Disaster Preparedness plan : Prediction ,Early warnings and safety measures of Disaster Psychological Response and Management (Trauma, Stress, Rumour and Panic)
XVth	1	Third Sessional Test(Tentative)
	2	Third Sessional Test(Tentative)
XVIth	1	Revision of above Syllabus
	2	Revision of above Syllabus

Lesson Plan (Ist & IInd Semester)

Chemistry (2023-24)

Week	Lecture Day	Theory	Practical	
		Topic(Including Assignments)	Practical Day	Topic
1st	1st	Unit1:- Atomic Structure,Periodic Table and Chemical Bonding Bohr's model of atom (qualitative treatment only),	1st	1.)To prepare standard solution of oxalic acid.(Group-1)
	2nd	Dual character of matter: derivation of de-Broglie's equation, Heisenberg's Principle of Uncertainty,		
	3rd	Modern concept of atomic structure: definition of orbitals , shapes of s, p and d- orbitals,	2nd	1)To prepare standard solution of oxalic acid.(Group-2)
2nd	4th	Quantum numbers and their Significance.	1st	2)To dilute the given KMnO4 solution(Group-1)
	5th	Electronic configuration: Aufbau and Pauli's exclusion principles		
	6th	Hund's rule, electronic configuration of elements up to atomic number 30.	2nd	2)To dilute the given KMnO4 solution(Group-2)
3rd	7th	Modern Periodic law and Periodic table	1st	3)To find out the strength in grams per litre of an unknown solution of sodium hydroxide using a standard (N/10) oxalic acid solution.(Group-1)
	8th	Classification of elements into s, p, d and f-blocks, metals, non-metals and metalloids		
	9th	Chemical bonding: cause of bonding	2nd	3)To find out the strength in grams per litre of an unknown solution of sodium hydroxide using a standard (N/10) oxalic acid solution.(Group-2)
4th	10th	Ionic bond, covalent bond, and metallic bond (electron sea or gas model)	1st	Revision/viva
	11th	Physical properties of ionic, covalent and metallic substances.		
	12th	Unit2:- 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.	2nd	Revision/viva
5th	13th	Definition of a mineral, ore, gangue, flux and slag Metallurgy of iron from haematite using a blast furnace	1st	4)To find out the total alkalinity in parts per million (ppm) of a water sample with the help of a standard sulphuric acid solution(Group-1)
	14th	Commercial varieties of iron. Definition,necessity of making alloys		
	15th	Composition, properties and uses of duralumin and steel. Heat treatment of steel-normalizing, annealing, quenching, tempering	2nd	4)To find out the total alkalinity in parts per million (ppm) of a water sample with the help of a standard sulphuric acid solution(Group-2)
6th	16th	First Sessional Test(Tentative)	1st	First Sessional Test(Tentative)
	17th	First Sessional Test(Tentative)		First Sessional Test(Tentative)

	18th	First Sessional Test(Tentative	2nd	First Sessional Test(Tentative)
7th	19th	Unit3:- Water ,Solutions,Acids and Bases Solutions: definition, expression of the concentration of a solution in percentage (w/w, w/v and v/v),	1st	5)To determine the total hardness of given water sample by EDTA method(Group-1)
	20th	Normality, molarity and molality and ppm.		
	21th	Simple problems on solution preparation.	2nd	5)To determine the total hardness of given water sample by EDTA method(Group-2)
8th	22th	Arrhenius concept of acids and bases, strong and weak acids and bases	1st	6)To determine the amount of total dissolved solids(TDS) in ppm in a given sample of water Gravimetrically(Group-1)
	23th	pH value of a solution and its significance		
	24th	pH scale. Simple numerical problems on pH of acids and bases.	2nd	6)To determine the amount of total dissolved solids(TDS) in ppm in a given sample of water Gravimetrically(Group-2)
9th	25th	Hard and soft water, causes of hardness of water, types of hardness – temporary and permanent hardness	1st	Revision/viva(Group-1)
	26th	Expression of hardness of water, ppm unit of hardness disadvantages of hard water;		
	27th	Removal of hardness: removal of temporary hardness by boiling and Clark’s method; removal of permanent hardness of water by Ion-Exchange method	2nd	Revision/viva(Group-2)
10th	28th	Boiler problems caused by hard water: scale and sludge formation, priming and foaming, caustic embrittlement	1st	7)To determine the pH of different solutions using a digital pH meter.(Group-1)
	29th	Water sterilization by chlorine, UV radiation and RO		
	30th	Unit4:- Fuels and Lubricants Fuels: definition and classification of higher and lower calorific values, units of calorific value, characteristics of an ideal fuel	2nd	7)To determine the pH of different solutions using a digital pH meter.(Group-2)
11th	31st	Second Sessional Test (Tentative)	1st	Second Sessional Test (Tentative)
	32nd	Second Sessional Test (Tentative)		
	33rd	Second Sessional Test (Tentative)	2nd	Second Sessional Test (Tentative)
12th	34th	Petroleum: composition and refining of petroleum; gaseous fuels: composition, properties and uses of CNG, PNG, LNG, LPG	1st	8)To determine the calorific value of a solid/liquid fuel using a Bomb calorimeter(Group-1)
	35th	Relative advantages of liquid and gaseous fuels over solid fuels. Scope of hydrogen as future fuel		
	36th	Lubricants- Functions and qualities of a good lubricant,	2nd	8)To determine the calorific value of a solid/liquid fuel using a Bomb calorimeter(Group-2)
13th	37th	Classification of lubricants with examples; lubrication mechanism	1st	9)To determine the viscosity of a lubricating oil using a Redwood viscometer(Group-1)
	38th	Physical properties (brief idea only) of a lubricant: oiliness, viscosity, viscosity index, flash and fire point, ignition temperature, pour point		
	39th	Unit5:-- Polymers and Electrochemistry Polymers and Plastics: definition of polymer, classification, addition and condensation polymerization	2nd	9)To determine the viscosity of a lubricating oil using a Redwood viscometer(Group-2)
14th	40th	Preparation properties and uses of polythene, PVC, Nylon-66, Bakelite; definition of plastic	1st	10)To prepare a sample of Phenol-formaldehyde resin

	41th	Thermoplastics and thermosetting polymers; natural rubber and neoprene, other synthetic rubbers (names only)		(Bakelite)/Nylon-66 in the lab(Group-1)
	42nd	Corrosion: definition, dry and wet corrosion, factors affecting rate of corrosion, methods of prevention of corrosion	2nd	10)To prepare a sample of Phenol-formaldehyde resin (Bakelite)/Nylon-66 in the lab(Group-2)
15th	43th	Third Sessional Test(Tentative)	1st	Third Sessional Test(Tentative)
	44th	Third Sessional Test(Tentative)		
	45th	Third Sessional Test(Tentative)	2nd	Third Sessional Test(Tentative)
16th	46th	Hot dipping, metal cladding, cementation, quenching, cathodic protection methods	1st	Revision/Viva(Group-1)
	47th	Introduction and application of nanotechnology: nano-materials and their classification, applications of nanotechnology in various engineering applications		
	48th	Revision	2nd	Revision/Viva(Group-2)

Lesson Plan (Ist Semester) (2023-24)

Physics- 1

Week	Theory		Practical	
	Lecture Day	Topic(Including Assignments)	Practical Day	Topic
Ist	1	Unit1:- Unit and Dimensions Definition of Physics, Physical quantities: Fundamental and Derived	1	1) Familiarization of measuring instruments and their parts (e.g., Vernier Caliper, screw gauge spherometer ,travelling microscope etc.)(Group-1)
	2	Units: Fundamental and Derived, system of units: CGS,FPS,MKS,SI	2	1) Familiarization of measuring instruments and their parts (e.g., Vernier Caliper ,screw gauge spherometer ,travelling microscope etc.)(Group-2)
2nd	1	Dimensions, dimensional formulae and SI units of physical quantities:Distance,displacement,area,volume,density,velocity,acceleration,linear momentum, force, impulse, work, power, energy, pressure, surface tension, stress, strain	1	2)To find diameter of solid cylinder using a vernier caliper(Group-1)
	2	Dimensional equation, principle of Homogeneity of dimensional equation. Application of dimensional analysis	2	2)To find diameter of solid cylinder using a vernier caliper(Group-2)
3rd	1	Checking of correctness of physical equation, conversion of system of units(Force ,work, acceleration)	1	3) To find internal diameter and depth of a beaker using a vernier caliper and hence find its volume(Group-1)
	2	UNIT2:- Force and Motion Scalar and vector quantities: Definition and examples ,representation of vector, types of vector(unit vector, position vector, coinitial vector, collinear vector, coplanar vector)	2	3) To find internal diameter and depth of a beaker using a vernier caliper and hence find its volume(Group-2)
4th	1	Vector Algebra: Addition of vector, Triangle and parallelogram law(statement and formula only)	1	4) To find the diameter of a wire using a screw gauge.(Group-1)
	2	Scalar and Vector product(statement and formula only), Force and its units, Resolution of force(statement and formula only)	2	4) To find the diameter of a wire using a screw gauge.(Group-1)
5th	1	Newton's law of Motion(statement and examples)	1	Revision and Viva(Group-1)

	2	Linear momentum, Law of conservation of linear momentum(statement and example),Impulse Revision of syllabus	2	Revision and Viva(Group-2)
6th	1	First Sessional Test(Tentative)	1	First Sessional Test(Tentative)
	2	First Sessional Test(Tentative	2	First Sessional Test(Tentative
7th	1	Circular Motion: Definition of Angular Displacement, Angular velocity, Angular acceleration ,Frequency, Time period, Relation between linear and angular velocity	1	5) To find the thickness of a paper using screw gauge(Group-1)
	2	Centripetal and centrifugal force(Definition and formula only), Application of centripetal force in banking of road	2	5) To find the thickness of a paper using screw gauge(Group-2)
8th	1	Rotational Motion :Definition with example, Definition of Torque angular momentum, Moment of inertia and its physical significance	1	6) To determine the thickness of a glass strip using a spherometer (Group-1)
	2	Unit3:- Work, Power and Energy Work:definition,symbol,formula and SI unit ,Types of work(zero work,positive work and negative work)with example	2	6) To determine the thickness of a glass strip using a spherometer (Group-2)
9th	1	Friction: Definition and its simple daily life applications , Power: Definition formula and units, Energy: definition and its SI units, Example of transformation of energy.	1	7) To determine the radius of curvature of a given spherical surface by a spherometer (Group-1)
	2	Kinetic Energy: Definition example formula and its derivation, Potential Energy: Definition example formula and its derivation	2	7) To determine the radius of curvature of a given spherical surface by a spherometer(Group-2)
10th	1	Law of conservation of Mechanical energy for freely falling body(with derivation),simple numerical problems based on formula of power and energy	1	8) To verify parallelogram law of force.(Group-1)
	2	Revision of above topics	2	8) To verify parallelogram law of force.(Group-2)
11th	1	Second Sessional Tests(Tentative)	1	Second Sessional Tests(Tentative)
	2	Second Sessional Tests(Tentative)	2	Second Sessional Tests(Tentative)
12th	1	Unit4:- Properties of Matter Elasticity and Plasticity – definition ,deforming force, restoring force ,example of elastic and plastic body, Definition of stress and strain ,Hook’s law ,Modules of elasticity	1	9) To determine the atmospheric pressure at a place using Fortin’s Barometer(Group-1)
	2	Pressure- Definition, atmospheric pressure, gauge pressure, absolute pressure, Pascal’s law ,Surface Tension- Definition, SI unit	2	9) To determine the atmospheric pressure at a place using

		applications of surface tension, effect of temperature on surface tension		Fortin's Barometer(Group-2)
13th	1	Viscosity: Definition, unit, examples, effect of temperature on viscosity	1	10) To determine force constant of a spring using Hook's Law(Group-1)
	2	Unit5: Heat and Temperature Definition of Heat and Temperature (on the basis of Kinetic theory),Difference between Heat and Temperature	2	10) To determine force constant of a spring using Hook's Law(Group-2)
14th	1	Principle and working of Mercury Thermometer, Modes of Transfer of heat : conduction, convection and Radiation with examples.	1	11) Measuring Room temperature with the help of a Thermometer and its conversion in different scales(Group-1)
	2	Properties of Heat Radiations , Different scales of Temperature and their relationship	2	11) Measuring Room temperature with the help of a Thermometer and its conversion in different scales(Group-2)
15th	1	Third Sessional Test(Tentative)	1	Third Sessional Test(Tentative)
	2	Third Sessional Test(Tentative)	2	Third Sessional Test(Tentative)
16th	1	Revision of syllabus	1	Revision and Viva voce(Group-1)
	2	Revision of syllabus	2	Revision and Viva voce(Group-1)

Lesson Plan (Ist Semester) (2023-24)

English-1

Week	Theory		Practical	
	Lecture Day	Topic (including assignment/ test)	Practical Day	Topic
Ist	1	Introduction to syllabus. Unit1:- Techniques of reading skimming and scanning	1	Reading:- Comprehension exercises of unseen passages along with the lesson prescribed.(Group-1)
	2	Extensive and intensive reading : Textual study	2	Reading:- Comprehension exercises of unseen passages along with the lesson prescribed.(Group-2)
2nd	1	Revision of above chapters	1	Reading:- Vocublary enrichment and grammar exercices based on the selected readings(Group-1)
	2	Unit2:- Concept and process of communication	2	Reading:- Comprehension exercises of unseen passages along with the lesson prescribed.(Group-2)
3rd	1	Types of Communication(verbal communication)	1	Reading:- Reading aloud newspaper headlines and important articles(Group-1)
	2	Revision of above topics	2	Reading:- Reading aloud newspaper headlines and important articles (Group-2)
4th	1	Unit3:- Nouns,Pronouns, Articles	1	Fundamentals of Communiacation:- Introducing oneself,others and leave taking(talking about yourself)(Group 1)
	2	Nouns,Pronouns, Articles	2	Fundamentals of Communiacation:- Introducing oneself,others and leave taking(talking about yourself)(Group 2)
5th	1	Unit4:- Significance, essentials and effectiveness of written communication, Netiquettes	1	Fundamentals of Communiacation:- Just a Minute(JAM) sessions:speaking extempore for one minute on given topics(Group 1)
	2	Notice Writing, Official letters and e-mails,	2	Fundamentals of Communiacation:- Just a Minute(JAM) sessions:speaking extempore for one minute on given topics (Group 2)
6th	1	First Sessional Test(Tentative)	1	First Sessional Test(Tentative)

	2	First Sessional Test(Tentative)	2	First Sessional Test(Tentative)
7th	1	Notice writing, Official letters and e-mails,	1	Fundamentals of Communiacation:- Situational conversation:offering responding to offers :congratulating:Apologising and forgiving:Complaining:Talkin g about likes and dislikes self introduction:Mock interviews(Group 1)
	2	Unit1:- Homecoming(R.N.Tagore)	2	Fundamentals of Communiacation:- Situational conversation:offering responding to offers :congratulating:Apologising and forgiving:Complaining:Talkin g about likes and dislikes self introduction:Mock interviews (Group 2)
8th	1	Life sketch of Sir Mokshagundam Visvesvarayya	1	Grammar and usage:- Written and oral drills will be undertaken in the class to facitilate holistic linguistic competency among learners (Group-1)
	2	Revision of above chapters	2	Grammar and usage:- Written and oral drills will be undertaken in the class to facitilate holistic linguistic competency among learners (Group-1)
9th	1	Unit2:- Barriers to communications	1	Grammar and usage:- Exercise on the prescribed grammar topics (Group-1)
	2	Speaking skills :Significance and essentials of spoken communication ,Listening Skills: Significane and essentials of listening	2	Grammar and usage:- Exercise on the prescribed grammar topics (Group-1)
10th	1	Revision of above chapters	1	Writing Skills:- Students should be given frequent practice in the groups so as to inculcate team-spirit and collaborative learning(Group-1)
	2	Unit3:- Verbs(Main and Auxiliary),Tenses	2	Writing Skills:- Students should be given frequent practice in the groups so as to inculcate team-spirit and collaborative learning(Group-2)

11th	1	Second Sessional Test(Tentative)	1	Second Sessional Test(Tentative)
	2	Second Sessional Test(Tentative)	2	Second Sessional Test(Tentative)
12th	1	Verbs(Main and Auxiliary),Tenses	1	Writing Skills:- Group exercises on writing paragraphs on given topics (Group-1)
	2	Revision of above topics	2	Writing Skills:- Group exercises on writing paragraphs on given topics (Group-2)
13th	1	Unit4:- Frequently used Abbrevations used in letter writing,Paragraph writing	1	Writing Skills:- Opening an e-mail account receiving and sending e-mails (Group-1)
	2	Revision of above topics	2	Writing Skills:- Opening an e-mail account receiving and sending e-mails (Group-2)
14th	1	Unit1:- Life sketch of Dr Abdul Kalam , Narayan Murthy's speech at LBSNA,Dehradun	1	Revision and copy checking
	2	Revision of above topics	2	Revision and copy checking
15th	1	Third Sessional Test(Tentative)	1	Third Sessional Test(Tentative)
	2	Third Sessional Test(Tentative)	2	Third Sessional Test(Tentative)
16th	1	Revision	1	Viva-voce
	2	Revision	2	Viva-voce

Lesson Plan (Ist Semester) (2023-24)

Mathematics-1

Week	Theory/Practical	
	Lecture Day	Topic Including(assignment/Test)
Ist	1	Introduction to syllabus and evaluation scheme
	2	Unit1 :-Algebra Complex Numbers Definition of Complex Number, Real and Imaginary Parts of Complex Numbers
	3	Polar and Cartesian form and their interconversion
	4	Conjugate of Complex Number, Modulus and Amplitude
IIInd	1	Addition Subtraction of Complex Numbers
	2	Multiplication and Division
	3	Revision of Complex Numbers
	4	Logarithm Logrithm and their basic property
IIIrd	1	Logrithm and their basic property
	2	Revision of Logarithm
	3	Unit2:-Binomial Theorem Permutation and Combination Meaning of ${}^n P_r$ and ${}^n C_r$
	4	Examples basis on ${}^n P_r$ and ${}^n C_r$
IVth	1	Binomial Theorem Binomial theorem for positive integral index without proof
	2	Expansion and General form of Binomial Theorem
	3	Binomial theorem for any index without proof expansion upto three terms
	4	Binomial theorem for any index without proof expansion upto three terms
Vth	1	First Binomial Approximation with application engineering problem
	2	Revision of Binomial Theorem
	3	Determinant and Matrices Evaluation of Determinants (upto second order)
	4	Solution of Equation upto 2 unknown by Cramer's rule
VIth	1	First Sessional Test(Tentative)
	2	First Sessional Test(Tentative)
	3	First Sessional Test(Tentative)
	4	Definition of Matrices and its types
VIIth	1	Addition and Subtraction of Matrices (upto second order)
	2	Multiplication of Matrices (upto second order)
	3	Revision of Determinants and Matrices
	4	Unit3:- Trignometry Concept of angle ,Measurement of angle in degree , grades, radians
VIIIth	1	Interconversion of Degree ,grade ,and Radian
	2	T-ratios of Allied Angles(without proof)
	3	Sum,Difference formulae and their applications(without proof)
	4	Product Formulae(Transformation of Product to Sum,Difference and vice versa)
IXth	1	Revision of Trignometry sums
	2	Application of Trignometric terms in Engineering problem such as to find an angle of elevation,Height ,Distance etc.,
	3	Application of Trignometric terms in Engineering problem such as to find an angle of elevation,Height ,Distance etc.,
	4	Revision of Heights and Distance Sums
Xth	1	Unit4:- Co ordinate Geometry Distance between two points

	2	Mid Point Formulae ,Centroid of vertices of a triangle
	3	Slope of line
	4	Equation of straight line in various standard forms(without proof)
XIth	1	Second Sessional Test(Tentative)
	2	Second Sessional Test(Tentative)
	3	Second Sessional Test(Tentative)
	4	Slope intercept form , intercept form , one point form
XIIth	1	Two point form ,Symmetric form ,Normal form and General form of a straight line
	2	Intersection of two straight lines
	3	Concurrency of lines, Angle between two straight lines
	4	Parallel and Perpendicular lines, Perpendicular distance formula
XIIIth	1	Conversion of general form of equation to various forms
	2	Revision of Straight lines
	3	Unit5:- Geometry of Circles and softwares Introduction to circles :-General equation of circle and its characteristics
	4	To find equation of circle given centre and radius
XIVth	1	To find equation of circle given three points lying on it.
	2	To find equation of circle given coordinates of end points of a diameter.
	3	MAT Lab or SciLab software Theoretical introduction of MAT LAB or SciLab
	4	Simple calculator(Addition and subtraction of value – Trigonometry and inverse Trigonometry function)/General Practice
XVth	1	Simple calculator(Addition and subtraction of value – Trigonometry and inverse Trigonometry function)/General Practice
	2	Third Sessional Test(Tentative)
	3	Third Sessional Test(Tentative)
	4	Third Sessional Test(Tentative)
XVIth	1	Revision of Syllabus
	2	Revision of Syllabus
	3	Discussion of Assignments
	4	Discussion of Previous Papers

