

Course Outcome

Course	Outcome
Foundation of Mathematics	<p>On completion of this course, successful students will be able to:</p> <p>prove statements about sets and functions; analyze statements using truth tables; Construct simple proofs. Familiarize mathematical Symbols and standard methods of proofs.</p>
ANALYTIC GEOMETRY, TRIGONOMETRY AND DIFFERENTIAL CALCULUS	<p>On completion of this course, successful students will be able to:</p> <p>find the equation to tangent, normal at a point on a conic ; find the polar equation of a line, circle ,tangent and normal to conics familiarize real and imaginary parts of a circular and hyperbolic functions of a complex variable solve a System of Linear equations using the inverse of a matrix familiarize characteristic roots and characteristic vectors. To find the inverse of a matrix by Cayley-Hamilton theorem</p>
CALCULUS	<p>After completing this course the learner should be able to</p> <p>Find the higher order derivative of the product of two functions. Expand a function using Taylor's and Maclaurin's series. Conceive the concept of asymptotes and obtain their equations. Learn about partial derivatives and its applications. Find the area under a given curve, length of an arc of a curve when the equations are given in parametric and polar form. Find the area and volume by applying the techniques of double and triple integrals</p>
VECTOR CALCULUS, THEORY OF NUMBERS AND LAPLACE TRANSFORM	<p>After studying this course the students should be able to</p> <p>Refresh vector equation and Parametric equations for lines and planes Learn more about vectors such as vector functions ,unit tangent vector , unit normal vector Conceive the concept of the Vector Integration such as vector fields and line integrals , surface integral, stock's theorem. Learn basic properties of congruence, Fermat's theorem, Wilson's theorem, Euler's phi function. Familiarize the Laplace transform, Linearity of Laplace transform, First shifting theorem, Existence of Laplace transform, Laplace transform of the integral of a function.</p>

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MATHEMATICAL ANALYSIS	<p>After studying this course the students should be able to</p> <p>Introduction to real analysis ,Concepts about sets, real line, application of supremum property, Order properties of \mathbb{R}, Intervals.</p> <p>Familiarize the topic sequences such as monotone sequence, sub-sequences, Bolzano-Weierstrass theorem and the Cauchy criterion.</p> <p>Introduction to Series, Absolute Convergence, Tests for Absolute convergence, Tests for non absolute Convergence</p> <p>Limits of Functions, Limit Theorems, Some Extensions of the Limit Concept.</p>
DIFFERENTIAL EQUATIONS	<p>After studying this course the students should be able to</p> <p>Obtain an integrating factor which may reduce a given differential equation into an exact one and eventually provide its solution.</p> <p>Identify and obtain the solution of Clairaut's equation.</p> <p>Find the complementary function and particular integrals of linear differential equation.</p> <p>Familiarize the orthogonal trajectory of the system of curves on a given surface.</p> <p>Method of solution of the differential equation</p> <p>Describe the origin of partial differential equation and distinguish the integrals of first order linear partial differential equation into complete, general and singular integrals.</p> <p>Use Lagrange's method for solving the first order linear partial differential equation</p>
ABSTRACT ALGEBRA	<p>After studying this course the students should be able to</p> <p>Binary operations, Isomorphic binary structures, Groups-elementary properties of groups, finite groups and group tables, subgroups, cyclic subgroups, cyclic groups, elementary properties of cyclic groups</p> <p>Permutations, cosets, and direct products-groups of permutations, Cayley's theorem, orbits, cosets and the theorem of Lagrange</p> <p>Study of Homomorphisms and Factor groups</p> <p>Rings and fields, Integral domains, Ideals Homomorphisms and factor rings</p>

Course	Outcome
<p>HUMAN RIGHTS AND MATHEMATICS FOR ENVIRONMENTAL STUDIES</p>	<p>Environmental Education encourages students to research, investigate how and why things happen, and make their own decisions about complex environmental issues. By developing and enhancing critical and creative thinking skills, It helps to foster a new generation of informed consumers, workers, as well as policy or decision makers. Environmental Education helps students to understand how their decisions and actions affect the environment, builds knowledge and skills necessary to address complex environmental issues as well as ways we can take action to keep our environment healthy and sustainable for the future, encourage character building, and develop positive attitudes and values. To develop the sense of awareness among the students about the environment and its various problems and to help the students in realizing the inter-relationship between man and environment for protecting the nature and natural resources. To help the students in acquiring the basic knowledge about environment and to inform the students about the social norms that provide unity with environmental characteristics and create positive attitude about the environment.</p>
<p>REAL ANALYSIS</p>	<p>After studying this course the students should be able to</p> <p>Topics dealing with continuous functions Differentiation-its derivative, Mean Value Theorem, L' Hospital Rules, Taylor's Theorem Reimann Integral and its applications</p>
<p>GRAPH THEORY AND METRIC SPACES</p>	<p>After studying this course the students should be able to</p> <p>Introduction to Graph theory, Matrix representation of graph and its applications Study of Trees, Bridges, Euler's Tours, Hamiltonian graphs Topics dealing with Metric spaces Convergence, Completeness, Continuous Mapping</p>
<p>COMPLEX ANALYSIS</p>	<p>On completion of this course, the students will be able to</p> <p>Conceive the concept of analytic functions and will be familiar with the elementary complex functions and their properties familiar with the theory and techniques of complex integration familiar with the theory and application of the power series expansion of analytic functions</p>

Course	Outcome
LINEAR ALGEBRA	<p>After studying this course the students should be able to</p> <p>A review of algebra of matrices is followed by some applications of matrices, analytic geometry , system of liner equations</p> <p>Study about invertible matrices, linear combination of vectors, linear independence and it's basis</p> <p>Learn more about Linear mappings , matrix connections</p> <p>Conceive more about Eigen values and Eigen vectors</p>
OPERATIONS RESEARCH	<p>After studying this course the students should be able to</p> <p>Linear Programming :- Model formulation and solution by the Graphical Method and the Simplex method</p> <p>Learn about General Mathematical Model of LPP and introduction to graphical method</p> <p>Introduction to Duality Programming and it's theorems</p> <p>Introduction to Mathematical model of Transportation and assignment problems</p> <p>Theory of games:- Introduction to Two-person zero sum games ,games with and without saddle points</p>