

**Payyanur College, Payyanur
(Affiliated to Kannur University)**

Programme Outcomes (POs)

BSc DEGREE PROGRAMME (FOR SCIENCE)

PROGRAMME OUTCOMES (PO)

PO1: Critical Thinking and Problem-Solving - Apply critical thinking skills to analyse information and develop effective problem-solving strategies for tackling complex challenges.

PO2: Effective Communication and Social Interaction - Proficiently express ideas and engage in collaborative practices, fostering effective interpersonal connections.

PO3: Holistic Understanding - Demonstrate a multidisciplinary approach by integrating knowledge across various domains for a comprehensive understanding of complex issues.

PO4: Citizenship and Leadership - Exhibit a sense of responsibility, actively contribute to the community, and showcase leadership qualities to shape a just and inclusive society.

PO5: Global Perspective - Develop a broad awareness of global issues and an understanding of diverse perspectives, preparing for active participation in a globalized world.

PO6: Ethics, Integrity and Environmental Sustainability - Uphold high ethical standards in academic and professional endeavours, demonstrating integrity and ethical decision-making. Also acquire an understanding of environmental issues and sustainable practices, promoting responsibility towards ecological well-being.

PO7: Lifelong Learning and Adaptability - Cultivate a commitment to continuous self-directed learning, adapting to evolving challenges, and acquiring knowledge throughout life.

Programme Specific Outcomes (PSOs)

Name of the Programme: **BSc MATHS**

PROGRAMME SPECIFIC OUTCOMES (PSOs)

PSO1

Understand basic concepts and tools of Mathematical logic, Set theory, Number theory, Geometry, Calculus, Vector calculus, Algebra, Abstract structures, Linear Algebra, Laplace transforms, Differential equations, Numerical Analysis, Fourier series, Real Analysis, Complex Analysis, Topology and Measure theory.

PSO 2:

Develop abstract reasoning and critical thinking skills necessary for advanced mathematical study and applications in various fields.

PSO 3:

Develop proficiency in defining, formulating and solving problems by applying appropriate mathematical methods and principles.

PSO 4:

Formulate real world problems into mathematical models and find solutions.

PSO 5:

Develop proficiency in using mathematical softwares and programming languages.

PSO 6:

Understand the interdisciplinary nature of mathematics and apply mathematical concepts and techniques to solve problems in other sciences.

PSO 7:

Get equipped with basic research skills.

Course Outcomes (COs)

COURSE OUTCOMES (COs)

Sl. No	Name of the Course	Outcomes
DISCIPLINE SPECIFIC COURSES		
1.	KUIDSCMAT101: CALCULUS I	<p>CO1: Comprehend trigonometric functions, exponential functions, inverse functions, logarithmic function and hyperbolic functions</p> <p>CO2: Apply Exponential growth and decay in Finance and in Radioactive decay</p> <p>CO3: Understand the notion of limit and limit laws</p> <p>CO4: Understand continuity of a function</p> <p>CO5: Comprehend the notion of derivative of a function and differentiation rules</p> <p>CO6: Comprehend the indefinite and definite integrals.</p> <p>CO7: Apply the notion of definite integrals to find area between curves, volumes using cross-sections, arc length and areas of surfaces of revolution</p>
2.	KUIDSCMAT112: CALCULUS AND MATRIX ALGEBRA	<p>CO1: Comprehend trigonometric functions, exponential functions, inverse functions, logarithmic function and hyperbolic functions.</p> <p>CO2: Apply Exponential growth and decay in Finance and in Radioactive decay.</p> <p>CO3: Understand the notion of limit and limit laws</p> <p>CO4: Understand continuity of a function.</p> <p>CO5: Comprehend the notion of derivative of a function and differentiation rules.</p> <p>CO6: Comprehend the indefinite and definite integrals.</p> <p>CO7: Determine inverse, rank, eigenvalues and eigenvectors of a matrix.</p>
3.	KUIDSCMAT116: CALCULUS AND COORDINATE SYSTEMS:	<p>CO1: Understand and apply trigonometric, exponential, inverse, and logarithmic functions in various mathematical contexts.</p> <p>CO2: Gain proficiency in working with hyperbolic functions and their properties.</p> <p>CO3: Master the concepts of limits, limit laws, and continuity, and apply them to solve problems involving the behaviour of functions.</p> <p>CO4: Understand the concept of the derivative as a function, learn various differentiation rules, and apply them to compute derivatives of functions.</p> <p>CO5: Comprehend the concept of the definite integral, view integration as the inverse process of</p>

		<p>differentiation, and apply various integration techniques</p> <p>CO6: Demonstrate the applications of integration and grasp the fundamental theorem of calculus.</p> <p>CO7: Understand and convert between different coordinate systems, including Cartesian, polar, cylindrical, and spherical coordinates, and comprehend the relationships between these systems.</p>
MULTI-DISCIPLINARY COURSE		
4.	KU1MDCMAT102: BUSINESS MATHEMATICS	<p>CO1: Comprehend straight lines.</p> <p>CO2: Formulate mathematical models using linear functions and solve real world problems</p> <p>CO3: Comprehend different types of systems of linear equations.</p> <p>CO4: Solve systems of linear equations.</p> <p>CO5: Apply matrix theory to study the relationship between industry production and consumer demand – Leontief input-output model.</p> <p>CO6: Solve linear programming problems graphically.</p>