St.Pious X Degree & PG College for Women

Autonomous College, Affiliated to OU
Re-Accredited with A+ Grade by NAAC
Snehapuri Colony, Nacharam, Hyderabad

B.Sc COURSE OUTCOMES

SEMESTER I

Remember, Understand, Apply, Analyze, Evaluate, Create :R, U, Ap, Az, E, C

Title of the Course: Differential and Integral Calculus			
Sem- I	**Credits: 6**	**Course Code – MAT101T**	**Year/Group: I B.Sc (MPCS,MSCS,MSDS) HPW: 6**

	Course Outcomes	Blooms Level
CO1	Define and Discuss the key concepts of Partial derivatives, Homogeneous functions	R,U
CO2	Demonstrate and Examine the Taylor's theorem for a function of two variables	Ap,Az
CO3	Interpret and Test the Radius of Curvature, centre of curvature, chord of curvature, Evolutes and Envelops	Ap,Az
CO4	Construct and Execute the Lengths of Plane Curves, Volumes and Surfaces of Revolution	Ap,C

SEMESTER II

Title of the Course:Differential Equations			
Sem-II	**Credits: 6**	**Course Code:MAT201T**	**Year/Group: I B.Sc (MPCS,MSCS,MSDS) HPW: 6**

	Course Outcomes	Blooms Level
CO1	Discuss the key concepts of Differential Equations of first order and first degree	U
CO2	Explain and solve the first order differential Equations	U,Ap
CO3	Implement and Examine the Higher order Linear Differential Equations	Ap,Az
CO4	Classify and solve the Partial Differential Equations	U,Ap

SEMESTER III

Title of the Course:Real Analysis			
Sem-III	**Credits: 6**	**Course Code:MAT301T**	**Year/Group: II B.Sc (MPCS,MSCS,MSDS) HPW: 6**

	Course Outcomes	Blooms Level
CO1	Discuss, solve and examine the key concepts of Sequences, Series and their Convergence	U,Ap,Az
CO2	Define, discuss and test the convergence theory in Continuity	R,U,Az
CO3	Define, discuss and test the convergence theory in Differentiation	R,U,Az

CO4	Define, discuss and test the convergence theory in Integration	R,U,Az

SEMESTER IV

Title of the Course:Algebra				
Sem-IV	**Credits: 6**	**Course Code:MAT401T**	**Year/Group: II B.Sc (MPCS,MSCS,MSDS) HPW: 6**	
Course Outcomes				Blooms Level
CO1	Explain, Solve and examine the fundamental concepts of Groups, Subgroups and their properties			U,Ap,Az
CO2	Demonstrate and construct the nature of Cyclic and Permutation Groups			Ap,C
CO3	Discuss and Interpret Normal Subgroups, Homomorphism, their properties and applications			U,Ap
CO4	Explain, Solve and examine the fundamental concepts of Rings, Subrings and their properties			U,Ap,Az

SEMESTER V

Title of the Course: Linear Algebra				
Sem-V	**Credits: 6**	**Course Code:MAT501T**	**Year/Group: III B.Sc (MPCS,MSCS,MSDS) HPW: 6**	
Course Outcomes				Blooms Level
CO1	Understanding Vector Spaces, Subspaces. Identify and construct bases for vector spaces, and calculate the dimension of a vector space based on the number of vectors in a basis.			U,Ap
CO2	Compute eigenvalues and eigenvectors of a matrix using methods such as the characteristic equation and matrix factorization.			R,U,Ap
CO3	Analyze the properties of eigenvalues and eigenvectors, such as their multiplicity (algebraic and geometric) and their role in determining matrix diagonalizability.			U,Az
CO4	Apply the inner product to calculate angles, lengths (norms), and projections of vectors in inner product spaces and explain the concepts of orthogonal sets, orthonormal sets, and the Gram-Schmidt process for generating orthonormal bases.			U,Ap,E

SEMESTER VI

Title of the Course:Numerical Analysis			
Sem:VI	**Credits: 6**	**Course Code:MAT601T**	**Year/Group: III B.Sc (MPCS,MSCS,MSDS) HPW: 6**

Course Outcomes		Blooms Level
CO1	Explain and Solve the systems of simultaneous linear equations using both direct methods like Bisection method & iterative methods.	U,Ap,Az,E
CO2	Understand and apply different interpolation methods (e.g., Lagrange interpolation, Newton's interpolation)	U,Ap,E
CO3	Apply numerical integration techniques (e.g., Trapezoidal rule, Simpson's rule) to approximate definite integrals	Ap,Az,E
CO4	Apply appropriate numerical methods to solve various differential equations.	Ap,Az,E

B.C.A COURSE OUTCOMES

SEMESTER I

Title of the Course:Mathematical Foundations of Computer Science			
Sem-I	**Credits: 4**	**Course Code:BSC101**	**Year/Group: I B.C.A HPW: 4**

Course Outcomes		Blooms Level
CO1	Describe and use the key concepts of Fundamentals of Logics, Set theory and Properties of the Integers	U,Ap
CO2	Identify and Compare the Relations and Functions	U,Az
CO3	Describe and relate the fundamental concepts of Groups and their properties	U,Az
CO4	Describe and relate Recurrence relations and Generating Functions.	U,Az
CO5	Discuss, Compare and construct the Graph Theory and Trees.	U,Az,C

SEMESTER III

Title of the Course: Applied Mathematics				
Sem-III	**Credits: 4**	**Course Code:BSC301**	**Year/Group: II B.C.A**	**HPW: 4**

	Course Outcomes	Blooms Level
CO1	Define, Solve and formulate Partial Differentiation in functions of two variables and Homogenous Functions	R,Ap,C
CO2	Explain and differentiate Differentiation of Composite Functions, Maxima and Minima of functions and Lagrange's Method of Undetermined Multipliers	U,Az
CO3	Explain and Evaluate the concepts of System of Linear Equations, their solutions and Linear Independence	U,E
CO4	Explain and Evaluate the concepts of Vector Spaces, Subspaces, Eigen Vectors and Eigen Values	U,E
CO5	Explain and Evaluate the concept of Diagonalization and Applications to Differential Equations	U,E