LESSON PLAN FOR SUMMER SEMESTER(2023-24)

Discipline : 2nd Semester(common)
Name of the Faculty: SAMIRA KUMAR PATHI (Lect. in Mathematics)

Subject: Engg. Mathematics-II	**5 therory & 1 tutorial classes per week**	**From: 29/01/2024 To: 14/05/2024 No. of Weeks: 16 Total no. periods : 75 Theory+ 15 Tutorial**	
Week	**Class Day**	**Theory**	**Range**
1st	1st	***VECTOR ALGEBRA*** a) Introduction	29.01.2024 to 04.02.2024
	2nd	Types of vectors (null vector, parallel vector , collinear vectors) (in component form)	
	3rd	Representation of vector	
	4th	Magnitude and direction of vectors	
	5th	Addition and subtraction of vectors	
	6th	*Tuitorial class*	
2nd	1st	Position vector	05.02.2024 to 11.02.2024
	2nd	Scalar product of two vectors	
	3rd	Geometrical meaning of dot product	
	4th	Angle between two vectors	
	5th	Angle between two vectors	
	6th	*Tuitorial class*	
3rd	1st	Scalar and vector projection of two vectors	12.02.2024 to 18.02.2024
	2nd	Scalar and vector projection of two vectors	
	3rd	Vector product and geometrical meaning	
	4th	Area of triangle and parallelogram	
	5th	Area of triangle and parallelogram	
	6th	*Tuitorial class*	
4th	1st	**LIMITS AND CONTINUITY** a) Definition of function, based on set theory	19.02.2024 to 25.02.2024
	2nd	Types of functions i) Constant function ii) Identity function iii)Absolute value function iv)The Greatest integer function	
	3rd	Types of functions v) Trigonometric function vi) Exponential function vii) Logarithmic function	
	4th	Introduction of limit	
	5th	Introduction of limit	
	6th	*Tuitorial class*	
5th	1st	Existence of limit	26.02.2024 to 03.03.2024
	2nd	Methods of evaluation of limit	
	3rd	Methods of evaluation of limit	
	4th	Methods of evaluation of limit	
	5th	Methods of evaluation of limit	
	6th	*Tuitorial class*	

6th	1st	Definition of continuity of a function at a point	04.03.2024 to 10.03.2024
	2nd	Definition of continuity of a function at a point	
	3rd	**DERIVATIVES** Derivative of a function at a point	
	4th	Derivative of a function at a point	
	5th	Algebra of derivative	
	6th	*Tuitorial class*	
7th	1st	Algebra of derivative	11.03.2024 to 17.03.2024
	2nd	Derivative of standard functions	
	3rd	Derivative of standard functions	
	4th	Derivative of standard functions	
	5th	Derivative of composite function (Chain Rule)	
	6th	*Tuitorial class*	
8th	1st	Derivative of composite function (Chain Rule)	18.03.2024 to 24.03.2024
	2nd	Derivative of composite function (Chain Rule)	
	3rd	Methods of differentiation of i) Parametric function	
	4th	Methods of differentiation of ii) Implicit function	
	5th	Methods of differentiation of iii) Logarithmic function	
	6th	*Tuitorial class*	
9th	1st	Methods of differentiation of iv) a function with respect to another function	25.03.2024 to 31.03.2024
	2nd	Applications of Derivative i) Successive Differentiation (up to second order)	
	3rd	Applications of Derivative i) Successive Differentiation (up to second order)	
	4th	Applications of Derivative ii) Partial Differentiation (function of two variables up to second order)	
	5th	Applications of Derivative ii) Partial Differentiation (function of two variables up to second order)	
	6th	*Tuitorial class*	
10th	1st	**INTEGRATION** a) Definition of integration as inverse of differentiation	01.04.2024 to 07.04.2024
	2nd	Integrals of standard functions	
	3rd	Integrals of standard functions	
	4th	Methods of integration i) Integration by substitution	
	5th	Methods of integration ii) Integration by parts	
	6th	*Tuitorial class*	

11th	1st	Methods of integration ii) Integration by parts	08.04.2024 to 14.04.2024
	2nd	Integration of the following forms i) $\int \frac{dx}{x^2+a^2}$ ii) $\int \frac{dx}{x^2-a^2}$ iii) $\int \frac{dx}{a^2-x^2}$	
	3rd	Integration of the following forms i) $\int \frac{dx}{x^2+a^2}$ ii) $\int \frac{dx}{x^2-a^2}$ iii) $\int \frac{dx}{a^2-x^2}$	
	4th	Integration of the following forms iv) $\int \frac{dx}{\sqrt{x^2+a^2}}$ v) $\int \frac{dx}{\sqrt{x^2-a^2}}$ vi) $\int \frac{dx}{\sqrt{a^2-x^2}}$	
	5th	Integration of the following forms iv) $\int \frac{dx}{\sqrt{x^2+a^2}}$ v) $\int \frac{dx}{\sqrt{x^2-a^2}}$ vi) $\int \frac{dx}{\sqrt{a^2-x^2}}$	
	6th	*Tuitorial class*	
12th	1st	Integration of the following forms vii) $\int \frac{dx}{x\sqrt{x^2-a^2}}$ viii) $\int \sqrt{a^2-x^2}\,dx$ ix) $\int \sqrt{a^2+x^2}\,dx$ x) $\int \sqrt{x^2-a^2}\,dx$	15.04.2024 to 21.04.2024
	2nd	Integration of the following forms vii) $\int \frac{dx}{x\sqrt{x^2-a^2}}$ viii) $\int \sqrt{a^2-x^2}\,dx$ ix) $\int \sqrt{a^2+x^2}\,dx$ x) $\int \sqrt{x^2-a^2}\,dx$	
	3rd	Definite Integral	
	4th	properties of definite integrals	
	5th	properties of definite integrals	
	6th	*Tuitorial class*	
13th	1st	properties of definite integrals	22.04.2024 to 28.04.2024
	2nd	properties of definite integrals	
	3rd	Application of integration i) Area enclosed by a curve and X – axis	
	4th	Application of integration i) Area enclosed by a curve and X – axis	
	5th	Application of integration ii) Area of a circle with centre at origin	
	6th	*Tuitorial class*	
14th	1st	**DIFFERENTIAL EQUATION** a) Order and degree of a differential equation	29.04.2024 to 05.05.2024
	2nd	DIFFERENTIAL EQUATION a) Order and degree of a differential equation	
	3rd	b) Solution of differential equation i) 1st order and 1st degree equation by the method of separation of variables	
	4th	b) Solution of differential equation i) 1st order and 1st degree equation by the method of separation of variables	
	5th	b) Solution of differential equation i) 1st order and 1st degree equation by the method of separation of variables	

	6th	*Tuitorial class*	
15th	1st	Solution of differential equation Linear equation $\frac{dy}{dx} + Py = Q$, where P,Q are functions of x	05.05.2024 to 11.05.2024
	2nd	Solution of differential equation Linear equation $\frac{dy}{dx} + Py = Q$, where P,Q are functions of x	
	3rd	Solution of differential equation Linear equation $\frac{dy}{dx} + Py = Q$, where P,Q are functions of x	
	4th	Solution of differential equation Linear equation $\frac{dy}{dx} + Py = Q$, where P,Q are functions of x	
	5th	Solution of differential equation Linear equation $\frac{dy}{dx} + Py = Q$, where P,Q are functions of x	
	6th	*Tuitorial class*	
16th		Revision	12.05.2024 to 14.05.2024