

Koyana Education Society's
Balasaheb Desai College, Patan
Monthly Teaching Plan
2023-2024

Subject Name: Mathematics

Class: B. Sc-I

Paper Name: Calculus

Month: September

Date	Unit/Subunit	Teaching Method
01/09/23	Calculus Paper II: Unit 1-Mean value theorems & Indeterminate forms-introduction	Lecture/ Problem solving
02/09/23	Successive differentiation: Higher order derivatives notations, calculations of nth order derivatives: standard results	Lecture
04/09/23	Nth derivative of rational functions & examples	Lecture
05/09/23	Nth derivative of product of the powers of sines & cosines examples	Lecture
05/08/23	Leibnitz's theorem nth derivative of product of two functions	Problem solving
06/09/23	Examples on Leibnitz's theorem	Problem solving
07/09/23	Mean Value theorems: Rolle's mean value theorem & its geometrical interpretation	Problem solving
08/09/23	Lagrange's mean value theorem & its geometrical interpretation	Lecture
09/09/23	Cauchy's mean value theorem & examples	Lecture
11/09/23	Examples on Mean value theorems	Lecture
12/09/23	Maclaurin's theorem & examples	Problem solving
13/09/23	Taylor's theorem & examples	Problem solving
14/09/23	Unit-II Limit & Continuity of real valued functions	Problem solving
15/09/23	$\epsilon - \delta$ definition of limit of function of one variable, left and right-hand side limits, theorems on limits (statements only)	Lecture
16/09/23	Continuous functions & their properties, Theorems on continuity	Problem solving
25/09/23	Classification of discontinuities (first & second kind)	Problem solving
26/09/23	Differentiability at a point, left hand derivative, right hand derivative, differentiability in $[a, b]$	Lecture
27/09/23	Theorem: Continuity is necessary but not a sufficient condition or existence of derivative.	Problem solving
30/09/23	Theorems on continuity	Problem solving


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Monthly Teaching Plan

2023-2024

Subject Name: Mathematics

Class: B. Sc-II

Paper Name: Numerical Methods
September

Month:

Date	Unit/Subunit	Teaching Method
01/09/23	Unit 1-1.1 Solutions of algebraic and transcendental equations: Introduction & mathematical preliminaries	Lecture
02/09/23	Bisection Method theory	Lecture
04/09/23	Examples on Bisection method	Problem solving
05/09/23	Examples on Bisection method	Problem solving
05/08/23	Method of false position method theory	Lecture
06/09/23	Examples on false position method	Problem solving
07/09/23	Examples on false position method	Problem solving
08/09/23	Method of Newton Raphson method theory	Lecture
09/09/23	Examples on Newton Raphson method	Problem solving
11/09/23	Examples on Newton Raphson method	Problem solving
12/09/23	1.2 Interpolation: Introduction	Lecture
13/09/23	Concepts of Finite difference, forward difference, backward difference	Lecture
14/09/23	Examples on Finite difference, forward difference, backward difference	Problem solving
15/09/23	Examples on Finite difference, forward difference, backward difference	Problem solving
16/09/23	Symbolic relations & separation of symbols	Problem solving
25/09/23	Examples on Symbolic relations & separation of symbols	Problem solving
26/09/23	Newton's formulae for interpolation (Forward)	Lecture
27/09/23	Examples on Newton's Forward interpolation formulae	Problem solving
30/09/23	Newton's formulae for interpolation (backward)	Lecture


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2023-2024

Subject Name: Mathematics

Class: B. Sc-III

Paper Name: Integral Transform

Month: September

Date	Unit/Subunit	Teaching Method
01/09/23	Unit 1:1.1 Laplace Transform: Def, Existence theorem	Lecture/ Problem solving
02/09/23	Laplace transform of standard results with proof	Lecture
04/09/23	First shifting theorem proof & examples	Lecture
05/09/23	Second shifting theorem proof & examples	Lecture
05/08/23	Change of scale property proof & examples	Problem solving
06/09/23	Effect of multiplication & division proof & examples	Problem solving
07/09/23	Laplace transform of derivative & integral proof & examples	Problem solving
08/09/23	Periodic function proof & examples	Lecture
09/09/23	Heaviside Unit step function proof & examples	Lecture
11/09/23	1.2 Inverse Laplace Transform: Def, inverse Laplace transform of standard functions	Lecture
12/09/23	First shifting theorem proof & examples	Problem solving
13/09/23	Second shifting theorem proof & examples	Problem solving
14/09/23	Inverse Laplace transform of derivative examples	Problem solving
15/09/23	Effect of division by t and examples	Lecture
16/09/23	Effect of multiplication examples	Problem solving
25/09/23	Convolution theorem proof & examples	Problem solving
26/09/23	Inverse Laplace by partial fraction	Lecture
27/09/23	Solving differential equations with constant coefficients	Problem solving
30/09/23	Unit 2: Fourier Transform: Infinite Fourier transform & inverse	Lecture


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