Vedang Institute of Technology
LESSON PLAN

Discipline: Electrical & Electronics Engg	**Semester : 2nd**	**Name of the Teaching Faculty : Radha Kumari Pani**
Subject : Engineering Chemistry	**No. of days/Per weeks Class Allotted Weeks :4**	**Semester from date : 29/01/2024 to 14/05/2024 No. of Weeks: 15**
Weeks	**Class Days**	**Theory**
1st	1st	Introduction to Atomic structure
	2nd	Fundamental particles (electron, proton & neutron) Definition, mass & charge
	3rd	Rutherford's Atomic model (postulates and failure)
	4th	Atomic mass and mass number, examples and properties of Isotopes, isobars and isotones. Bohr's Atomic model (Postulates only), Bohr-Bury scheme
2nd	1st	Aufbau's principle, Hund's rule, Electronic configuration (up to atomic no 30)
	2nd	Definition , types (Electrovalent, Covalent and Coordinate bond with examples (formation of NaCl, MgCl2, H2,Cl2, O2, N2, H2O, CH4, NH3, NH4 +, SO2)
	3rd	Concept of Arrhenius, Lowry Bronsted and Lewis theory for acid and base with examples (Postulates and limitations only)
	4th	Definitions of atomic weight, molecular weight, Equivalent weight. Determination of equivalent weight of Acid, Base and Salt.
3rd	1st	Modes of expression of the concentrations (Molarity , Normality & Molality) with Simple Problems
	2nd	Definition and types (Strong & weak) of Electrolytes with example. Electrolysis (Principle & process) with example of NaCl (fused and aqueous solution)
	3rd	Faraday's 1st and 2nd law of Electrolysis (Statement, mathematical expression and Simple numerical)
	4th	Definition of Corrosion, Types of Corrosion- Atmospheric Corrosion, Waterline corrosion
4th	1st	Definition of Mineral, ores , gangue with example. Distinction between Ores And Minerals.
	2nd	General methods of extraction of metals
	3rd	Definition of alloy. Types of alloys (Ferro, Non Ferro & Amalgam) with example
	4th	Assignment Question Solving
5th	1st	pH of solution (definition with simple numericals)
	2nd	Importance of pH in industry (sugar, textile, paper industries only)
	3rd	Revise to Chemical Bonding
	4th	Definition of Salt, Types of salts (Normal, acidic,

		basic, double, complex and mixed salts)
6th	1st	Electrolysis Process
	2nd	Practice Solving Questions
	3rd	Electrolysis (Principle & process) with example of NaCl
	4th	Practice Solving Questions
7th	1st	Saturated and Unsaturated Hydrocarbons (
	2nd	Aliphatic and Aromatic Hydrocarbons (Huckle's rule only).
	3rd	UPAC system of nomenclature of Alkane, Alkene, Alkyne, alkyl halide and alcohol (up to 6 carbons)
	4th	Uses of some common aromatic compounds (Benzene, Toluene, BHC, Phenol, Naphthalene, Anthracene and Benzoic acid)
8th	1st	Sources of water, Soft water, Hard water, hardness
	2nd	Types of Hardness (temporary or carbonate and permanent or non-carbonate)
	3rd	Removal of hardness by lime soda method (hot lime & cold lime—Principle, process & advantages)
	4th	Advantages of Hot lime over cold lime process
9th	1st	Organic Ion exchange method (principle, process, and regeneration of exhausted resins)
	2nd	Definition of lubricant
	3rd	Types of lubricants (solid, liquid and semisolid with examples only)
	4th	specific uses of lubricants (Graphite, Oils, Grease)
10th	1st	Assignment Question Solving
	2nd	Purpose of lubrication
	3rd	Definition and classification of fuel
	4th	Definition of calorific value of fuel
11th	1st	Choice of good fuel
	2nd	Diesel, Petrol, and Kerosene --- Composition and uses.
	3rd	Producer gas and Water gas (Composition and uses)
	4th	Elementary idea about LPG
12th	1st	CNG and coal gas (Composition and uses only)
	2nd	Assignment Question Solving
	3rd	Assignment Question Solving
	4th	Definition of Monomer, Polymer
13th	1st	Homo-polymer
	2nd	Co-polymer and Degree of polymerization.
	3rd	Difference between Thermosetting and Thermoplastic
	4th	Composition and uses of Polythene
14th	1st	Poly-Vinyl Chloride and Bakelite
	2nd	Definition of Elastomer (Rubber)

	3rd	Natural Rubber & it's draw backs
	4th	Vulcanisation of Rubber
15th	1st	Advantages of Vulcanised rubber over raw rubber
	2nd	Pesticides: Insecticides, herbicides
	3rd	Insecticide & Fungicides-Examples and uses
	4th	Bio Fertilizers: Definition, examples and uses

VEDANG INSTITUTE OF TECHNOLOGY, DURGA PRASAD, RAM CHANDI, KHURDA

LESSON PLAN
Session (2023-2024)

Discipline: ELECTRICAL AND ELECTRONICS ENGINEERING	**Semester: 2nd**	**Name of the Faculty:** Jyotirmoyee Mishra
Subject: Communicative English	**No. of Days/week:** 04	**Start Date:** 29/01/2024 **End Date:** 14/05/2024

Week	Class Day	Theory Topics
1st	1st	**READING COMPREHENSION:** Introduction to Reading comprehension
	2nd	Skimming the gist
	3rd	Scanning for necessary information
	4th	Close reading for inference and evaluation
2nd	1st	Main idea and supporting points, Guessing the meaning of un-familiar words
	2nd	Note- making, summarizing, supplying a suitable Title
	3rd	Quiz Test
	4th	**TEXT, INVITATION TO ENGLISH, BOOK -1:** Standing Up for Yourself By Yevgeny Yevtushenko
3rd	1st	The Magic of Teamwork By Sam Pitroda
	2nd	Inchcape Rock By Robert Southey
	3rd	To My True Friend By Elizabeth Pinard
	4th	**VOCABULARY:** Use of synonyms, antonyms
4th	1st	Same word used in different situations in different meaning
	2nd	Single word substitute
	3rd	Quiz Test
	4th	**APPLICATION OF ENGLISH GRAMMAR:** Countable an Uncountable Noun
5th	1st	Articles and Determiners
	2nd	Modal Verbs
	3rd	Tenses
	4th	Voice-change

6th	1st	Subject-verb Agreement
	2nd	Revision
	3rd	**FORMAL WRITING SKILLS:** Paragraph writing, meaning,
	4th	Features of Paragraph Writing (Topic Statement, Supporting Points and Plot Compatibility)
7th	1st	Developing Ideas into Paragraphs (Describing Place/ Person/ Object /Situation and any general topic of interest
	2nd	Notice
	3rd	Agenda
	4th	Report writing (Format of a Report, Reporting an event / news)
8th	1st	Writing personal letter
	2nd	Letter to the Principal, Librarian, Head of the Dept., and Hostel Superintendent
	3rd	Writing Business letters
	4th	Layout of a Business Letter
9th	1st	Letter of Enquiry, Placing an Order, order (Features, Format and example Execution of an Order, Complaint, Cancellation of an order (Features, Format and example)
	2nd	Job application and C.V. (Features, Format and example)
	3rd	Revision
	4th	**ELEMENTS OF COMMUNICATION: A. Introduction to Communication**
10th	1st	Meaning, Definition and concept of communication
	2nd	Good Communication and Bad Communication
	3rd	Communication model
	4th	One-way Communication Model and Two-way Communication Model with examples
11th	1st	Process of communication and factors responsible for it
	2nd	Sender, Message, Channel, Receiver / Audience,
	3rd	Feedback, Noise, Context
	4th	Revision
12th	***1st***	**PROFESSIONAL COMMUNICATION*:*** Meaning of professional communication
	2nd	Types of professional communication
	3rd	Formal or Systematic Communication
	4th	Upward communication (How it takes place, symbol, merits and demerits)
13th	1st	Down-ward communication (How it takes place, symbol, merits and demerits)
	2nd	Parallel communication (How it takes place, symbol, merits and demerits)
	3rd	Informal communication Grape vine communication (How it takes place, symbol, merits and demerits)

	4th	Revision
14th	1st	**NON -VERBAL COMMUNICATION:** Meaning of nonverbal Communication
	2nd	Different areas of Non-verbal Communication
	3rd	Kinesics or Body Language (Postures and Gestures
	4th	Facial Expression and Eye Contact)
15th	1st	Proxemics or Spatial Language (Private Space, Personal Space, Social Space, Public Space)
	2nd	Language of Signs and Symbols
	3rd	(Audio Sign and Visual Sign in everyday life with merits and demerits)
	4th	Discussion of previous year questions

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Discipline: Electrical & Electronics Engineering	Semester: 2nd	Name of the Teaching Faculty: SUSHREESANGITA ROUT
Subject: Engineering Mathematics -II	No. of days/Per weeks Class Allotted Weeks 5	Semester from date: 29/01/2024 to 14/05/2024 No of Weeks: 15
Weeks	**Class day**	Theory
1st	1st	Introduction to vectors
	2nd	Types of vectors (null, unit, parallel, etc.)
	3rd	Representation of vectors in component form
	4th	Magnitude and direction
	5th	Addition and subtraction of vectors
2nd	1st	Position vector
	2nd	Scalar (dot) product
	3rd	Geometrical meaning of dot product
	4th	Angle between two vectors
	5th	Scalar projection
3rd	1st	Vector projection
	2nd	Vector (cross) product
	3rd	Geometrical meaning of cross product
	4th	Area of triangle using vectors
	5th	Area of parallelogram using vectors
4th	1st	Definition of function (set theory-based)
	2nd	Types of functions (constant, identity)
	3rd	Absolute value, greatest integer function
	4th	Trigonometric and exponential functions
	5th	Logarithmic function
5th	1st	Introduction to limits
	2nd	Existence of limits
	3rd	Standard limits (formulas)
	4th	Evaluation of limits using formulas
	5th	Continuity at a point and related problems
6th	1st	Derivative at a point
	2nd	Algebra of derivatives
	3rd	Derivatives of standard functions – part 1
	4th	Derivatives of standard functions – part 2
	5th	Problems on derivatives of standard functions
7th	1st	Chain rule and composite function
	2nd	Parametric differentiation
	3rd	Implicit differentiation
	4th	Logarithmic differentiation
	5th	Problems on mixed methods

8th	1st	Derivatives of function w.r.t. another function
	2nd	Successive differentiation (up to 2nd order)
	3rd	Partial differentiation (up to 2nd order)
	4th	Applications of derivatives
	5th	Practice problems on all concepts
9th	1st	Concept of integration as inverse of differentiation
	2nd	Standard integrals
	3rd	Integration by substitution
	4th	Integration by parts
	5th	Practice problems
10th	1st	$\int \frac{dx}{x^2+a^2}, \int \frac{dx}{a^2-x^2}, \int \frac{dx}{x^2-a^2}$
	2nd	$\int \frac{dx}{\sqrt{x^2+a^2}}, \int \frac{dx}{\sqrt{a^2-x^2}}$
	3rd	$\int \frac{dx}{\sqrt{x^2-a^2}} \int \frac{\sqrt{a^2-x^2}}{x} dx$
	4th	$\int \sqrt{x^2+a^2} dx, \int \sqrt{x^2-a^2} dx$
	5th	Practice problems on these forms
11th	1st	Definite integral – definition
	2nd	Properties of definite integrals (i, ii)
	3rd	Properties (iii, iv)
	4th	Mixed problem-solving
	5th	MCQs/Practice test
12th	1st	Area under a curve (introduction)
	2nd	Area between curve and X-axis
	3rd	Area of a circle with centre at origin
	4th	Combined application problems
	5th	Problem-solving session
13th	1st	Order and degree of differential equation
	2nd	Formation of DEs
	3rd	Solution of 1st order, 1st degree (separation of variables)
	4th	Practice problems on separable DEs
	5th	Word problems based on separable DEs
14th	1st	Linear differential equations form $\frac{dy}{dx} + Py = Q$
	2nd	Integrating factor method

	3rd	Solving linear DEs
	4th	Application-based problems
	5th	Mixed problem-solving on DE
15th	1st	Revision: Vector Algebra & Limits
	2nd	Revision: Derivatives
	3rd	Revision: Integration
	4th	Revision: Differential Equations
	5th	Internal Assessment / Test / Viva

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Discipline: Electrical & Electronics Engg	**Semester: 2nd**	**Name of the Teaching Faculty: SHUBHASHREE SAHOO**
Subject : Engineering Mechanics	**No. of days/Per weeks Class Allotted Weeks :4**	**Semester from date: 29/01/2024 to 14/05/2024 No. of Weeks: 15**
Weeks	**Class Days**	Theory
1st	1st	Fundamentals. Definitions of Mechanics, Statics, Dynamics, Rigid Bodies,
	2nd	Force System, Classification of force system according to plane & line of action.
	3rd	Definition, Classification of force system according to plane & line of action. Characteristics of Force & effect of Force. Principles of Transmissibility & Principles of Superposition. Action & Reaction Forces & concept of Free Body Diagram.
	4th	Resolution of a Force. Definition, Method of Resolution, Types of Component forces, Perpendicular components & non-perpendicular components.
2nd	1st	Composition of Forces. Definition, Resultant Force, Method of composition of forces, such as 1.4.1 Analytical Method such as Law of Parallelogram of forces & method of resolution.
	2nd	Graphical Method. Introduction, Space diagram, Vector diagram, Polygon law of forces.
	3rd	Resultant of concurrent, non-concurrent & parallel force system by Analytical & Graphical Method.
	4th	Moment of Force. Definition, Geometrical meaning of moment of a force, measurement of moment of a force & its S.I units. Classification of moments according to
3rd	1st	direction of rotation, sign convention, Law of moments, Varignon's Theorem, Couple – Definition, S.I. units, measurement of couple, properties of couple.
	2nd	Definition, condition of equilibrium
	3rd	Analytical & Graphical conditions of equilibrium for concurrent,
	4th	non-concurrent & Free Body Diagram
4th	1st	Lamia's Theorem
	2nd	Statement,
	3rd	Application for solving various engineering
	4th	Application for solving various engineering
5th	1st	Definition of friction, Frictional forces,
	2nd	Limiting frictional force,
	3rd	Coefficient of Friction
	4th	Angle of Friction & Repose
6th	1st	Laws of Friction, Advantages & Disadvantages of Friction.
	2nd	Equilibrium of bodies on level plane – Force applied on horizontal & inclined plane (up &down).
	3rd	Ladder, Wedge Friction.

	4th	Ladder, Wedge Friction.
7th	1st	Centroid – Definition, Moment of an area about an axis
	2nd	Centroid – Definition, Moment of an area about an axis
	3rd	centroid of geometrical figures such as squares, rectangles, triangles, circles, semicircles & quarter circles, centroid of composite figures.
	4th	centroid of geometrical figures such as squares, rectangles, triangles, circles, semicircles & quarter circles, centroid of composite figures.
8th	1st	centroid of geometrical figures such as squares, rectangles, triangles, circles, semicircles & quarter circles, centroid of composite figures.
	2nd	Moment of Inertia – Definition, Parallel axis & Perpendicular axis Theorems. M.I. of plane lamina & different engineering sections.
	3rd	Moment of Inertia – Definition, Parallel axis & Perpendicular axis Theorems. M.I. of plane lamina & different engineering sections.
	4th	Moment of Inertia – Definition, Parallel axis & Perpendicular axis Theorems. M.I. of plane lamina & different engineering sections.
9th	1st	Definition of simple machine,
	2nd	Definition of simple machine,
	3rd	velocity ratio of simple and compound gear train, explain simple & compound lifting machine, define M.A, V.R. & Efficiency & State the relation between them,
	4th	velocity ratio of simple and compound gear train, explain simple & compound lifting machine, define M.A, V.R. & Efficiency & State the relation between them,
10th	1st	velocity ratio of simple and compound gear train, explain simple & compound lifting machine, define M.A, V.R. & Efficiency & State the relation between them,
	2nd	State Law of Machine, Reversibility of Machine, Self Locking Machine.
	3rd	State Law of Machine, Reversibility of Machine, Self Locking Machine.
	4th	Study of simple machines – simple axle & wheel, single purchase crab winch & double purchase crab winch, Worm & Worm Wheel, Screw Jack.
11th	1st	Study of simple machines – simple axle & wheel, single purchase crab winch & double purchase crab winch, Worm & Worm Wheel, Screw Jack.
	2nd	Types of hoisting machine-like derricks etc, their use and working principle. No problems.
	3rd	Types of hoisting machine-like derricks etc, their use and working principle. No problems.
	4th	Types of hoisting machine-like derricks etc, their use and working principle. No problems.
12th	1st	Kinematics & Kinetics, Principles of Dynamics,
	2nd	Kinematics & Kinetics, Principles of Dynamics,
	3rd	Newton's Laws of Motion, Motion of Particle acted upon by a constant force, Equations of motion

	4th	Newton's Laws of Motion, Motion of Particle acted upon by a constant force, Equations of motion
13th	1st	De Alembert's Principle.
	2nd	De Alembert's Principle.
	3rd	Work, Power, Energy & its Engineering Applications,
	4th	Work, Power, Energy & its Engineering Applications,
14th	1st	Kinetic & Potential energy & its application.
	2nd	Kinetic & Potential energy & its application.
	3rd	Kinetic & Potential energy & its application.
	4th	Momentum & impulse,
15th	1st	conservation of energy & linear momentum, collision of elastic bodies, and Coefficient of Restitution.
	2nd	conservation of energy & linear momentum, collision of elastic bodies, and Coefficient of Restitution.
	3rd	conservation of energy & linear momentum, collision of elastic bodies, and Coefficient of Restitution.
	4th	conservation of energy & linear momentum, collision of elastic bodies, and Coefficient of Restitution.