

DHABALESWAR INSTITUTE OF POLYTECHNIC, ATHGARH

LESSON PLAN

Discipline- Diploma Engg **Semester-** 2nd **Name of Faculty-** Ashisha Panda

Subject- Engg. Math-II **No. of day for week class allotted-** 06

Semester - From Dt. 20.03. 2023 To Dt. 27.06.2023 . **No. of week-** 14

Week	Class Day	Theory Topics
1 st	1 st	Course Introduction
	2 nd	Discussion on 1st semester question & doubt clearance
	3 rd	Brief discussion on Algebraic formula
	4 th	Brief discussion on Trigonometry
	5 th	Brief discussion on inverse trigonometric function
	6 th	Brief discussion on geometry (2D and 3D)
2 nd	1 st	Brief discussion on geometry (St. line and Plane)
	2 nd	Introduction of vector and scalar with definition and type of vector.
	3 rd	Representation of vector, Magnitude and direction of vector. Addition , subtraction and scalar multiplication of vectors
	4 th	Position vector. Vector in compound form and problem
3 rd	1 st	Scalar product (or dot product) of two vectors. Geometrical meaning of dot product. Scalar projection & vector projection.
	2 nd	Dot product in component form
	3 rd	Angle between two vectors. scalar and vector projection in component form
	4 th	Condition of perpendicularity and parallelism in component form
	5 th	Problems.
4 th	1 st	Vector product of two vectors and its geometrical meaning.
	2 nd	Vector product in component form
	3 rd	Area of triangle and parallelogram with given two sides. Area of parallelogram with given diagonals
	4 th	Scalar triple product in component form
	5 th	Revision and doubt clearance
5 th	1 st	Defining set theory and the function based on set theory
	2 nd	Type of function(constant, identity, absolute,greatest integer,Trigonometry, exponential,logarithmic,inverse,odd & even etc..)
	3 rd	Type of function continue

	4 th	Introduction to limit
	5 th	Steps to evaluate the limit of a function
	6 th	Formula of the limit
6 th	1 st	Left hand limit and right hand limit and existence of limit
	2 nd	Problems
	3 rd	Definition of continuity of a function at a point and problem based on it.
	4 th	Problem on limit and continuity
	5 th	Defining derivative of a function at a point
	6 th	Derivative of standard function by using definition
7 th	1 st	Problems
	2 nd	Algebra of derivative(Addition,Subtraction, Mul , Div)
	3 rd	Problems
	4 th	Derivative of composite function(Chain rule)
	5 th	Derivative of parametric function
8 th	1 st	Derivative of implicitly function
	2 nd	Derivative using logarithm
	3 rd	Derivative of a function with respect to another function
	4 th	Problems
	5 th	Successive differentiation(upto 2nd order)
	6 th	Partial differentiation (function of two variables upto 2nd order)
9 th	1 st	Problems
	2 nd	Revision & Doubt clearance
	3 rd	Definition of integration as inverse of differentiation. Formula for integration of standard function and Problems
	4 th	Integration by substitution
	5 th	Problems
10 th	1 st	Integration by parts
	2 nd	Problem using by parts
	3 rd	Integration of the function like x^2+a^2 , $x^2- a^2$, $a^2- x^2$
	4 th	Problem of above
	5 th	Definite integral and its problem
	6 th	Properties of definite integral with example
11 th	1 st	Problem of above
	2 nd	Area enclosed by a curve and x-axis or y-axis
	3 rd	Area of a circle with centre at origin
	4 th	Revision and doubt clearance of integration
	5 th	Definition of differential equation. order and degree of the differential equations
	6 th	Solution of the 1st order and 1st degree differential equation by method of variable separation.
12 th	1 st	Problem on above
	2 nd	Solution of linear differential equation $dy/dx+Py=Q$
	3 rd	Problem on above

	4 th	Revision and doubt clearance of differential equation.
	5 th	Revision of vector
	6 th	Revision of vector product
13 th	1 st	Revision of limit
	2 nd	Revision of continuity
	3 rd	Revision of differentiation (by definition)
	4 th	Revision of derivative
14 th	1 st	Revision of partial differential equation
	2 nd	Revision of Integration
	3 rd	Revision of Integration by parts
	4 th	Revision of Definite integral
	5 th	Revision of application of Integration
	6 th	Revision of differential equation
15 th	1 st	Revision of linear differential equation
	2 nd	Sample paper discussion