Spintronic Technology and Advance Research

Lesson Plan Session-23/24 Subject:BEE Faculty: Er. Brahmananda Das

Semester-All

Sl no.	Name of topics to be covered	No of periods required	Cumulative no of periods	Remarks
Module-1	Fundamentals			
1	Cocept of current flow	1	1	
2	Concept of source and load	1	2	
3	Ohm's law,concept of resistance,Relation V,I,R in Series and Parallrl Circuit	1	3	
4	Division of current in parallel circuit and effect of power in series and parallel circuit	1	4	
5	Kirchhoff's laws and problems	1	5	
Module-II	AC theory			
6	Generation of alternating emf.and difference between ac and dc	1	6	
7	AC teminology	2	8	
8	RMS value and Average value	1	9	
9	Phasor diagram of ac values,Ac through pure resistance,inductanctance,capacitance	1	10	
10	RL,RC,RLC series and parallel circuits,PF,Impendence triangle	2	12	
Module-III	Generation of Electrical power,Hydro,Thermal and nuclear power plant	3	15	
Module-IV	Conversion of Electrical Energy			
11	Introduction and main parts of dc machine	1	16	
12	Operation principle and emmf equation,classification	1	17	

13	Principle operation dc motor,classification and use	1	18	
14	Single phase induction motor and three phase induction motor	1	19	

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Lesson Plan Session-21/22 Subject:BEE Faculty: Er.. Brahmananda Das

Semester-All

Sl no.	Name of topics to be covered	No of periods required	Cumulative no of periods	Remarks
Module-V	Wiring and power billing			
18	Types of wiring in domestic installations,Lay out of single line diagram	2	21	
19	List of basic procative devices used in house hold wiring and energy consumed in small electrical rnstalations	2	23	
M0dule-VI	Measuring instruments			
20	Introduction and torque in instruments	1	24	
21	Uses of PMMC Instruments,MI instruments,Conection diagram ammeter voltmeter	2	26	

Reference: 1.Fundamentals of electrical engineering by J.B. Gupta2.Fundamentals of electrical and electronics engg.by B. L. Theraja

Spintronic Technology and Advance Research

Lesson Plan Session-22/23 Subject:Mathematics Faculty: Rakesh Mohapatra

Semester-2nd Diploma

Sl no.	Name of topics to be covered	No of periods required	Cumulative no of periods	Remarks
Module-1	**Vector Algebra**			
1	Representation of vector, Magnitude and direction of vector	1	1	
2	Types of vectors Operations on vectors (addition, subtraction and scalar multiplication) Position Vector	3	4	
3	Representation of vector in component form(2-D and 3-D)	2	6	
4	Scalar or dot product of two vectors Geometrical meaning of dot product. Scalar and Vector projection of two vectors Angle between two vectors	5	11	
5	Vector product Geometrical meaning of vector product(Area of triangle and parallelogram)	4	15	
Module-II	Limits and Continuity			
6	Introduction Definition of function, based on set theory Domain and Range of a function	2	17	
7	Classification of function Types of functions(constant,Identity,IxI, [x],trigonometric, etc)	1	18	
8	Introduction to limit Existence of limit	1	19	
9	Method of evaluation of limit Evaluation of infinite limits	4	23	
10	Evaluation of limits using formulas and substitution method, Continuity of a function at a point	4	27	
Module-	Derivatives			

III				
11	Introduction Derivative of a function at a point Geometrical Interpretation of derivative	2	29	
12	Derivative of some standard functions etc. Derivative of composite functions (chain rule)	3	32	
13	Method of differentiation using substitution methods and logarithms Differentiation of parametric functions	5	37	
14	Differentiation of a function w.r.t. another function. Differentiation of Implicit functions	5	42	
15	Application of derivatives Successive Differentiation Partial Differentiation (function of two variables up to second order)	6	48	

Spintronic Technology and Advance Research

Lesson Plan Session-22/23 Subject:Mathematics Faculty: Rakesh Mohapatra

Semester-2nd Diploma

Sl no.	Name of topics to be covered	No of periods required	Cumulative no of periods	Remarks
Module-iv	Integration			
18	Definition of integration as inverse of differentiation Integrals of some standard	2	50	

	function			
19	Methods of Integration i) Substitution Integration of forms ∫ ∫ etc using substitution method	3	53	
20	i) Integration By parts Integration of forms $\int \sqrt{a^2 - x^2}dx$, $\int \sqrt{a^2 + x^2}dx$ using by parts Definition of Definite Integral	4	57	
21	Fundamental theorem of Integral Calculus Properties of Definite Integral Application of Integration	4	61	
22	1. Area enclosed by a curve and X- axis. 2. Area of a circle with centre at origin	2	63	

Module-v	DifferentialEquation			
23	Order and degree of a differential equation Solution of Differential equation 1st order and 1st degree	5	68	
24	i) variable separable method	3	71	
25	i) Linear equation $\frac{dy}{dx} + Py = Q$, where P,Q are functions of x.	4	75	

26	Doubt clear class	5	80	

Reference Books:

1. Elements of Mathematics _ Vol. _ 1 & 2 (Odisha State Bureau of TextBook preparation & Production)

2. Mathematics Part- I & Part- II- Textbook for Class XII, NCERT Publication