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Every Good Work

# SACRED HEART COLLEGE (AUTONOMOUS)

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

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

## Name of the Programme: MSc. Mathematics

S No	Title of the Paper	Course Code	Course Objectives	Course Outcomes	Relevance
1	MATHEMATICAL STATISTICS	M748	<ul style="list-style-type: none"><li>To study and apply sampling theory, significance tests, estimation, testing of hypothesis and design of experiments</li></ul>	<ul style="list-style-type: none"><li>understand Sampling and Sampling distributions.</li><li>illustrate the methods of finding Estimators</li><li>determine Parametric point and Interval Estimation.</li><li>perform hypothesis testing , justify hypothesis testing to Sampling problems and to determine confidence Intervals.</li><li>define the basic terms used in design of experiments and use appropriate experimental designs to analyze the experimental data.</li></ul>	Regional/ National

2	SKILL ENHANCEMENT COURSE I – ALGEBRA	M749B	<ul style="list-style-type: none"> <li>• To develop broad and balanced knowledge and understanding of definitions, concepts, theorems and principles.</li> <li>• To enhance the ability of learners to apply the knowledge and skills acquired by them during the programme to solve specific theoretical and applied problem in Mathematics.</li> <li>• To empower students to crack competitive examinations such as NET, SET and TRB and to complement the theoretical content of the subject with exercise problems.</li> </ul>	<ul style="list-style-type: none"> <li>• disseminate new and innovative knowledge that will make them fit for any competitions in job opportunities.</li> <li>• apply new tangents or to exercise their knowledge and skill in other disciplines.</li> <li>• develop, prioritize, demonstrate display, and disseminate newer versions and to interpret in novel ways.</li> <li>• bringout the flair for new and continuous learning process.</li> <li>• build the dexterity.</li> </ul>	Regional/ National
3	SKILL ENHANCEMENT COURSE II – LINEAR ALGEBRA	M852B	<ul style="list-style-type: none"> <li>• To develop broad and balanced knowledge and understanding of definitions, concepts, theorems and principles.</li> <li>• To enhance the ability of learners to apply the knowledge and skills acquired by them during the programme to solve specific theoretical and applied problem in Mathematics.</li> <li>• Toempower students to crack competitive examinations such as NET, SET and TRB and to complement the theoretical content of the subject with exercise problems</li> </ul>	<ul style="list-style-type: none"> <li>• disseminate new and innovative knowledge that will make them fit for any competitions in job opportunities.</li> <li>• analyze new tangents or to exercise their knowledge and skill in their own disciplines.</li> <li>• develop, give examples, demonstrate display, and disseminate newer versions and to interpret in novel ways.</li> <li>• bringout the flair for new and continuous learning process.</li> <li>• build the dexterity.</li> </ul>	Regional/ National

4	SKILL ENHANCEMENT COURSE III – REAL ANALYSIS	M957B	<ul style="list-style-type: none"> <li>Empowering students to crack competitive examinations such as NET, SET and TRB. To complement the theoretical content of the subject with exercise problems.</li> </ul>	<ul style="list-style-type: none"> <li>apply the theoretical knowledge in solving problems.</li> <li>attempt competitive examinations such as NET, SET and TRB.</li> <li>Extend their knowledge of Lebesgue theory of integration by selecting and applying its tools for further research in this and other related areas</li> <li>Recognize the need of concept of measure from a practical view point.</li> <li>Understand the nature of abstract mathematics and explore the concepts in further details</li> </ul>	Regional/ National
5	CERTIFICATE COURSE – MATHEMATICS FOR COMPETITIVE	M952X	<ul style="list-style-type: none"> <li>To prepare the students for competitive examinations</li> </ul>	<ul style="list-style-type: none"> <li>make critique of quantitative information using proportional reasoning</li> <li>Interpret and compare weighted averages, indices, ranking.</li> <li>identify uses and misuses of percentages related to a proper understanding of the bases.</li> </ul>	Regional/ Nation
6	STOCHASTIC PROCESSES	M1052A	<ul style="list-style-type: none"> <li>To introduce to the students the basic ideas of Stochastic processes, Markov chains, Markov process and Renewal process and to motivate research in these areas</li> </ul>	<ul style="list-style-type: none"> <li>demonstrate the basic concepts of Stochastic process, Markov chains.</li> <li>identify the type of the distribution</li> <li>apply the concepts in practical problems</li> <li>compose and evaluate simple Markovian Queueing models.</li> <li>analyze and evaluate renewal equations</li> </ul>	Regional/ National

7	STATISTICAL AND NUMERICAL METHODS (FOR MCA)		<ul style="list-style-type: none"> <li>• This course aims at providing the necessary basic concepts of a few statistical and numerical methods and give procedures for solving numerically different kinds of problems occurring in engineering and technology</li> </ul>	<ul style="list-style-type: none"> <li>• analyze various methods for testing of hypothesis.</li> <li>• understand numerical methods for finding the solution of some problems upto a desired degree of accuracy.</li> <li>• identify the numerical problems to be more competitive in computation.</li> <li>• employ numerical methods for approximation.</li> <li>• evaluate and formulate solutions of equations and eigen value problems.</li> </ul>	Regional/ National
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