

LESSON PLAN

DISCIPLINE: MATH AND SCIENCE	SEMESTER: SECOND	NAME OF THE TEACHING FACULTIES: ITUSHREE RANI RATH
--	----------------------------	--

SUBJECT: ENGG. CHEMISTRY	NO. OF DAYS PER WEEK CLASS ALLOTTED		SEMESTER: FROM 29/01/2024 TO 14/05/2024
1st	CLASS DAY	THEORY	PRACTICAL
	1 ST	-Introduction, Matter and its states.	Introduction to chemistry lab, about safety measures, about maintenance of practical records.
	2 ND	-Atomic structure: fundamental particles (electron, proton and neutron), their properties.	Introduction to the students about use of different lab equipments and how to handle them safely.
	3 RD	-Atomic number and mass no. , definition, examples and properties of isotopes, isotones and isobars. -Definitions of atomic weight, mol. Weight, equivalent weight.	-----

	4 TH	<ul style="list-style-type: none"> -Rutherford's atomic model. -Equivalent weight of acid, bases and salts. -concept of arrhenius theory with examples. 	-----
	1 ST	<ul style="list-style-type: none"> -Bohr's atomic model -Molarity and Normality with numericals. -Lowry Bronsted theory with examples. 	Dictation of the procedure of exp. 1, preparation and study of properties of CO ₂ gas, explanation of theory with equations.
	2 ND	Bohr and Bury Scheme and AUFBAU'S Principle.	Checking of rough practical record and demonstration of the experiment.
	3 RD	<ul style="list-style-type: none"> -Molality with examples -LEWIS theory for Acid and Base with examples. 	-----
	4 TH	<ul style="list-style-type: none"> -Hund's rule with examples. -Importance of ph in industry. -Neutralization. 	-----
2nd	4 TH	<ul style="list-style-type: none"> -Electronic configuration. -Ph of solutions with numericals. -Definition and types of salts. 	-----

3rd		1 ST	-Numericals	Expt. Conducted by the students.
		2 ND	-Correction of class note -clearing of doubts.	Correction of practical records. discussion of viva questions of the expt.
		3 RD	-Numericals.	-----
		4 TH	-Chemical bonding, definition, cause of bonding -Normal and Acidic salts with examples	-----
		1 ST	-Ionic bond: definition, examples. -Basic and Double salts with examples.	Dictation of the procedure of exp. 2. Preparation and study of properties of ammonia gas. Explanation Of Theory With Equations.
		2 ND	-Covalent bond: definition with examples. -Complex and Mixed salts with examples.	Checking of rough practical record and demonstration of the experiment.
		3 RD	-Coordinate bond: definition with examples. -Numericals.	-----
4 th		4 TH	-Electrochemistry: definition of electrolytes, their types, non electrolytes with examples. -Numericals.	-----
		1 ST	-Electrolysis(principle) -Numericals.	Expt. Conducted by the Students.
		2 ND	Electrolysis of molten NaCl and Aqueous NaCl. -Numericals.	Checking of practical records and discussion of viva questions of exp. 2.

5 th		3 RD	-Faraday's laws of electrolysis. -Numericals on faraday's laws.	-----
		4 TH	-Electroplating (zinc plating).	-----
		1 ST	-Class note correction.	Dictation of the procedure of exp. 3. Crystallization of CuSO ₄ . Explanation Of Theory With Equations.
		2 ND	-Note checking and numericals.	Checking of rough practical record and demonstration of the experiment.
		3 RD	-Corrosion and its types. -Water treatment: sources of water, hard and soft water.	-----
		4 TH	-Rusting of iron and water line corrosion. -Hardness, types of hardness.	-----
		1 ST	-Protection from corrosion by alloying and galvanisation. -Removal of hardness by lime soda method.	Expt. Conducted by the Students.

6th

7th

7 th	2 ^{NO}	-Hydrocarbons: definitions, general formula, examples. -Advantages of hot lime over cold lime process.	Checking of practical records and discussion of viva questions of expt. 3.
	3 ^{NO}	-Rules for iupac system of nomenclature for alkanes, alcohols, alkyl halides.	
8 th	4 TH	-Organic ion exchange method. -Rules for IUPAC system of nomenclature for alkenes and alkynes. -Lubricants: definition and types, uses.	Checking of rough practical record and demonstration of the experiment.
	1 ST	-Rules for writing the structural formula from IUPAC names, bond line notation. -Purpose of lubrication.	
	2 ^{NO}	-Revision.	
	3 ^{NO}	-Aromatic hydrocarbons and Huckel's rule. -Numericals.	
	4 TH	-Difference between aliphatic and aromatic hydrocarbons, uses of common aromatic compounds. -Fuel: definition, classification.	
	1 ST	-Metallurgy: minerals, ores with examples. -Uses and composition of diesel, petrol and kerosene.	
	2 ^{NO}	-Metallurgical operations. -Producer gas and water gas.	
	3 ^{NO}	-Gravity separation and Magnetic separation of ore concentration. -LPG, CNG and Coal gas.	
9 th	4 TH	-Froth floatation and Leaching methods of ore concentration. -Class note checking and discussion of questions.	Expt. Conducted by the Students Alkalimetry. -----
	1 ST	-Revision.	
	2 ^{NO}	-Numericals and class note correction.	
	3 ^{NO}	-Polymers.	
10 th	4 TH	-Definition of monomer, homo-polymer, co-polymer.	Dictation of the procedure of exp. 5. Test of acid radicals. -----
	1 ST	-Degree of polymerization.	
	NO	Thermocouple thermalistat.	
			Expt. Conducted by the Students
			Checking of rough practical record and demonstration of the experiment.

	3 RD	-Revision.	-----
	4 TH	-Composition and uses of polythene.	-----
12 th	1 ST	-Calcination and roasting.	Checking of practical records and discussion of viva questions of expt. 5.
	2 ND	-Composition and uses of poly vinyl chloride. -Smelting flux slag with definitions and examples. -composition and uses of	

		Bakelite.	
	3 RD	-Refining of metal.	-----
	4 TH	-Alloys and types with examples. -Elastomers.	-----
	1 ST	-Correction of assignments.	Dictation of the procedure of exp. 6. Test of basic radicals (known).
	2 ND	-Drawbacks of natural rubber.	Checking of rough practical record and demonstration of the experiment.
	3 RD	-Vulcanisation of rubber.	-----
	4 TH	-Advantages of vulcanised rubber over raw rubber.	-----
13 th	1 ST	-Uses and examples of insecticides.	Expt. Conducted by the Students.

	2 ND	-Revision.	Test of unknown acid and basic radicals.
	3 RD	-Examples and uses of herbicides and fungicides.	-----
	4 TH	-Revision.	-----
	1 ST	-Note correction.	Test of unknown salt.

	2 ND	-Bio fertilizers.	Checking of practical records and viva voice.
	3 RD	-Numericals and revision.	-----
	4 TH	-Discussion of possible questions for semester exam.	-----
15 th			

[Signature]
28-01-2024
Signature of faculty

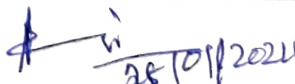
[Signature]
28/01/2024
Signature of HOD

LESSON PLAN

DISCIPLINE: MATH & SCIENCE		SEMESTER: SECOND	NAME OF THE TEACHING FACULTY: TAPASWINEE PATNAIK, LECT. (PHYSICS)
SUBJECT: ENGG. PHYSICS	NO. OF. CLASSES ALLOTTED PER WEEK	SEMESTER FROM 29/01/2024 to 14/05/2024	
WEEK	CLASSDAY	THEORY	
1ST	1 ST	Work- Formula & SI units.	
	2 ND	Friction – Concept. Types of friction (static, dynamic), Limiting Friction	
2ND	1 ST	Laws of Limiting Friction	
	2 ND	Coefficient of Friction , Numericals.Methods to reduce friction.	
3RD	1 ST	Numericals, Class Note Checking	
	2 ND	Newton’s Laws of Gravitation, Universal Gravitational Constant	
4TH	1 ST	Acceleration due to gravity ,Concept of mass and weight.	
	2 ND	Relation between g and G.Variation of g with altitude and depth	
5TH	1 ST	Kepler’s Laws of Planetary Motion	
	2 ND	Numericals, Class Note & Assignment Checking	
6TH	1 ST	Oscillations,Simple Harmonic Motion (SHM)	
	2 ND	Expression for displacement, velocity, acceleration of a particle in SHM.	
7TH	1 ST	Wave motion, Transverse and Longitudinal wave	
	2 ND	wave parameters & their relations	
8TH	1 ST	Ultrasonics Properties & Applications.	
	2 ND	NUMERICALS	
9TH	1 ST	Heat and Temperature	
	2 ND	Specific Heat Capacity	
10TH	1 ST	Thermal Expansion	
	2 ND	Coefficient of linear, superficial and cubical expansions of Solids & their Relation	
11TH	1 ST	Work and Heat, Joule’s Mechanical Equivalent of Heat	
	2 ND	First Law of Thermodynamics	
12TH	1 ST	Change of state ,Latent Heat	
	2 ND	NUMERICALS	
13TH	1 ST	Reflection & Refraction	
	2 ND	Refractive index, Refraction through Prism (Ray Diagram)	
14TH	1 ST	Critical Angle and Total internal reflection	
	2 ND	Fiber Optics & Numericals	
15TH	1 ST	LASER -Properties & Applications	
	2 ND	Principle of LASER	


 25.01.24
 Signature of Faculty

Tapaswinee Patnaik
 Lect.(Physics)


 25/01/2024
 Signature of HOD

LESSON PLAN

DISCIPLINE: PHYSICS	SEMESTER: SECOND	NAME OF THE TEACHING FACULTY: MS. ARATI SARANGI SR. LECT. (MATH & SC.)
--------------------------------	-----------------------------	---

SUBJECT: ENGG. PHYSICS	NO. OF. CLASSES ALLOTED PER WEEK	SEMESTER FROM 29/01/2024 to 14/05/2024
WEEK	CLASSDAY	THEORY
1ST	1st	Physical quantities, fundamental and derived units, systems of units
	2nd	dimension and Dimensional formulae of physical quantities.
2ND	1st	Principle of homogeneity, Checking the dimensional correctness
	2nd	Scalar and Vector, Vector Representation ,types of vectors. Triangle and Parallelogram law of vector Addition , Numerical.
3RD	1st	Resolution of Vectors –Numericals.
	2nd	Vector multiplication (scalar product and vector product of vectors).
4TH	1st	Concept of Rest and Motion, Displacement, Speed, Velocity, Acceleration & FORCE
	2nd	Equations of Motion under Gravity (upward and downward motion)
5TH	1st	Circular motion: Angular displacement, Angular velocity and Angular acceleration, Relation between –(i) Linear & Angular velocity, (ii) Linear & Angular acceleration).
	2nd	Projectile, Expression for Equation of Trajectory, Time of Flight,
6TH	1st	Maximum Height and Horizontal Range for a projectile fired at an angle, Condition for maximum Horizontal Range.
	2nd	Numericals, Class Note & Assignment Checking
7TH	1st	Electrostatics, Coulombs laws
	2nd	Unit charge, Absolute & Relative Permittivity
8TH	1st	Electric potential and Potential difference Electric field & field intensity
	2nd	Capacitance , Series and Parallel combination of Capacitors
9TH	1st	Magnet, Properties of a magnet. Coulomb's Laws in Magnetism, Unit Pole
	2nd	Magnetic field & Field intensity , Magnetic lines of force
10TH	1st	Magnetic & Flux Density (B)
	2nd	Electric Current, Ohm's law and its applications.
11TH	1st	Series and Parallel combination of resistors
	2nd	Kirchhoff's laws
12TH	1st	Wheatstone's Bridge
	2nd	Numericals
13TH	1st	Classnote & Assignment Checking
	2nd	Electromagnetism , Force acting on a current carrying conductor placed in a uniform magnetic field,
14TH	1st	Fleming's Left Hand Rule
	2nd	Faraday's Laws of Electromagnetic Induction, Lenz's Law (Statement) Fleming's Right Hand Rule
15TH	1st	Wireless Transmission – Ground Waves, Sky Waves, Space Waves
	2nd	Numericals & Assignment Checking

Arati Sarangi
25/01/2024

Signature of Faculty

Arati Sarangi
25/01/2024

Signature of HOD

Discipline: Math & Science dept	Semester 2nd	Name of the Teaching Faculty: Smaranika Shradhanjali
Subject: COMMUNICATIVE ENGLISH	No. of days/ per week class allotted: 04	Semester From date 29/1/24 To Date: 14/5/24 No. of Weeks: 15
Week	Class Day	Theory
1 ST	1 ST	INTRODUCTION TO LITERATURE APPRECIATION
	2 ND	SKIMMING THE GIST AND SCANNING FOR NECESSARY INFORMATION OF AN UNSEEN PASSAGE
	3 RD	CLOSE READING FOR INFERENCE AND EVALUATION, TRACING OUT THE MAIN IDEA AND ITS SUPPORTING POINTS
	4 TH	GUESSING THE MEANING OF UNFAMILIAR WORDS, NOTE-MAKING, SUMMARIZING, SUPPLYING A SUITABLE TITLE
2 ND	1 ST	PRACTICE
	2 ND	PRACTICE
	3 RD	PRACTICE
	4 TH	PRACTICE
3 RD	1 ST	STANDING UP FOR YOURSELF READING AND EXPLANATION
	2 ND	STANDING UP FOR YOURSELF READING AND EXPLANATION
	3 RD	QUESTION AND ANSWER DISCUSSION
	4 TH	INCHCAPE ROCK READING AND EXPLANATION
4 TH	1 ST	INCHCAPE ROCK READING AND EXPLANATION
	2 ND	QUESTION AND ANSWER DISCUSSION
	3 RD	THE MAGIC OF TEAMWORK READING AND EXPLANATION
	4 TH	THE MAGIC OF TEAMWORK READING AND EXPLANATION
5 TH	1 ST	QUESTION AND ANSWER DISCUSSION
	2 ND	TOMY TRUE FRIEND READING AND EXPLANATION
	3 RD	TOMY TRUE FRIEND READING AND EXPLANATION
	4 TH	QUESTION AND ANSWER DISCUSSION
6 TH	1 ST	SYNONYMS AND ANTONYMS
	2 ND	SAME WORD USED IN DIFFERENT SITUATIONS AND INDIFFERENT MEANING
	3 RD	SINGLE WORDS SUBSTITUTE
	4 TH	COUNTABLE NOUN AND UNCOUNTABLE NOUN TENSES
7 TH	1 ST	ARTICLES AND DETERMINERS
	2 ND	MODAL VERBS
	3 RD	MODAL VERBS
	4 TH	TENSES
8 TH	1 ST	TENSES
	2 ND	TENSES
	3 RD	VOICE CHANGE
	4 TH	SUBJECT-VERB AGREEMENT
9 TH	1 ST	NOTICE AND AGENDA
	2 ND	PARAGRAPH WRITING
	3 RD	FEATURES OF PARAGRAPH WRITING
	4 TH	DEVELOPING IDEAS INTO PARAGRAPHS
10 TH	1 ST	PRACTICE
	2 ND	REPORT WRITING
	3 RD	WRITING PERSONAL LETTER
	4 TH	LETTER TO PRINCIPAL

11 TH	1 ST	LETTER TO LIBRARIAN
	2 ND	LETTER TO HOD
	3 RD	LETTER TO HOSTEL SUPERINTENDENT
	4 TH	LAYOUT OF A BUSINESS LETTER
12 TH	1 ST	LETTER OF ENQUIRY
	2 ND	LETTER OF ORDER
	3 RD	LETTER OF COMPLAINT
	4 TH	CANCELLATION OF AN ORDER
13 TH	1 ST	JOB APPLICATION
	2 ND	C.V./RESUME
	3 RD	MEANING AND TYPES OF COMMUNICATION
	4 TH	COMMUNICATION MODEL
14 TH	1 ST	PROCESS OF COMMUNICATION AND FACTORS RESPONSIBLE FOR IT
	2 ND	MEANING AND TYPES OF PROFESSIONAL COMMUNICATION DIFFERENT AREAS OF NON-VERBAL COMMUNICATION
	3 RD	FORMAL COMMUNICATION AND ITS TYPE
	4 TH	UPWARD COMMUNICATION, DOWNWARD COMMUNICATION AND PARALLEL COMMUNICATION KINESICS
15 TH	1 ST	INFORMAL COMMUNICATION AND ITS TYPE
	2 ND	NON-VERBAL COMMUNICATION
	3 RD	KINESICS OR BODY LANGUAGE & PROXEMICS OR SPATIAL LANGUAGE
	4 TH	LANGUAGE OF SIGNS AND SYMBOLS

Sumanika Shrivastava
25/11/24
SIGNATURE OF THE FACULTY

[Signature]
25/11/2024
SIGNATURE OF HOD

Lesson Plan of 2023-24

(2nd Semester)

Discipline: Civil/Electrical /Mechanical Engg.	Semester: 2 nd	Name of the Teaching Faculty: MOUSUMI JENA
Subject: Engg. Mathematics II (Th 3)	No. of days/week class allotted: 5+1	Semester from date: 29/01/2024 To date: 14/08/2024 No. of weeks: 15
Week	Class Day	Theory Topics
1 st	1 st	Chapter 2: LIMITS and CONTINUITY: a) Definition of a function b) Types of functions i) Constant function, ii) identity function iii) Absolute value function iv) The greatest integer function with examples
	2 nd	v) Trigonometric function with example vi) Exponential function vii) Logarithmic function With examples
	3 rd	c) Introduction of limit: definition, example d) Existence of limit with example
	4 th	e) Methods of evaluation of limit
	5 th	Methods of evaluation of limit continues with some examples
	6 th (Tutorial class)	problems on existence of limit and evaluation of limit
2 nd	1 st	i) $\lim_{x \rightarrow 0} \frac{x^n - a^n}{x - a} = na^{n-1}$ ii) $\lim_{x \rightarrow 0} \frac{a^x - 1}{x} = \log_e a$ Some problems using these formulae
	2 nd	iii) $\lim_{x \rightarrow 0} \frac{e^x - 1}{x} = 1$ iv) $\lim_{x \rightarrow 0} (1 + x)^{\frac{1}{x}} = e$ Some problems using these formulae
	3 rd	v) $\lim_{x \rightarrow \infty} (1 + \frac{1}{x})^x = e$ vi) $\lim_{x \rightarrow 0} \frac{\log(1 + x)}{x} = 1$ Some problems using these formulae
	4 th	vii) $\lim_{x \rightarrow 0} \frac{\sin x}{x} = 1$ viii) $\lim_{x \rightarrow 0} \frac{\tan x}{x} = 1$ Some problems using these


		formulae
	5 th	f) Definition of continuity of a function at a point, Existence of continuity with example
3 rd	6 th (Tutorial class)	Problems on limit and continuity
	1 st	Chapter 3: DERIVATIVES: a) Derivative of a function at a point b) Algebra of derivative
	2 nd	c) Derivative of standard functions: $x^n, a^x, \log_a x, e^x$
	3 rd	Derivative of standard functions continues: $\sin x, \cos x, \tan x$
	4 th	Derivative of standard functions continues: $\cot x, \sec x, \csc x, \sin^{-1} x$
	5 th	Derivative of standard functions continues: $\cos^{-1} x, \tan^{-1} x, \cot^{-1} x$
	6 th (Tutorial class)	Problem solving on trigonometric functions
4 th	1 st	Derivative of standard functions continues: $\sec^{-1} x, \csc^{-1} x,$ d) Derivatives of composite function
	2 nd	Derivatives of composite function(Chain rule) continues with examples
	3 rd	Derivatives of composite function(Chain rule) continues with examples
	4 th	e) Methods of differentiation of i) Parametric function with examples
	5 th	Methods of differentiation of ii) Implicit function with examples
	6 th (Tutorial class)	Solving problems on derivatives of parametric function and implicit function
5 th	1 st	Methods of differentiation of iii) Logarithmic function with example
	2 nd	Methods of differentiation of iv) A function wrt another function with example
	3 rd	f) Applications of derivatives: i) Successive differentiation (up to second order) Some problems on successive differentiation
	4 th	Solving problems on successive differentiation
	5 th	ii) Partial differentiation (function of two variables up to second order)
	6 th (Tutorial class)	Problems on derivative of logarithmic function and successive differentiation.
6 th	1 st	Partial differentiation continues
	2 nd	Some more problems on partial differentiation
	3 rd	Revision of derivative
	4 th	Chapter 4: INTEGRATION:

		<p>a) Definition of integration as inverse of differentiation</p> <p>b) Integral of standard functions</p>
	5 th	<p>c) Methods of integration:</p> <p>i) Integration by substitution with examples</p> <p>Problems on integration by substitution</p>
	6 th (Tutorial class)	<p>ii) Integration by parts with examples</p> <p>Problems on integration by parts</p>
7 th	1 st	<p>d) Integration of the following forms</p> <p>i) $\int \frac{dx}{x^2 + a^2}$ ii) $\int \frac{dx}{x^2 - a^2}$ iii) $\int \frac{dx}{a^2 - x^2}$</p> <p>iv) $\int \frac{dx}{\sqrt{x^2 + a^2}}$ with examples</p>
	2 nd	
	3 rd	
	4 th	
	5 th	
	6 th (Tutorial class)	<p>Integration of the following forms</p> <p>v) $\int \frac{dx}{\sqrt{x^2 - a^2}}$ vi) $\int \frac{dx}{\sqrt{a^2 - x^2}}$ vii)</p> <p>$\int \frac{dx}{x\sqrt{x^2 + a^2}}$ viii) $\int \sqrt{a^2 - x^2} dx$ with examples</p>
	5 th	<p>Integration of the following forms</p> <p>ix) $\int \sqrt{a^2 + x^2} dx$ x) $\int \sqrt{x^2 - a^2} dx$ with problems</p>
	6 th (Tutorial class)	Problems on integration by parts
8 th	1 st	<p>e) Definite integrals and properties</p> <p>i) $\int_0^a f(x) dx = \int_0^a f(a-x) dx$</p> <p>ii) $\int_a^b f(x) dx = -\int_b^a f(x) dx$</p> <p>With problems</p>
	2 nd	<p>iii) $\int_a^c f(x) dx = \int_a^b f(x) dx + \int_b^c f(x) dx, a < b < c$</p> <p>$\int_{-a}^a f(x) dx = 0$, if $f(x) = \text{odd}$</p> <p>iv) $= 2 \int_0^a f(x) dx$, if $f(x) = \text{even}$</p> <p>With examples</p>
	3 rd	Solving problems on properties of definite integration
	4 th	f) Application of integration

		i) Area enclosed by a curve and X-axis and example
	5 th	
9 th	6 th (Tutorial class)	ii) Area of a circle with centre at origin
	1 st	Solving problems on application of integration
		Chapter 5: DIFFERENTIAL EQUATION: Definition, ODE, PDE,
	2 nd	a) Order and degree of a differential equation Determining Order and degree of a differential equation with examples
	3 rd	b) Solution of differential equation Definition
	4 th	i) By method of separation of variable with examples method of separation of variable continues with problem solving
	5 th	Some more problems on separation of variables
	6 th (Tutorial class)	Problems on determination of degree and order of a differential equation
10 th	1 st	ii) Linear equation example
	2 nd	Solving linear equation $\frac{dy}{dx} + Py = Q$, where P, Q are functions of x
	3 rd	Problems on linear differential equation
	4 th	Some more Problems on linear differential equation
	5 th	Revision of differential equation
	6 th (Tutorial class)	Revision of differential equation
11 th	1 st	Chapter 1: VECTOR ALGEBRA: a) Introduction: definition of scalar, vector with examples b) Types of vectors: null vector, parallel vector, collinear vectors with examples
	2 nd	c) Representation of a vector
	3 rd	d) Magnitude and direction of vectors with examples
	4 th	e) Addition and subtraction of vectors with examples
	5 th	Properties of vector addition and position vector
	6 th (Tutorial class)	Problems on magnitude and f) position vector
	1 st	g) scalar product of two vectors with examples
12 th	2 nd	h) Geometrical meaning of dot product
	3 rd	Problems on dot product
	4 th	i) Angle between two vectors with example
	5 th	j) Scalar and vector projection of two vectors with examples
	6 th (Tutorial class)	Problems on Scalar and vector projection of two vectors

13 th	1 st	k) Vector product and geometrical meaning Problems on vector product Revision
	2 nd	
	3 rd	
	4 th	
	5 th	
	6 th	
14 th	1 st	Previous year question discussion
	2 nd	
	3 rd	
	4 th	
	5 th	
	6 th	
15 th	1 st	Previous year question discussion
	2 nd	
	3 rd	
	4 th	
	5 th	
	6 th	
16 th	1 st	Previous year question discussion
	2 nd	
	3 rd	
	4 th	
	5 th	
	6 th	

Mousumi Tena
25/01/2024
Signature of Faculty


25/01/2024
Signature of HOD