Adv. M. N. Deshmukh Art's Commerce and Science College , Rajur

Annual planning for the year 2022-2023

S . Y . Bsc . Mathematics Paper I

Sr. No.	Month	Total Lectures	Name of the topic
	Sem- I		**Paper I – Calculus of several variable.**
1	June 2022	06	**Ch.1 Limits and Continuity of Multivariable functions** 1.1 Functions of several variable: Function of two variable, domain and range, graphs, level curves, function of three or more variable. 1.2 Limits and Continuity.
2	July 2022	10	**Ch – 2 Partial Derivatives and differentiability.** 2.1 Definition and examples. 2.2 Higher derivative, Clairauts theorem(statement only), Partial differential equation, Laplace equation and Wave equation. 2.3 Differentiable function, Differentials. 2.4 Chain rule, Homogeneous function, Euler's Theorem.
3	Aug 2022	08	**CH.3 Extreme Value.** 3.1 Extreme value of a function of two variables. 3.2 Necessary condition for extreme value. 3.3 Second derivative test. 3.4 Lagrange Multipliers(with one constraints)
4	Sep 2022	08	**Ch -5 Multiple integrals.** 5.1 Iterated integrals, Fabinis

			theorem(Statement only)
			5.2 Double integral over general region, Change of order of integration for two variables.
			5.3 Double integral in polar form.
5	Oct 2022	04	5.4 Triple integrals, Evaluation of triple integral, Triple integral in spherical co-ordinates.
			5.5 Jacobians, Change of variables in multiple integrals(without proof)
	Sem II		**Paper I – Linear Algebra**
1	Dec 2022	06	**Ch -1 Matrices and System of Linear Equations.**
			1.1 Row echelon form and reduced row echelon form of matrix.
			1.2 Definition of rank of matrix using row and reduced row echelon form of matrix.
			1.3 System of linear equations: Matrix form of linear equations, definition of row equivalent matrices.
			1.4 Consistency of homo. & non-homo. System of linear equations using rank, Condition of consistency.
			1.5 Solution of system of equations: Gauss's elimination and Gauss's - Jordan elimination method, examples.
2	Jan 2023	10	**CH – 2 Vector space – I**
			2.1 Definition and examples.
			2.2 Subspaces.
			2.3 Linear dependence and Indepedence.
			2.4 Basis of a vector space.

3	Feb 2023	08	**CH – 3 Vector space – II** 3.1 Dimension of a vector space. 3.2 Row space, column space & null space of a Matrix. 3.3 Rank and Nullity.
4	Mar 2023	08	**CH – 4 Linear transformation.** 4.1 Definition and examples, Properties, Equalities. 4.2 Kernel and range of L. T. 4.3 Rank-Nullity theorem. 4.4 Composite transformation and Inverse transformation.
5	April 2023	04	4.5 Matrices and Linear transformation. 4.6 Basic Matrix transformations in R^2 and R^3.