

## BACHELOR OF SCIENCE IN MATHEMATICS

### Programme Specific Outcome

**PSO 1** - By the end of the second semester, the students should have attained a foundation in basic Mathematics and other relevant subjects to complement the core for their future courses.

**PSO 2** - By the end of the fourth semester, the students should have been introduced to powerful tools for tackling a wide range of topics in Calculus, Theory of Equations and Geometry. They should have been familiar with additional relevant mathematical techniques and other relevant subjects to complement the core.

**PSO 3** - By the end of sixth semester, the students should have covered a range of topics in almost all areas of Mathematics, and had experience of independent works such as project, seminar etc.

**PSO 4** - A brief introduction of theory of Equations is also included. These topics are foundations of most areas of modern mathematics and are applied frequently in the succeeding semesters.

### Course Outcome

<b>SEMESTER &amp; COURSE CODE</b>	
<b>SEMESTER1</b> <b>MM1CRT01</b> <b>Foundation of Mathematics</b>	CO-1: construct mathematical arguments on this topic  CO-2: understand and how to construct correct mathematical arguments.
<b>SEMESTER 2</b> <b>MM2CRT02</b> <b>Analytic Geometry, Trigonometry and Differential Calculus</b>	CO-1 establish a correspondence between geometric curves and algebraic equations .  CO-2 Recognize the equation, vertex, focus, directrix and sketch the graph of corresponding equation.
<b>SEMESTER 3</b> <b>MM3CRT03</b> <b>Calculus</b>	CO-1 Expand a function using Taylor's and Maclaurin's series  CO-2 Determine the length of an arc.  CO-3 Learn about concavity, points of inflexion, curvature, evolutes and involutes.

	Conceive the concept of asymptotes and obtain their equations and learn about envelopes
<b>SEMESTER 4</b> <b>MM4CRT04</b> <b>Vector Calculus, Theory of Numbers &amp; Laplace Transform</b>	CO-1 Define vector equation for lines and planes. CO-2 Define and interpret the concepts of divisibility, congruence, greatest common divisor and prime.
<b>SEMESTER 5</b>	
<b>MM5CRT05</b> <b>Mathematical analysis</b>	CO-1 Understand the basic topological properties of subsets of the real numbers. CO-2 Analyse the real line as a complete, ordered field
<b>MM5CRT06</b> <b>Differential Equations</b>	CO-1 Understands different types of differential equations
<b>MM5CRT07</b> <b>Abstract Algebra</b>	CO-1 Analyze properties implied by the definitions of groups and rings. Analyze and demonstrate examples of ideals and quotient rings. CO-2 Solve problems from the Algebra related to Group Theory and basic Ring Theory.
<b>MM5CRT08</b> <b>Environmental Mathematics and Human Rights</b>	CO-1: define the scope and importance of Multidisciplinary nature of environmental studies, the natural resources and ecosystem.
<b>MM5OPT02</b> <b>Applicable Mathematics</b>	CO-1: understand types of numbers and to improve arithmetic skill, Understands basic mathematics. With emphasis on algebra, Familiar with short cut methods to solve problems.
<b>MM6CRT09</b> <b>Real Analysis</b>	CO-1: understand the concept of continuity and uniform continuity of functions. To analyze the various properties of continuous functions
<b>MM6CRT10</b>	CO-1: Understand various aspects related to graphs

<b>Graph Theory and Metric Spaces</b>	CO-2:Recognize properties of graphs  CO-3: Analyze Model and solve real-world problems using graphs and trees, both quantitatively and qualitatively
<b>MM6CRT11</b>  <b>Complex Analysis</b>	CO-1:Identify analytic functions, harmonic functions and elementary functions  CO-2:Understand the significance of differentiability for complex functions and be familiar with the Cauchy-Riemann equations
<b>MM6CRT12</b>  <b>Linear Algebra</b>	CO-1:Solve systems of linear equations  CO-2:Analyze vectors in $R^n$ geometrically and algebraically