LORETO COLLEGE
Department of Mathematics

LESSON PLAN 2022

Name of the teacher : Dr Satyabrota Kundu
Initials : SK
Teaching Objectives :

- To impart comprehensive knowledge in theoretical and empirical perspectives on the core mathematical issues.
- To indoctrinate the fundamental mathematical tools required for empirical appraisal of various mathematical problems.
- To give exposure to analytical and logical matters subsumed in mathematical theories.

2nd Semester Topic-wise Lesson Plan

Topics	*Marks Allotted*	*Hours allotted*	*Topics (as per curriculum)*	*Teaching method*	*Learning outcome (output)*	*Assessment*
Differential Calculus-II	**20**	**15**	**1.** Sequence of real numbers. **2.** Infinite series of constant terms. **3.** Real-Valued functions defined on an interval. **4.** Indeterminate Forms. **5.** Application of the principle of Maxima and Minima. **6.** Characteristic Equation of a matrix.	Class lecture and problem solving sessions. Revisions and doubt clearing slots.	Achieve a fervent understanding of advanced algebra.	Class test and home assignments.
Differential Equation-II	**15**	**10**	**1.** Linear homogeneous equations with constant coefficients, Linear non-homogeneous equations, The method of variation of parameters, The Cauchy-Euler equation, Simultaneous differential equations, Simple eigenvalue problem. Order and degree of partial differential equations, Concept of linear and non-linear partial differential equations, Formation of first order partial differential equations, Linear partial differential equation of first order, Lagrange's method, Charpit's method.	Class lecture and problem solving sessions. Revisions and doubt clearing slots.	Gather theoretical insights of the fundamental calculus.	Class test and home assignments.

Vector Algebra	**15**	**10**	**1.** Addition of Vectors, Multiplication of a Vector by a Scalar. Collinear and Coplanar Vectors. Scalar and Vector products of two and three vectors. Simple applications to problems of Geometry. Vector equation of plane and straight line. Volume of Tetrahedron. Applications to problems of Mechanics (Work done and Moment).	Class lecture and problem solving sessions. Revisions and doubt clearing slots.	Getting skilled in problem solving techniques.	Class test and home assignments .
Discrete Mathematics		**25**	1. Integers 2. Congruences 3. Application of Congruences 4. Congruence Classes 5. Boolean algebra	Class lecture and problem solving sessions. Revisions and doubt clearing slots.	Getting skilled in problem solving techniques.	Class test and home assignments .