

Lesson Plan

Name- Smt. Karuna Rani(Theory and Practical)

Department- Applied Science

Semester – 1st Semester

Subject–

Communication Skills

Duration – 15 weeks (Oct 2022 to Jan 2023)

Work load (per week):- lectures-02 and practicals-02 (4 hours)

Week	Theory		Practical	
	Lect. day	Topic	Practical day	Topic
1st	1	Techniques of reading: Skimming and Scanning Extensive and Intensive Reading: Textual Study	1	Comprehension exercises of unseen passages along with the lessons prescribed
	2	Homecoming – R.N. Tagore	2	Comprehension exercises of unseen passages along with the lessons prescribed
2nd	1	Life Sketch of Sir Mokshagundam Visvesvarayya	1	Vocabulary enrichment and grammar exercises based on the selected readings
	2	Life Sketch of Dr. Abdul Kalam	2	Vocabulary enrichment and grammar exercises based on the selected readings
3rd	1	Narayan Murthy's speech at LBSNA, Dehradun	1	Reading aloud Newspaper headlines and important articles
	2	Concept and Process of Communication	2	Reading aloud Newspaper headlines and important articles
4th	1	Types of Communication (Verbal Communication)	1	Introducing oneself, others and leave- taking(talking about yourself
	2	Barriers to Communication	2	Introducing oneself, others and leave- taking(talking about yourself
5th	1	Speaking Skill: Significance and essentials of Spoken Communication	1	Just a minute (JAM) sessions: Speaking extempore for one minute on given topics
	2	Listening Skill: Significance and essentials of Listening	2	Just a minute (JAM) sessions: Speaking extempore for one minute on given topics

6 th First Sessional Exam				
7th	1	Nouns	1	Situational Conversation: Offering-Responding to offers; Congratulating; Apologising and Forgiving;
	2	Pronouns	2	Situational Conversation: Offering-Responding to offers; Congratulating; Apologising and Forgiving;
8th	1	Articles	1	Written and Oral Drills will be undertaken in the class to facilitate holistic linguistic competency among learners.
	2	Verbs(Main and Auxiliary)	2	Written and Oral Drills will be undertaken in the class to facilitate holistic linguistic competency among learners.
9th	1	Tenses	1	Exercises on the prescribed grammar topics.
	2	Tenses	2	Exercises on the prescribed grammar topics.
10th	1	Significance, essentials and effectiveness of Written Communication	1	Students should be given Written Practice in groups so as to inculcate team-spirit and collaborative learning .
	2	Notice Writing	2	Students should be given Written Practice in groups so as to inculcate team-spirit and collaborative learning .
11th		Second Sessional		
12th	1	Official Letters and E-mails	1	Group exercises on writing paragraphs on given topics.
	2	Official Letters and E-mails	2	Group exercises on writing paragraphs on given topics.
13th	1	Frequently-used Abbreviations used in Letter-Writing	1	Opening an e-mail account, receiving and sending emails
	2	Paragraph Writing	2	Opening an e-mail account, receiving and sending emails
14th	1	Netiquettes	1	Checking files
	2	Netiquettes	2	Checking files
15th	2	Third Sessional Exam		

Lesson Plan

Name : Sh. Shivparkash & Monika
Discipline : Applied science
Subject : Applied Mathematics
Duration : 15 weeks (Oct 2022 to Jan 2022)
WorkLoad : 4 Lectures per week

Week	Theory	
	Lecture	Topic
1 st	1 st	Complex Numbers: definition of complex number, real and imaginary parts of a complex number, Polar and Cartesian Form and their inter conversion,
	2 nd	Conjugate of a complex number, modulus and amplitude,
	3 rd	addition subtraction, multiplication and division of complex number
	4 th	Revision
2 nd	1 st	Logarithms and its basic properties
	2 nd	Revision
	3 rd	Binomial theorem (mathematical expression)
	4 th	Binomial theorem (without proof) for positive integral index (expansion and general form)
3 rd	1 st	Revision
	2 nd	binomial theorem for any index (expansion up to 3 terms - without proof)
	3 rd	first binomial approximation with application to engineering problems.
	4 th	Revision
4 th	1 st	Determinants Evaluation
	2 nd	Determinants and Matrices – Evaluation of determinants (upto 2 nd order)
	3 rd	Revision
	4 th	solution of equations (upto 2 unknowns) by Cramer's rule,
5 th	1 st	definition of Matrices and its types, addition, subtraction (upto 2 nd order).
	2 nd	multiplication of matrices (upto 2 nd order).
	3 rd	Revision
	4 th	Revision
6 th	Sessional Exam	
7 th	1 st	Concept of angle, measurement of angle in degrees, grades, radians and their conversions.
	2 nd	T-Ratios of Allied angles (without proof), Sum, Difference formulae and their applications (without proof).
	3 rd	Revision
	4 th	Product formulae (Transformation of product to sum, difference and vice versa)
8 th	1 st	Applications of Trigonometric terms in engineering problems such as to find an angle of elevation, height, distance etc.
	2 nd	Revision
	3 rd	Cartesian and Polar co-ordinates (two dimensional), Distance between two points
	4 th	mid-point, of a triangle
9 th	1 st	centroid of vertices of a triangle
	2 nd	Revision
	3 rd	Revision
	4 th	Slope of a line, equation of straight line in various standard forms (without proof)
10 th	1 st	(slope intercept form, intercept form, one-point form, two-point form, symmetric form)
	2 nd	normal form, general form of slope
	3 rd	Revision
	4 th	Revision
11 th	Sessional Exam	
12 th	1 st	intersection of two straight lines, concurrency of lines, angle between straight lines,
	2 nd	Revision
	3 rd	parallel and perpendicular lines, perpendicular distance formula, conversion of general form of equation to the various forms.
	4 th	Revision
13 th	1 st	General equation of a circle and its characteristics. To find the equation of a circle
	2 nd	Centre and radius
	3 rd	Three points lying on it
	4 th	Revision
14 th	1 st	MATLAB Or SciLab software – Theoretical Introduction, MATLAB or Scilab

	2nd	Note book check
	3rd	Revision
	4th	Simple Calculator (Addition and subtraction of values –Trigonometric and Inverse function)
15th	1st	Gernal practice of MATLAB
	2nd	Gernal practice of MATLAB
	3rd	Revision
	4th	Revision
		Sessional exam

Lesson Plan

Name- Smt.Manju Singh , Sh. Mukesh Punia and

Pooja Kumari(Theory and Practical)

Department- Applied Science

Semester – 1st Semester

Subject –AppliedPhysics

Duration – 15 weeks (Oct 2022 to Jan 2023)

Work load (per week):- lectures-02 and practicals-02 (4 hours)

Week	Theory		Practical	
	Lect. day	Topic	Practical day	Topic
1st				
	1	Definition of Physics, physical quantities- fundamental and derived Units: fundamental and derived	1	. Familiarization of measurement instruments and their parts (for example – Vernier caliper, screw gauge, sphere meter, travelling microscope etc.), and taking a reading
	2	System of units: CGS, FPS, MKS, SI	2	. Familiarization of measurement instruments and their parts (for example – Vernier caliper, screw gauge, sphere meter, travelling microscope etc.), and taking a reading
2nd	1	Dimension, 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	find diameter of solid cylinder using a Vernier caliper
	2	Dimensional equations, principle of homogeneity of dimensional equation Application of dimensional analysis: checking the correctness of physical equation,	2	find diameter of solid cylinder using a Vernier caliper
3rd	1	conversion of system of unit (force, work, acceleration)	1	To find internal dia meter and depth of a beaker using a Vernier caliper and hence find its volume.

	2	Scalar and vector quantities– definition and examples, representation of vector, types of vector (unit vector, position vector, co-initial vector, collinear vector, co-planar vector)	2	To find internal dia meter and depth of a beaker using a Vernier caliper and hence find its volume.
4th	1	Vector algebra- addition of vectors, Triangle & Parallelogram law (statement and formula only), Scalar and vector product (statement and formula only)	1	To find the diameter of wire using screw gauge
	2	Force and its units, resolution of force (statement and formula only) Newton's laws of motion (statement and examples) Linear momentum, Law of conservation of linear momentum (statement and examples), Impulse	2	To find the diameter of wire using screw gauge
5th	1	Circular motion: definition of angular displacement, angular velocity, angular acceleration, frequency, time period; Relation between linear and angular velocity, centripetal and centrifugal forces (definition and formula only), application of centripetal force in banking of road	1	To find thickness of paper using screw gauge.
	2	Rotational motion: definition with examples Definition of torque, angular momentum, moment of inertia and its physical significance	2	To find thickness of paper using screw gauge

6 th First Sessional Exam				
7th	1	Work- definition, symbol, formula and SI unit, types of work (zero work, positive work and negative work) with example	1	To determine the thickness of glass strip using a spherometer
	2	Friction– definition and its simple daily life applications Power- definition, formula and units	2	To determine the thickness of glass strip using a spherometer
8th	1	Energy- definition and its SI unit, examples of transformation of energy. Kinetic energy- definition, examples, formula and its derivation	1	To determine radius of curvature of a given spherical surface by a spherometer. 8. To verify parallelogram law of force
	2	Potential energy- definition, examples, formula and its derivation Law of conservation of mechanical energy for freely falling bodies (with derivation)	2	To determine radius of curvature of a given spherical surface by a spherometer. 8. To verify parallelogram law of force
9th	1	Simple numerical problems based on formula of Power and Energy	1	To determine the atmospheric pressure at a place using Fortin's Barometer
	2	Elasticity and plasticity- definition, deforming force, restoring force, example of elastic and plastic body Definition of stress and strain, Hooke's law, modulus of elasticity	2	To determine the atmospheric pressure at a place using Fortin's Barometer
10th	1	Pressure- definition, atmospheric pressure, gauge pressure, absolute pressure, Pascal's law Surface tension- definition, SI unit, applications of surface tension, effect of temperature on surface tension	1	To determine force constant of spring using Hooke's law
	2	Viscosity: definition, unit, examples, effect of temperature on viscosity	2	To determine force constant of spring using Hooke's law
11th		Second Sessional Exam		
12th	1	Definition of heat and temperature (on the basis of kinetic theory) Difference between heat and temperature	1	Measuring room temperature with the help of thermometer and its conversion in different scale
	2	Principle and working of mercury thermometer.	2	Measuring room temp with the help of thermometer and its conversion in different scale

13th	1	Modes of transfer of heat-conduction, convection and radiation with examples	1	Checking files
	2	Properties of heat radiation Different scales of temperature and their relationship	2	Checking files
14th	1	Revision	1	Checking files
	2	Revision	2	Checking files
15th	2	Third Sessional Exam		

Chemistry Lesson Plan For Session 2022 To 2023

Name of the Teaching Faculty	Suman Kumari (GF),
Discipline	Applied Science
Semester	1 st
Subject	Chemistry
Lesson Plan Duration	From 11 th OCT, 2022 to 27 th JAN., 2023
Work Load Per Week(Hours)	Lecture= 03 , Practical= 02(4 Hours)

Week	Lecture day	Topic Including Assignments Test	Practical day	Topic
1st	1st	UNIT 1 Bohr's model of atom (qualitative treatment only), dual character of matter.	1st	To prepare standard solution of oxalic acid.(Group-1)
	2nd	Derivation of de-Broglie's equation, Heisenberg's Principle of Uncertainty, modern concept of atomic structure.	2nd	To prepare standard solution of oxalic acid. (Group-2)
	3rd	Definition of orbitals, shapes of s, p and d-orbitals, quantum numbers and their significance.		
2nd	1st	Electronic configuration: Aufbau and Pauli's exclusion principles and Hund's rule, electronic configuration of elements up to atomic number 30.	1st	To dilute the given KMnO ₄ solution.(Group-1)
	2nd	Modern Periodic law and Periodic table.	2nd	To dilute the given KMnO ₄ solution.(Group-2)
	3rd	Classification of elements into s, p, d and f-blocks, metals, non-metals and metalloids (periodicity in properties excluded).		
3rd	1st	3 Chemical bonding: cause of bonding, ionic bond, covalent bond, and metallic bond (electron sea or gas model).	1st	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)
	2nd	Physical properties of ionic, covalent and metallic substances.	2nd	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)
	3rd	UNIT II Metals: mechanical properties of metals such as conductivity, elasticity, strength and stiffness,		

4th	1st	Luster, hardness, toughness, ductility, malleability, brittleness, and impact resistance and their uses.	1st	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)
	2nd	Definition of a mineral, ore, gangue, flux and slag.	2nd	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)
	3rd	Metallurgy of iron from haematite using a blast furnace. Commercial varieties of iron.		
5th	1st	Alloys: definition, necessity of making alloys, composition, properties and uses of duralumin and steel.	1st	To determine the total hardness of given water sample by EDTA method.(Group-1)
	2nd	Heat treatment of steel-normalizing, annealing, quenching, tempering.	2nd	To determine the total hardness of given water sample by EDTA method.(Group-2)
	3rd	Revision		
6th	1st Sessional			
7th	1st	UNIT III Solutions: definition, expression of the concentration of a solution in percentage (w/w, w/v and v/v).	1st	To determine the amount of total dissolved solids(TDS) in ppm in a given sample of water gravimetrically(Group -1)
	2nd	Normality, molarity and molality and ppm. Simple problems on solution preparation.	2nd	To determine the amount of total dissolved solids(TDS) in ppm in a given sample of water gravimetrically .(Group-2)
	3rd	Arrhenius concept of acids and bases, strong and weak acids and bases.		
8th	1st	pH value of a solution and its significance, pH scale. Simple numerical problems on pH of acids and bases.	1st	To determine the pH of different solutions using a digital pH meter. (Group-1)
	2nd	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.	2nd	To determine the pH of different solutions using a digital pH meter. (Group-2)
	3rd	Disadvantages of hard water; removal of hardness: removal of temporary hardness by boiling and Clark's method.		

9th	1st	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.	1st	. To determine the calorific value of a solid/liquid fuel using a Bomb calorimeter (Group-1)
	2nd	UNIT IV1 Fuels: definition and classification of higher and lower calorific values, units of calorific value, characteristics of an ideal fuel. Petroleum: composition and refining of petroleum, gaseous fuels.	2nd	. To determine the calorific value of a solid/liquid fuel using a Bomb calorimeter (Group-2)
	3rd	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.		
10th	1st	Lubricants- Functions and qualities of a good lubricant, classification of lubricants with examples	1st	To determine the viscosity of a lubricating oil using a Redwood viscometer. (Group-1)
	2nd	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.	2nd	To determine the viscosity of a lubricating oil using a Redwood viscometer (Group-2)
	3rd	Revision		
11th	2nd Sessional			
12th	1st	UNIT V Polymers and Plastics: definition of polymer, classification, addition and condensation polymerization.	1st	To prepare a sample of Phenol-formaldehyde resin (Bakelite)/Nylon-66 in the lab.(Group-1)
	2nd	Preparation properties and uses of polythene, PVC, Nylon-66, Bakelite.	2nd	To prepare a sample of Phenol-formaldehyde resin (Bakelite)/Nylon-66 in the lab. (Group-2)
	3rd	Definition of plastic, thermoplastics and thermosetting polymers, natural rubber and neoprene, other synthetic rubbers (names only)		
13th	1st	Corrosion: definition, dry and wet corrosion, factors affecting rate of corrosion.	1st	Revision

	2nd	Methods of prevention of corrosion—hot dipping, metal cladding, cementation, quenching, cathodic protection methods.	2nd	Revision
	3rd	Introduction and application of nanotechnology: nano-materials and their classification.		
14th	1st	Revision	1st	Revision
	2nd	Revision		
	3rd	Revision	2nd	Revision
15th	3rd Session			