Government Polytechnic, Jagatsinghpur
Department of Mathematics and Science
Lesson Plan

Discipline: CIVIL AND CHEMICAL ENGG.	Semester: 1st	Name of the Teaching Faculty: MISS. KIRAN NAIK, LECTURER IN PHYSICS	
Subject: ENGG. PHYSICS	No. of days/per week class allotted: 15 Weeks	Semester from Date: 25/10/2021 to Date: 31/01/2022	
Week	Class Day	Theory/Practical Topics	Delivery Method
1st	1st	Unit-1: Introduction Physical quantities and fundamental & derived units	Blackboard
	2nd	Dimensional formulas of physical quantities	Blackboard
	3rd	Principle of homogeneity	Blackboard
	4th	Dimensional correctness of physical quantities and some problems	Blackboard
2nd	1st	Unit-2: Scalar and Vectors Definition and concept of Scalar and vector	Blackboard
	2nd	Different types and properties of vectors	Blackboard
	3rd	Laws of vector addition	Blackboard
	4th	Different types of methods for vector multiplication	Blackboard
3rd	1st	Unit-3: Kinematics Concept of rest and motion, about displacement, speed, velocity, acceleration and force	Blackboard
	2nd	Equation of motion under gravity	Blackboard
	3rd	About circular motion	Blackboard
	4th	Linear and ang. Vel., linear and ang. Accel.	Blackboard
4th	1st	Projectile motion	Blackboard
	2nd	Different conditions of projectile motions	Blackboard
	3rd	Unit-4: Work and Friction Definition of wok and friction	Blackboard
	4th	Types of friction	Blackboard
5th	1st	Laws of limiting friction, coefficient of friction	Blackboard
	2nd	Methods to reduce friction, friction related problems	Blackboard
	3rd	Unit-5: Gravitation Definition of gravitation, Newton's laws of gravitation	Blackboard
	4th	Acceleration Due to gravity, definition of mass and weight	Blackboard

6th	1st	Relation between g & G, Variation of g with altitude	Blackboard
	2nd	Variation of g with depth, Kepler's law of planetary motion	Blackboard
	3rd	Unit-6: Oscillation and Waves Definition of oscillation and wave, definition of SHM	Blackboard
	4th	Expression for displacement, velocity and acceleration of a particle executing SHM	Blackboard
7th	1st	Definition of wave motion, transverse and longitudinal wave	Blackboard
	2nd	Wave parameters, relation between vel., frequency & wavelength of a wave	Blackboard
	3rd	Ultrasonic wave (properties and application)	Blackboard
	4th	Unit-7: Heat and Thermodynamics Definition of heat and temp.	Blackboard
8th	1st	Specific heat and latent heat, Change of state	Blackboard
	2nd	Thermal expansion, expansion of solids and diff. types of thermal expansion	Blackboard
	3rd	Relation between α, β, γ	Blackboard
	4th	Definition of work and heat, Joule's mechanical equivalent of heat	Blackboard
9th	1st	First law of Thermodynamics, some problems	Blackboard
	2nd	Unit-8: Optics Definition of Optics, diff. types of phenomenon in optics	Blackboard
	3rd	Laws of reflection and refraction, refractive index	Blackboard
	4th	Total internal reflection, refraction through prism	Blackboard
10th	1st	Fibre optics	Blackboard
	2nd	Unit-9: Electrostatics and magneto-statics Definition and concept of electrostatics, Coulomb's law	Blackboard
	3rd	Unit charge, point charge, absolute and relative permittivity	Blackboard
	4th	Electric potential and electric potential difference, electric field and electric field intensity	Blackboard
11th	1st	Capacitance, series and parallel combination of capacitors, some problems	Blackboard
	2nd	Magnet, Coulomb's law of magnetism, magnetic field	Blackboard
	3rd	Magnetic field intensity, lines of force, magnetic flux, magnetic flux intensity	Blackboard
	4th	Unit-10: Current Electricity Definition of Electric Current, Ohm's law	Blackboard

12th	1st	Application of Ohm's Law, Series and Parallel Combination of Resisters	Blackboard
	2nd	Simple numericals on Resistors grouping, Kirchhoff's laws.	Blackboard
	3rd	Application of Kirchhoff's laws to Wheatstone bridge	Blackboard
	4th	Balanced condition of Wheatstone's Bridge	Blackboard
13th	1st	Unit-II: Definition of Electromagnetism, Force acting on a current carrying conductor placed in a uniform Magnetic field.	Blackboard
	2nd	Fleming's Left hand rule	Blackboard
	3rd	Faraday's Laws of electromagnetic induction	Blackboard
	4th	Lenz's Law, Fleming's Right hand rule	Blackboard
14th	1st	Comparison between Fleming's Right hand and Left hand rule	Blackboard
	2nd	Unit-12: Modern Physics LASER and LASER beam, Principle of LASER	Blackboard
	3rd	Properties and application of LASER	Blackboard
	4th	Wireless Transmission, Different types of waves related in wireless transmission	Blackboard
15th	1st	Revision Class	Blackboard
	2nd	Doubt Class	Blackboard
	3rd	Revision Class	Blackboard
	4th	Doubt Class	Blackboard

LEARNING RESOURCES:

1.Text Book of Physics for Class XI (Part-I, Part-II) N.C.E.R.T

2. Text Book of Physics for Class XII (Part-I, Part-II) N.C.E.R.T

3. Text Book of Engineering Physics by Barik, Das, Sharma, Kalyani Publisher

4. Concepts in Physics by H. C. Verma, Vol. I and II

Sign. of Faculty Sign. of HOD

Discipline : **MECHANICAL, CIVIL & CHEMICAL ENGG.**	Semester :1ST	Name of the Teaching Faculty:- R C GUIN
Subject: **COMPUTER APPLICATION**	No. of days/per week class allotted:**04**	Semester From date : **25.10.21** To Date: **31.01.22** No. of Weeks: **13**
Week	Class Day	Theory Topics
1ST	1ST	UNIT-1 COMPUTER ORGANIZATION Introduction to Computer Evolution of Computers Generation of Computers Classification of Computers.
	2ND	Basic Organization of Computer (Functional Block diagram) Input Devices
	3RD	CPU & Output Devices.
	4TH	Computer Memory and Classification of Memory
2ND	1ST	UNIT-2 COMPUTER SOFTWARE Software concept, System software, Application software
	2ND	Overview of Operating System Objectives.
	3RD	Functions of O.S
	4TH	Types of Operating System: Batch Processing
3RD	1ST	Multiprogramming, Time Sharing OS
	2ND	Features of DOS, Windows and UNIX
	3RD	Programming Languages Compiler, interpreter Computer Virus
	4TH	Different Types of computer virus
4TH	1ST	Detection and prevention of Virus
	2ND	Application of computers in different Domain
	3RD	UNIT-3 COMPUTER NETWORK AND INTERNET Networking concept, Protocol
	4TH	Network Topologies, Types of Network
5TH	1ST	Networking Devices like Hub, Repeater, Switch

	2ND	Bridge, Router, Gateway & NIC
	3RD	Internet Services like E-Mail, WWW, FTP
	4TH	Chatting, Internet Conferencing, Electronic Newspaper & Online Shopping
6TH	1ST	Different types of Internet connectivity and ISP
	2ND	Revision of Ch. 1,2,3
	3RD	UNIT-4 FILE MANAGEMENT AND DATA PROCESSING Concept of File and Folder
	4TH	File Access and Storage methods. Sequential, Direct, ISAM
7TH	1ST	Data Capture, Data storage
	2ND	Data Processing and Retrieval
	3RD	Class Test
	4TH	UNIT-5 PROBLEM SOLVING METHODOLOGY Algorithm, Pseudo code
8TH	1ST	Flowchart Generation of Programming Languages
	2ND	Structured Programming Language
	3RD	Examples of Problem solving through Flowchart
	4TH	Revision Class
9TH	1ST	UNIT-6 OVERVIEW OF C PROGRAMMING LANGUAGE About Constants, Variables
	2ND	Data types in C Managing Input and Output operations.
	3RD	Operators, Expressions, Type conversion & Typecasting
	4TH	Decision Control
10TH	1ST	Looping Statements (If, If-else, If-else-if, Switch)
	2ND	Looping Statements (While, Do-while, For, Break, Continue & Goto)
	3RD	Programming Assignments using the above features.
	4TH	Revision Class
11TH	1ST	Class Test
	2ND	Discussion about class test Questions
	3RD	UNIT-7 ADVANCED FEATURES OF C Functions and Passing Parameters to the Function (Call by Value and Call by Reference)
	4TH	Recursion Function
12TH	1ST	Types of Recursion
	2ND	One Dimensional Array

	3RD	Multidimensional Array
	4TH	String Operations and Pointers
13TH	1st	Pointer Expression
	2nd	Pointer Arithmetic Programming Assignments using the above features.
	3rd	Structure and Union
	4th	Revision

Learning Resources:

1. Computer Fundamentals and Programming in C by Reema Thareja, Oxford Unversity Press
2. Programming in ANSI C by A.N Kamthane, Pearson Education
3. Computer Application by Kalyani Publisher
4. Let us C by Y. Kanetkar, BPB
5. Computer Fundamentals, by E. Balaguruswamy, TMH

SIGNATURE OF FACULTY **SIGNATURE OF HOD**

Discipline : **MECHANICAL ENGG.**	Semester : 1ST	Name of the Teaching Faculty:- **OM PRAKASH KAR & ANANTA BISWAL**
Subject: **ENGG. MECHANICS**	No. of days/per week class allotted:**04**	Semester : WINTER No. of Weeks: **16** **FROM 25.10.21 TO 31.01.22**
Week	Class Day	Theory Topics
1ST	1ST	Fundamentals. Definitions of Mechanics, Statics, Dynamics, RigidBodies,
	2ND	Force System. Definition, Classification of force system according to plane & line of action.
	3RD	Characteristics of Force & effect of Force. Principles of Transmissibility & Principles of Superposition. Action & Reaction Forces & concept of Free BodyDiagram.
	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
	2ND	Analytical Method such as Law of Parallelogram of forces & method of resolution.
	3RD	Graphical Method. Introduction, Space diagram,Vector diagram, Polygon law offorces.
	4TH	Resultant of concurrent, non-concurrent & parallel force system by Analytical & Graphical Method.
3RD	1ST	Moment of Force. Definition, Geometrical meaning of moment of a force, measurement of moment of a force & its S.Iunits.
	2ND	Classification of moments according to direction of rotation, sign convention,
	3RD	Law of moments, Varignon'sTheorem
	4TH	Couple – Definition, S.I. units, measurement of couple
4TH	1ST	properties of couple, simple problems on Force systems
	2ND	Introduction to Equilibrium, Definition, condition of equilibrium
	3RD	Analytical & Graphical conditions of equilibriumfor concurrent, non-concurrent & Free Body Diagram.
	4TH	Lami's Theorem – Statement, Application for solving various engineering problems.
5TH	1ST	Revision- CH-1& 2

	2ND	Definition of friction& Frictional forces
	3RD	Define Limiting frictional force & Coefficient of Friction.
	4TH	Define Angle of Friction & Repose & Laws of Friction
6TH	1ST	Advantages & Disadvantages of Friction.
	2ND	Friction problem
	3RD	Friction problem
	4TH	Friction problem
7TH	1ST	Equilibrium of bodies on level plane – Force applied on horizontal plane
	2ND	Problem solved of Force applied on horizontal plane
	3RD	Equilibrium of bodies on level plane – Force applied on inclined plane
	4TH	Problem solved of Force applied on inclined plane
8TH	1ST	Ladder, Wedge Friction
	2ND	Problems solved on Ladder friction
	3RD	Problems solved on Ladder friction
	4TH	Problems solved on wedge friction
9TH	1ST	Revision- CH-3
	2ND	Introduction to centroid and M.I, Lamia's Theorem – Statement, Application for solving various engineering problems.
	3RD	centroid of geometrical figures such as squares, rectangles, triangles, circles, semicircles & quarter circles
	4TH	centroid of composite figures, problems on centroid
10TH	1ST	Moment of Inertia – Definition, Parallel axis & Perpendicular axis Theorems
	2ND	M.I. of plane lamina & different engineering sections.
	3RD	Problems on M.I
	4TH	Problems on M.I
11TH	1ST	Revision- CH-4
	2ND	Definition of simple machine, velocity ratio of simple and compound gear train
	3RD	Explain simple & compound lifting machine
	4TH	Define M.A, V.R.& Efficiency and State the relation between them
12TH	1ST	State Law of Machine, Reversibility of Machine, Self-Locking Machine.
	2ND	Study of simple machines – simple axle & wheel
	3RD	Problems solved on simple axle & wheel
	4TH	Discussion about Single purchase crab winch

13TH	1ST	Problem solved on Single purchase crab winch
	2ND	Discussion about double purchase crab winch
	3RD	Problems on double purchase crab winch
	4TH	Discussion of Worm & Worm Wheel
14TH	1ST	Problems on Worm& Worm Wheel
	2ND	Screw Jack
	3RD	Problems solved on screw jack
	4TH	Types of hoisting machine-like derricks etc. Their use and working principle
15TH	1ST	Revision- CH-5
	2ND	Kinematics & Kinetics, Principles of Dynamics, Newton's Laws ofMotion
	3RD	Motion of Particle acted upon by a constant force, Equations ofmotion
	4TH	De-Alembert's Principle, Work, Power, Energy & its Engineering Applications
16TH	1ST	Kinetic & Potential energy & its application, Momentum & impulse, conservation of energy & linearmomentum
	2ND	collision of elastic bodies, and Coefficient of Restitution
	3RD	Solving problems
	4TH	Revision- CH-6

Learning Resources:

1. Text Book of Engineering Mechanics – R.S Khurmi (S.Chand).
2. Engineering Mechanics – by A.R. Basu (TMH PublicationDelhi)
3. Engineering Machines – Basudev Bhattacharya (Oxford UniversityPress).

FACULTY **HOD MATH &SCDEPT.** **PRINCIPAL GP, JAGATSINGPUR**

GOVERNMENT POLYTECHNIC JAGATSINGHPUR

DEPARTMENT OF MATHEMATICS AND SCIENCE

LECTURE PLAN

MECHANICAL, CIVIL & CHEMICAL BRANCH

DISCIPLINE-	**SEMESTER:** 1ST	**NAME**-P JAGADISH ACHARY
SUBJECT- ENGINEERING MATHEMATICS	No of days/week class allotted= 6	Date of commencement of classes: 25.10.21 Closing of Attendance: 31.01.22 No. of Weeks:13
UNIT-1 (TRIGONOMETRY)		
WEEK	CLASS DAY	THEORY/PRACTICAL TOPICS
1ST	1ST	Introduction to Trigonometry
	2ND	Trigonometry ratios
	3RD	ASTC Rule
	4TH	ASTC Rule Application
	5TH	ASTC Rule Application
	6TH	Addition formula & Difference formula
2nd	1ST	Transformation of Sums or difference into products
	2ND	Applications of Trigonometry
	3RD	Applications of Trigonometry
	4TH	Introduction to Inverse trigonometry
	5TH	Properties of Principal Inverse trigonometry
	6TH	Numerical on properties of Principal Inverse trigonometry
3rd	1ST	Numerical on properties of Principal Inverse trigonometry
	2ND	Previous year questions discussion
	3RD	Previous year questions discussion
UNIT-2 (DETERMINANTS & MATRICES)		
3rd	4TH	Introduction to Determinants & Matrices
	5TH	Types of matrices
	6TH	Algebra of Matrices
4th	1ST	Matrix Multiplication
	2ND	Minor & a factors of Matrix
	3RD	Adjoint & Inverse of Matrix
	4TH	Solve by Matrix method
	5TH	Cramer's Rule
	6TH	Solve by Matrix method & Cramer's Rule
5th	1ST	Properties of determinant
	2ND	Properties of determinant
	3RD	Solving determinants without expansion
	4TH	Solving determinants without expansion
	5TH	Solving determinants without expansion
	6TH	Solving determinants without expansion
6th	1ST	Solving determinants without expansion
	2ND	Previous year questions discussion
	3RD	Previous year questions discussion

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DEPARTMENT OF MATHEMATICS AND SCIENCE

LECTURE PLAN

UNIT-3 (TWO DIMENSION GEOMETRY)		
6th	4TH	Introduction to two dimension Geometry
	5TH	Distance Formula & division formula
	6TH	Equation of line
7th	1ST	General form of Equation of line
	2ND	Angle between two lines & point of intersection
	3RD	Numericals on equation of line, angle & slope
	4TH	Numericals on equation of line, angle & slope
	5TH	Equation of a line parallel or perpendicular to a given line
	6TH	Equation of a line parallel or perpendicular to a given line
8th	1ST	Perpendicular distance of a point from line
	2ND	Numericals on Equation of a line
	3RD	Numericals on Equation of a line
	4TH	Introduction to circle & Equation of Circle
	5TH	General Equation of Circle
	6TH	Numericals on Equation of a circle
9th	1ST	Equation of a circle with given end points of a diameter
	2ND	Numericals on Equation of a circle
	3RD	Numericals on Equation of a circle
	4TH	Previous year questions discussion
	5TH	Previous year questions discussion
UNIT-4 (THREE DIMENSION GEOMETRY)		
9th	6TH	Introduction to three dimension Geometry
10th	1ST	Direction ratios & Direction Cosines
	2ND	Angle between two lines & projection
	3RD	Equation of plane
	4TH	General equation of plane
	5TH	Equation of plane through three given points
	6TH	Angle between two planes
11th	1ST	Distance of a point from a plane & equation of planes dissecting the angle between two given planes.
	2ND	Numericals
	3RD	Condition of Parallelism & perpendicularity
	4TH	Equation of a plane passing through a point & i. Parallel to a plane ii. Perpendicular to a plane
	5TH	Numericals on Equation of plane
	6TH	Numericals on Equation of plane
12th	1ST	Introduction to sphere & Equation of sphere

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DEPARTMENT OF MATHEMATICS AND SCIENCE

LECTURE PLAN

	2ND	General form of sphere
	3RD	Two end points of a diameter form
	4TH	Numericals on Equation of a Sphere
	5TH	Numericals on Equation of a Sphere
	6TH	Numericals on Equation of a Sphere
13th	1ST	Previous year questions discussion
	2ND	Previous year questions discussion
	3RD	Previous year questions discussion

Signature of faculty **Signature of HOD**

Principal
Govt. Polytechnic
Jagatsinghpur

Discipline: **civil & chemical engg**	Semester : **1ST**	Name of the Teaching Faculty: **RAKESH RANJAN MAHALIK**
Subject: **ENGG CHEMISTRY**	No. of days/per week class allotted: **04**	Semester From date : **25.10.21** To Date: **31.01.22** No. of Weeks: 15
Week	Class Day	Theory
1ST	1ST	Introduction
	2ND	Rutherford's atomic model (limitations), Atomic mass, mass number, isotopes, isobar
	3RD	Isotones, Bohr's atomic model, Bohr Bury scheme,
	4TH	Aufbau's principle, Hund's rule, Electronic configuration
2ND	1ST	CH-2: Chemical Bonding- Definition, types of bonding
	2ND	Ionic bonding, examples
	3RD	Covalent bonding , Examples
	4TH	Coordinate bonding, examples
3RD	1ST	Ch-3: Acid base theory-Arrhenius concept of acid & base
	2ND	Bronsted lowry & Lewis concept of acid & base
	3RD	Neutralization of acid & base, salts- definition & types.
	4TH	Definition of Atomic weight, molecular weight, equivalent weight,
4TH	1ST	Determination of equivalent weight of Acid, Base
	2ND	Determination of equivalent weight of salt
	3RD	Modes of expression of the concentrations (Molarity , Normality) with Simple Problems
	4TH	Molality with Simple Problems
5TH	1ST	pH of solution (definition with simple numerical)
	2ND	Importance of pH in industry (sugar, textile, paper industries only)
	3RD	Chapter 5 : Electrochemistry : Definition and types (Strong & weak) of Electrolytes with example.
	4TH	Electrolysis (Principle & process) with example of NaCl (fused and aqueous solution).
6TH	1ST	Faraday's 1st and 2nd law of Electrolysis (Statement, mathematical expression and Simple numerical)
	2ND	Industrial application of Electrolysis- Electroplating (Zinc only).
	3RD	Chapter 6 : Corrosion: Definition of Corrosion, Types of Corrosion- Atmospheric Corrosion,

	4TH	Waterline corrosion. Mechanism of rusting of Iron only. Protection from Corrosion by (i) Alloying and (ii) Galvanization.
7TH	1ST	Chapter 7 : Metallurgy: Definition of Mineral, ores , gangue with example. Distinction between Ores And Minerals.
	2ND	General methods of extraction of metals, i) Ore Dressing ii) Concentration (Gravity separation, magnetic separation, Froth floatation & leaching)
	3RD	iii) Oxidation (Calcinations, Roasting) iv) Reduction (Smelting, Definition & examples of flux, slag)
	4TH	v) Refining of the metal (Electrorefining, & Distillation only)
8TH	1ST	Chapter 8 : Alloys: Definition of alloy. Types of alloys (Ferro, Non Ferro & Amalgam) with example. Composition and uses of Brass, Bronze, Alnico, Duralumin
	2ND	Doubt clear
	3RD	Chapter 9 : Hydrocarbons : Saturated and Unsaturated Hydrocarbons (Definition with example) Aliphatic and Aromatic Hydrocarbons (Huckle's rule only). Difference between Aliphatic and aromatic hydrocarbons
	4TH	IUPAC system of nomenclature of Alkane,
9TH	1ST	IUPAC system of nomenclature of Alkene,
	2ND	IUPAC system of nomenclature of Alkyne,
	3RD	IUPAC system of nomenclature of alkyl halide and alcohol
	4TH	Uses of some common aromatic compounds (Benzene, Toluene, BHC, Phenol, Naphthalene, Anthracene and Benzoic acid) in daily life.
10TH	1ST	Doubt clear
	2ND	Chapter 10 : Water Treatment : Sources of water, Soft water, Hard water, hardness, 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) , Advantages of Hot lime over cold lime process.
	4TH	Organic Ion exchange method (principle, process, and regeneration of exhausted resins)
11TH	1ST	Doubt clear
	2ND	Chapter 11 : Lubricants: Definition of lubricant,

		Types (solid, liquid and semisolid with examples only)
	3RD	specific uses of lubricants (Graphite, Oils, Grease), Purpose of lubrication
	4TH	specific uses of lubricants (Graphite, Oils, Grease), Purpose of lubrication
12TH	1ST	Doubt clear
	2ND	Chapter 12 : Fuel: Definition and classification of fuel, Definition of calorific value of fuel, Choice of good fuel.
	3RD	Liquid: Diesel, Petrol, and Kerosene --- Composition and uses.
	4TH	Gaseous: Producer gas and Water gas (Composition and uses).
13TH	1ST	Elementary idea about LPG, CNG and coal gas (Composition and uses only).
	2ND	Doubt clear
	3RD	Chapter 13 : Polymer: Definition of Monomer, Polymer, Homo-polymer, Co-polymer and Degree of polymerization
	4TH	Difference between Thermosetting and Thermoplastic, Composition and uses of Polythene
14TH	1ST	& Poly-Vinyl Chloride and Bakelite.
	2ND	Definition of Elastomer (Rubber). Natural Rubber (it's draw backs).
	3RD	Vulcanisation of Rubber. Advantages of Vulcanised rubber over raw rubber.
	4TH	Doubt clear
15TH	1ST	Chapter 14: Chemicals in Agriculture: Pesticides: Insecticides,
	2ND	herbicides, fungicides- Examples and uses.
	3RD	Bio Fertilizers: Definition, examples and uses.
	4TH	Doubt clear

Learning Resources:

1. Textbook of Intermediate Chemistry Part-1 and Part-2 by Nanda, Das, Sharma,
2. Engineering Chemistry by Y.R. Sharma and P. Mitra, Kalyani Publishers
3. Engineering Chemistry for Diploma – Dr. R K Mohapatra, PHI Publication, New Delhi.

Lesson Plan of Electrical Department of Government Polytechnic, Jagatsinghpur

Discipline :- **civil & chemical engg.**	Semester:- 1St	Name of the Teaching Faculty:- **SHUBHRANSHU RANJAN SWAIN**
Subject:- **Basic Electrical Engg.**	No of Days/per Week Class Allotted :-**2**	Semester From:- **25.10.21** To:- **31.01.22** No of Weeks:- **16**
Week	**Class Day**	**Theory/ Practical Topics**
1st	1st	Concept of current flow. Concept of source and load.
	2nd	State Ohm's law and concept of resistance. Relation of V, I & R in series circuit.
2nd	1	Relation of V, I & R in parallel circuit. Division of current in parallel circuit.
	2nd	Effect of power in series & parallel circuit. Kirchhoff's Law. Simple problems on Kirchhoff's law.
3rd	1th	Generation of alternating emf. Difference between D.C. & A.C.
	2nd	2.3 Define Amplitude, instantaneous value, cycle, Time period, frequency, phase angle, phase difference.
4th	1st	2.4 State & Explain RMS value, Average value, Amplitude factor & Form factor with Simple problems.
	2nd	Represent AC values in phasor diagrams. AC through pure resistance, inductance & capacitance
5th	1st	2.7 AC though RL, RC, RLC series circuits.
	2nd	2.8 Simple problems on RL, RC & RLC series circuits.
6th	1st	Concept of Power and Power factor Impedance triangle and power triangle.
	2nd	3.1.1 Give elementary idea on generation of electricity from thermal power station with block diagram
7th	1st	3.1.2 Give elementary idea on generation of electricity from hydro power station with block diagram
	2nd	3.1.3 Give elementary idea on generation of electricity from nuclear power station with block diagram
8th	1st	Introduction of DC machines. Main parts of DC machines.
	2nd	Principle of operation of DC generator EMF equation of generator and simple problem
	1st	4.5 Classification of DC generator

Lesson Plan of Electrical Department of Government Polytechnic, Jagatsinghpur

9th		4.6 Principle of operation of DC motor.
	2nd	Classification of DC motor. Uses of different types of DC generators & motors
10th	1st	Types and uses of single phase induction motors.
	2nd	5.1 Types of wiring for domestic installations.
11th	1st	5.2 Layout of household electrical wiring (single line diagram showing all the important component in the system).
	2nd	5.3 List out the basic protective devices used in house hold wiring.
12th	1st	5.4 Calculate energy consumed in a small electrical installation
	2nd	Introduction to measuring instruments. Torques in instruments
13th	1st	Different uses of PMMC type of instruments (Ammeter & Voltmeter). Different uses of MI type of instruments (Ammeter & Voltmeter).
	2nd	6.5 Draw the connection diagram of A.C/ D.C Ammeter, voltmeter, energy meter and wattmeter. (Single phase only).
14th	1st	7.1 Concept of Lumen
	2nd	7.2.1 Different types of Lamps (Filament, fluorescent, Mercury Vapour) its Construction and Principle.
15th	1st	7.2.2 Different types of Lamps (Sodium Vapour, Neon, LED bulb) its Construction and Principle.
	2nd	7.3 Star rating of home appliances (Terminology, Energy efficiency, Starrating Concept)
16th	1st	
	2nd	Doubt Clearing Classes and Revision of Syllabus

Discipline :- **CIVIL/ CHEMICAL**	Semester:- **1st**	Name of the Teaching Faculty:- **SOUMYA PRAKASH SUTAR**
Subject:- **BASIC ELECTRONIC ENGINEERING (TH.04(b))**	No of Days/per Week Class Allotted :- **02**	Semester From:- 25.10.2021 to 31.01.2022
Week	**Class Day**	**Theory**
1ST	**1**	**ELECTRONIC DEVICES:** Basic Concept of Electronics and its application
	2	Electron Emission & different types
2ND	**1**	Classification of material according to electrical conductivity (Conductor, Semiconductor & Insulator) with respect to energy band diagram only.
	2	Intrinsic & Extrinsic Semiconductor
3RD	**1**	Difference between vacuum tube & semiconductor, Principle of working and use of PN junction diode,
	2	V-I characteristic of PN junction diode
4TH	**1**	Zener diode and Light Emitting Diode (LED)
	2	Basic concept of manufacturing integrated circuits (I.C) & its uses.
5TH	**1**	**ELECTRONIC CIRCUITS:** Define Rectifier & its use
	2	Principles of working of different types of Rectifiers and their merits and demerits
6TH	**1**	Functions of filters and classification of filter characteristics, D.C power supply system with help of block diagrams only
	2	Transistor, Different types of Transistor Configuration
7TH	**1**	state output and input current gain relationship in CE,CB and CC configuration.
	2	Need of biasing and different types of biasing with circuit diagram.(CE configuration)
8TH	**1**	Amplifiers and working principles of single phase CE amplifier
	2	Electronic Oscillator and its classification
9TH	**1**	Working of Basic Oscillator with different elements through simple Block Diagram
	2	**COMMUNICATION SYSTEM:** Basic communication system
10TH	**1**	Concept of Modulation and Demodulation, Difference between them
	2	Different types of Modulation ,Amplitude modulation concept
11TH	**1**	Concept of frequency and phase modulation
	2	**TRANSDUCERS AND MEASURING INSTRUMENTS:** Concept of Transducer and sensor with their differences
12TH	**1**	Different type of Transducers & concept of active and passive transducer
	2	Working principle of photo emissive, photoconductive
13TH	**1**	photovoltaic transducer and its application
	2	Multimeter and its applications

14TH	**1**	Analog and Digital Multimeter and their differences
	2	Working principle of Multimeter with Basic Block diagram
15TH	**1**	CRO , Block diagram of CRO and applications of CRO
	2	Previous Year Question Discussion

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