Name of College: Shree Ramkrishna Institute of Computer Education and Applied Sciences						
Faculty	Science		**Program**	B.Sc. (Hons.) Information Technology / B.Sc. (Hons.) Computer Science		
Year	2025-26		**Version**	3.0		
Semester	6		**Effective From**	December, 2025		
Course Code	BSGN34611	**Course Name**	**Mathematics for Computer Science**			
Teaching Scheme				**Examination Scheme**		
Credits	**Lecture (L)**	**Tutorial (T)**	**Practical (P)**	**Continuous Assessments (CA)**	**Term end examinations (TEE)**	**Total**
2	2	0	0	25	25	50

Purpose of Course	To equip students with the foundational mathematical concepts necessary for understanding and analyzing key areas of computer science.
Course Objective	To provide students with essential foundational support that strengthens their background knowledge and enhances their ability to engage effectively with the course material.
Pr-requisite	Basic mathematical familiarity
Course Out come	Students will develop the mathematical foundation needed to understand, analyze, and apply core concepts used in computer science.
Course Content	**Unit 1: Algebra I** 1.1 Determinants Determinants of order 2 and 3, properties of determinants; evaluation of determinants. Area of triangles using determinants, Cramer's rule. 1.2 Matrices-1 Definition, equality, addition and multiplication of matrices. Adjoint and inverse of a matrix. Solution of a system of linear equations – homogeneous and non-homogeneous. 1.3 Matrices-2 Elementary row operations; rank of a matrix, reduction to normal form,Inverse of a matrix using elementary row operations. **Unit 2: Algebra II** 2.1 Sequence and Series Definition of sequence and series; A.P, G.P, H.P and A.G.P.? n? n2 and? n3 ,Idea of limit of a sequence. 2.2 Complex Number Complex number in the form of a+ib. Addition, multiplication, division of complex numbers. Conjugate and modulus of complex numbers. De Moivre's Theorem. **Unit 3: Calculus** 3.1 Differential Calculus Concept of limit and continuity; differentiation of the sum, difference, product and quotient of two functions, chain rule. Differentiation of parametric functions. 2nd order derivatives. 3.2 Simple Application of Differential Calculus Rate of change; monotonicity-increasing and decreasing; maxima and minima. **Unit 4: Vectors and Three-Dimensional Geometry** 4.1 Vector-1 Vectors and scalars, magnitude and direction of a vector. Direction cosines/ratio of vectors. Addition of two vectors. Multiplication of a vector by a scalar. Position vector of a point and section formula. 4.2 Vector-2 Scalar (Dot) product of vectors, Vector (Cross) product of vectors. Scalar triple product and vector triple product. 4.3 Linear Programming Introduction, definition and related terminology such as constrains, objective function, optimization. Mathematical Formulation of LPP. Graphical method of solving LPP in two variables. Feasible and inferring solution (up to three non-trivial constraints).