

Subject: Mathematics

COURSE OUTCOME

Semester	Course code	Course name	Course Outcome	
I	MAT-RC-1016:	Calculus	The students who take this course will be able to: i) Understand continuity and differentiability in terms of limits. ii) Describe asymptotic behavior in terms of limits involving infinity. iii) Use derivatives to explore the behavior of a given function, locating and classifying its extrema, and graphing the function. iv) Understand the importance of mean value theorems	
II	MAT-RC-2016:	Algebra	This course will enable the students to: i) Learn how to solve the cubic and biquadratic equations, also learn about symmetric functions of the roots for cubic and biquadratic ii) Employ De Moivre's theorem in a number of applications to solve numerical problems. iii) Recognize consistent and inconsistent systems of linear equations by the row echelon form of the augmented matrix. Finding inverse of a matrix. iv) Recognize the mathematical objects that are groups, and classify them as abelian, cyclic and permutation groups, ring etc	
III	MAT-RC-3016:	Differential Equations	The course will enable the students to: i) Learn basics of differential equations and mathematical modelling. ii) Solve first order non-linear differential equations and linear differential equations of higher order using various techniques.	
IV	MAT-RC-4016	Real Analysis	This course will enable the students to: understand many properties of the real line \mathbb{R} , including completeness and Archimedean properties. ii) Learn to define sequences in terms of functions from \mathbb{R} to a subset of \mathbb{R} . iii) Recognize bounded, convergent, divergent, Cauchy and monotonic sequences and to calculate their limit superior, limit inferior, and the limit of a bounded sequence. iv) Apply the ratio, root and limit comparison tests for convergence and absolute convergence of an infinite series of real numbers.	
		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 of linear congruence equations.

V	DSE-1	MAT-RE-5026:	Discrete	Discrete Mathematics After the course, the student will be able to: Understand the notion of ordered sets and maps between ordered sets. Learn about lattices, modular and distributive lattices, sublattices and homomorphisms between lattices. Become familiar with Boolean algebra, Boolean homomorphism, Karnaugh diagrams, switching circuits and their applications. Learn about basics of graph theory, including Eulerian graphs, Hamiltonian graphs. Learn about the applications of graph theory in the study of shortest path algorithms.
VI	DSE-2	MAT-HE 6016:	Boolean Algebra and Automata Theory	Course Learning Outcomes: The course will enable the students to: <ul style="list-style-type: none"> i) Will learn about the order isomorphism, Hasse diagrams, building new ordered set. ii) Will learn about the algebraic structure lattices, properties of modular and distributive lattices. iii) Will get ideas about the Boolean algebra, Switching circuits and applications of switching circuits. iv) Appreciate the theory of automata and its applications.