Course Outcome: Choice Based Credit System (CBCS)

Mathematics (Regular)

Semester	Paper Code	Paper Name	Course Outcome
TDC 1st Semester	**MAT-RC-1016**	**Calculus**	This course will enable the students to: i) Learn differentiability, limit and continuity tests for functions. ii) Learn different theorems alongwith their geometric properties. iii) Learn partial differentiation of functions
TDC 2nd Semester	**MAT-RC-2016**	**Algebra**	This course will enable the students to: i) Employ De Moivre's theorem to solve problems. ii) Learn about matrices, determinant and application in solving system of euations iii) Learn about vector space algebra and their application
TDC 3rd Semester	**MAT-RC-3016**	**Differential Equations**	The course will enable the students to: i) Learn basics of differential equations and methods for solving.
TDC 3rd Semester	**MAT-SE-3014**	**Computer Algebra Systems and Related Software**	This course will enable the students to: i) Use of software; Mathematica/MATLAB/Maxima/Maple, etc. as a calculator, for plotting functions and animations. ii) Use of CAS for various applications of matrices such as solving system of equations and finding eigenvalues and eigen vectors. iii) Analyze, test, and interpret technical arguments on the basis of geometry
TDC 4th Semester	**MAT-RC-4016**	**Real Analysis**	This course will enable the students to: i) Recognize bounded, convergent, divergent, Cauchy and monotonic

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			sequences and to calculate their limit, algebra of limit and uniform continuity of functions. ii) Apply the ratio, root, alternating series and limit comparison tests for convergence and absolute convergence of an infinite series of real numbers.
TDC 4th Semester	**MAT-SE-4014**	**R Programming**	This course will enable the students to: i) Be familiar with **R** syntax and use **R** as a calculator. ii) Understand the concepts of objects, vectors and data types. iii) Know about summary commands and summary table in **R**. iv) Visualize distribution of data in **R** and learn about normality test. v) Plot various graphs and charts using R.
TDC 5th Semester	**MAT-SE-5014**	**Combinatorics and Graph Theory**	This course will enable the students to: i) Learn about the counting principles, permutations and combinations, Pigeon hole principle ii) Understand the basics of graph theory and learn about social networks, Eulerian and Hamiltonian graphs, diagram tracing puzzles and Knight's tour problem.
TDC 5th Semester	**MAT-RE-5016**	**Number Theory**	This course will enable the students to: i) Learn about some fascinating discoveries related to the properties of prime numbers, and some of the open problems in number theory, viz., Goldbach conjecture etc. ii) Know about number theoretic functions and modular arithmetic. iii) Solve linear, quadratic and system

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			of linear congruence equations.
TDC 5th Semester	**MAT-RE-5026**	**Discrete Mathematics**	After the course, the student will be able to: i) Understand the notion of ordered sets and maps between ordered sets. ii) Learn about lattices, modular and distributive lattices, sublattices and homomorphisms between lattices. iii) Become familiar with Boolean algebra, Boolean homomorphism, Karnaugh diagrams, switching circuits and their applications.
TDC 6th Semester	**MAT-SE-6014**	**LaTeX and HTML(P)**	After studying this course the student will be able to: i) Create and typeset a LaTeX document. ii) Typeset a mathematical document using LaTex. iii) Learn about pictures and graphics in LaTex. iv) Create beamer presentations. v) Create web page using HTML.
TDC 6th Semester	**MAT-RE-6016**	**Numerical Analysis**	The course will enable the students to: i) Learn some numerical methods to find the zeroes of nonlinear functions of a single variable and solution of a system of linear equations, up to a certain given level of precision. ii) Know about iterative and non-iterative methods to solve system of linear equations iii) Know interpolation techniques to compute the values for a tabulated function at points not in the table. iv) Integrate a definite integral that cannot be done analytically

			v) Find numerical differentiation of functional values vi) Solve differential equations that cannot be solved by analytical methods
TDC 6th Semester	**MAT-RE-6026**	**Programming in C**	After completion of this paper, student will be able to: i) Understand and apply the programming concepts of C which is important to mathematical investigation and problem solving. ii) Learn about structured data-types in C and learn about applications in factorization of an integer and understanding Cartesian geometry and Pythagorean triples. iii) Use of containers and templates in various applications in algebra. iv) Use mathematical libraries for computational objectives. v) Represent the outputs of programs visually in terms of well formatted text and plots.