VijaygarhJyotish Ray College
(Program Specific Outcomes and Course Outcomes)
Programme Name: B.Sc Mathematics (Minor)

Programme Specific Outcomes:

PSO1: Inculcate critical thinking to carry out scientific investigation objectively without being biased with preconceived notions.

PSO2: Enhance the ability to understand both concrete and abstract problems.

PSO3: Develop analytical thought, logical reasoning and problem-solving skills.

PSO4: Encourage the students to make critical observations

PSO5: Empower the ability to accurately organize, analyse and interpret data.

PSO6: Develop the mathematical logic which is very useful for solving mathematical reasoning problems.

PSO7: Prepare students for pursuing research or careers in industry in mathematical sciences and allied fields.

PSO8: Continue to acquire relevant knowledge and skills appropriate to professional activities and demonstrate highest standards of ethical issues in mathematical sciences.

Course Outcomes:

Semester I		
Course Code	**Course Name**	**Course Outcomes**
MATH-H-MC 1-1-Th/ MATH-MD-CC 1-1-Th	**Calculus, Geometry & Vector Analysis**	**Group A: Calculus** CO1: Gain a clear concept of limit, continuity and differentiability of a real-valued function of one variable as well as several variables. CO2: Gain the concept of higher order differentiation. CO2: Learn to evaluate definite integrals. CO3: Gain the concept of improper integrals and their evaluations. CO4: Develop the knowledge of double integrals and its applications in Rectification, Quadrature, volume and surface areas of solids formed by revolution of plane curve and areas. **Group B: Geometry** CO1: Develop skills for Transformations of Rectangular axes. CO2: Gain the concept of conics using the discriminant, reduction to canonical form, tangent and normal, polar equations of conics. CO3: Provide sufficient knowledge about Cylindrical surfaces, Central conicoids, paraboloids, plane sections of conicoids, generating lines, identification of quadric surfaces like cone, cylinder, ellipsoid, hyperboloid, classification of quadrics. **Group C: Vector Analysis** CO1: Gain a clear concept of Scalar and Vectors and their properties. CO2: Encourage to implement the concept to solve the problems of Mechanics. CO3: Motivate the study of vector differentiation and integration in two and three dimensional spaces. CO4: Understand the students about Scalar and vector product of three and product of four vectors. Reciprocal vectors. Vector differentiation, scalar point function and vector point function. Derivative along a curve, directional derivatives. CO5: Understand the concept of orthogonal curvilinear coordinates. Gradient, Divergence, Curl and Laplacian operator in terms of orthogonal curvilinear coordinates system. CO6: Understand the concept of vector integration: line integral, surface integral, volume integral. Theorem of Gauss, Green and Stokes and its applications. CO7: It offers important tools for understanding functions (both real & complex) non-Euclidean geometry and topology. CO8: These tools are employed successfully in different branches of engineering

		and physics (such as electromagnetic fields, fluid flow and gravitational fields).
MATH-MD-SEC 1-1-Th	**C Language with Mathematical Applications**	CO1: Enhance the skills to develop Algorithms and Flow Charts– their utilities and important features. CO2: Control the sequence of the program and give logical outputs CO3: Store different data types in the same memory CO4: Manage I/O operations in your C program CO5: Implement C programming to solve numerical simulations CO6: Ability to use approximation algorithm in real world problem CO7: Analyze and evaluate the accuracy of common numerical methods.