



SACRED HEART COLLEGE (AUTONOMOUS)

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Ready for
Every Good Work

A Don Bosco Institution of Higher Education, Founded in 1951 * Affiliated to Thiruvalluvar University, Vellore * Autonomous since 1987

Accredited by NAAC (4th Cycle – under RAF) with CGPA of 3.31 / 4 at 'A+' Grade

Name of the Course	Course Code	Name of the Program	Activities with direct bearing on Employability/ Entrepreneurship/ Skill development	Year of introduction
A2. Skill Enhancement Course I – Algebra	M749B	M Sc Maths	Skill Development: Contents: Finite Group, Permutation groups and Isomorphism, Rings and Ideals. Activities: To develop broad, balanced knowledge and understanding of definitions, concepts, theorems and principles. To empower students to crack competitive examinations such as NET, SET and TRB.	2021-22
Advanced Graph Theory	M850	M Sc Maths	Skill Development: Contents: Graphs, Trees, Euler Graphs, Matching and Vertex Colouring.	2021-22

			<p>Activities: To understand the concept of graphs, trees, Euler graphs, Hamilton cycle, matching and colouring of graphs. To Prepare a model using four colour problem and five colour theorem.</p>	
Classical Dynamics	M851	M Sc Maths	<p>Skill Development: Contents: Mechanical Systems, Lagrange's Equations and Hamilton Jacobi Theory. Activities: To solve problems in mechanical systems under generalized coordinate, virtual work, energy and momentum. To explore the theory of mechanics by Lagrange, Hamilton and Jacobi's principle.</p>	2021-22
B1. Mathematical Models in Biology	M852A	M Sc Maths	<p>Skill Development: Contents: Microbial Population Models, Two-Species Population Models and Mathematical Models in Pharmacokinetics.</p>	2021-22

			Activities: To explore the potential of Mathematical Modelling and emphasizing its role in Biology and Medicine.	
B2. Skill Enhancement Course II – Linear Algebra	M852B	M Sc Maths	Skill Development: Contents: Linear Transformations and Matrices, Diagonalization and Linear Operator on Inner Product Spaces. Activities: To develop broad, balanced knowledge and understanding of definitions, concepts, theorems and principles. To empower students to crack competitive examinations such as NET, SET and TRB.	2021-22
B3. Numerical Analysis	M852C	M Sc Maths	Skill Development: Contents: Transcendental and Polynomial Equations, Eigenvalue Problems, Interpolation, Differentiation and Integration. Activities : To know the basic	2021-22

			principles of numerical methods and improve the problem solving skills in the algebraic equations and ordinary differential equations numerically.	
Optimization Techniques	M955	M Sc Maths	Skill Development: Contents: Advanced Topics in Linear Programming, Queueing Models, Inventory Models and Dynamic Programming. Activities: To improve the knowledge on problem solving in linear programming models, queueing models, inventory models and dynamic programming.	2021-22
Fluid Dynamics	M956	M Sc Maths	Skill Development: Contents: Kinematics of Fluids in Motion, Equations of Motion of a Fluid and Viscous Flows. Activities: To develop basic knowledge in kinematics of fluids in motion,	2021-22

			equations of motion of a fluid and viscous flows.	
C1. Nonlinear Dynamical Systems	M957A	M Sc Maths	<p>Skill Development: Contents: Plane Autonomous Systems, Periodic Solutions, Perturbation Methods and Stability. Activities: To apply phase plane analysis and stability techniques to problems in Science and technology.</p>	2021-22
C2. Skill Enhancement Course III – Real Analysis	M957B	M Sc Maths	<p>Skill Development: Contents: Real number system, Functions of a Single Variable, Riemann and Improper Integrals, Metric Spaces. Activities: Empowering students to crack competitive examinations such as NET, SET and TRB.</p>	2021-22

D2. Skill Enhancement Course IV – Complex Analysis	M1052B	M Sc Maths	Skill Development: Contents: Analytic Functions, Conformal Mappings, Mobius Transformations and Calculus of Residues. Activities: Empowering students to crack competitive examinations such as NET, SET and TRB.	2021-22
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