

COURSE OUTCOMES OF COURSES OFFERED BY THE DEPARTMENT OF MATHEMATICS

Course Name	Course Outcome
Differential Equations	Differential Eqns. have a remarkable ability to predict the world around us. They are used in a wide variety of disciplines like biology, economics, physics, chemistry and engineering. They can describe exponential growth and decay, the population growth of species or the change in investment return over time.
Differential Calculus	This course is designed to evaluate the Volumes of solids using cross-section, calculate the length of an arc of a curve when equations are given in parametric form.
Real Analysis	This course is designed to recognize the basic properties of the field of real numbers, ability to apply the theorem in a correct mathematical way.
Algebra	This course is designed to explain the fundamental concepts of advanced algebra and their role in modern mathematics and applied context. Apply problem-solving using advanced algebraic techniques applied to diverse situations in physics, engineering and other mathematical problems.
Integral Calculus	This course is designed so that students will be able to define integrals, state the Mean Value Theorem of Calculus, define the natural logarithmic, natural exponential, General exponential, their derivatives and integrals.
Vector Calculus	Students will learn to graph, differentiate, integrate and solve problems involving parametric equations and Vector-Valued functions.
Matrices	After studying this course, students should be able to solve a system of linear equations by row-reducing its augmented form, perform the matrix operations of addition, multiplication and transposition and express a system of simultaneous linear equations in matrix form.
Linear Algebra	This course will enable the students to: <ul style="list-style-type: none"> • Understand the concepts of vector spaces, subspaces, bases, dimension and their properties. • Relate matrices and linear transformations, compute eigenvalues and eigenvectors of linear transformations. • Learn properties of inner product spaces and determine orthogonality in inner product spaces.
Numerical Methods	This course will enable the students to: <ul style="list-style-type: none"> • Obtain numerical solutions of algebraic and transcendental equations. • Find numerical solutions of systems of linear equations and check the accuracy of the solutions. • Learn about various interpolating and extrapolating methods.

Course Name	Course Outcome
	<ul style="list-style-type: none"> • Solve initial and boundary value problems in differential equations using numerical methods. • Apply various numerical methods in real-life problems.
Probability and Statistics	This course is designed to define the principal concepts about probability. Solve the problems about permutation, Combination and Binomial Theorem, express the concept of probability and its features, and express the variance as a random variable.
Transportation Problems and Game Theory	Students will get a wide knowledge of game theory and a plethora of its applications in engineering and social sciences. The game theory became a popular tool for analyzing intelligent entities in many situations of competition or cooperation.