



MANNAR THIRUMALAI NAICKER COLLEGE

A Co-educational, Autonomous and Linguistic Minority Institution

Affiliated to Madurai Kamaraj University

Re-accredited with "A" Grade by NAAC

Pasumalai, Madurai – 625 004 Tamil Nadu.

Curriculum relevance to the Local, Regional, National and Global Needs

NAME OF THE PROGRAMME: B.SC MATHEMATICS PROGRAMME CODE: UMT

PROGRAMME OUTCOMES

PO1. Demonstrate about the knowledge and understanding of Science concepts and its relevant fields.

PO2. Identify, formulate, analyse complex problems and reach valid conclusions using the methodologies of Science.

PO3. Employ critical and analytical thinking in understanding the concepts and apply them in various problems appearing in different branches of Science.

PO4. Communicate the known concepts effectively within the profession and with any forum

PO5. Function successfully as a member/leader in any team and to apply ethics, accountability and equity in their life.

PO6. Use ICT tools in various learning situations, related information sources, suitable software to analyze data and furthermore participating in learning activities throughout life to meet the demands of work place through knowledge /up-skilling / re-skilling.



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PROGRAMME SPECIFIC OUTCOMES

PSO1. Demonstrate a knowledge and understanding of the concepts of Mathematics and other relevant fields.

PSO2. Apply the acquired knowledge to solve different kinds of problems in real life situations.

PSO3. Employ critical and analytical thinking in knowledge development and face various competitive examinations.

PSO4. Listen, read carefully and express Mathematical concepts/views effectively by using appropriate media in writing and orally within the profession / any forum.

PSO5. Work efficiently as a member/leader in any team and use ethical practices in all work.

PSO6. Use ICT tools in various learning situations and appropriate mathematical software to analyze data; take part in learning activities over course of life time to meet the demands of work place through knowledge /up-skilling / re-skilling.



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Sl.No	Course Code	Course Name	Course Outcomes
1	21UMTC11	Differential Calculus	<p>CO1: Make use of Leibnitz formula to find the nth derivative of algebraic and trigonometric functions and formation of equations involving derivatives</p> <p>CO2: Apply partial differentiation to determine the maxima and minima of functions of two variables and Lagrange's method of undetermined multipliers.</p> <p>CO3: Understand the equations of the tangent, normal, Sub tangent and Sub Normal.</p> <p>CO4: Determine envelope, curvatures, involute and evolute of the curve.</p> <p>CO5: Analyze the Applications of Differential Calculus.</p>
2	21UMTC12	Theory of Equations and Its Application	<p>CO1: Relate the roots of the equation with its coefficients</p> <p>CO2: Determine the powers of the roots by Newton's theorem and roots of reciprocal equations</p> <p>CO3: Analyse the nature and position of the roots using Descarte's rule of sign.</p> <p>CO4: Solve equations using various method.</p> <p>CO5: Predict approximate solutions to Numerical equations using Newton's and Horner's method.</p>



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3	21UMTS11	Quantitative Aptitude	<p>CO1: Solve problems on ages.</p> <p>CO2: Find profit / loss</p> <p>CO3: Develop problem solving skills using ratio and proportion</p> <p>CO4: Relate various concepts in solving time and work</p> <p>CO5: Choose the suitable method to solve permutation and combination</p>
4	21UMTA11	Allied Mathematics - I	<p>CO1: Find the real and imaginary roots of given equation</p> <p>CO2: Determine the sum of the powers of the roots of equations using Newton's theorem and roots of reciprocal equations</p> <p>CO3: Solve Numerical equations to obtain the approximate solutions using Newton's and Horner's method.</p> <p>CO4: Determine the Radius, Center and Circle of curvature</p> <p>CO5: Evaluate the Definite Integral</p>
5	21UMTC21	Integral Calculus	<p>CO1: Demonstrate the understanding of basic concepts of integration.</p> <p>CO2: Examine various techniques of integration</p> <p>CO3: Apply the various concepts in solving definite and improper integrals.</p> <p>CO4: Solve problems using transformation of one coordinate system to another</p> <p>CO5: Analyze the</p>



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			properties of Beta and Gamma functionss
6	21UMTC22	Analytical Geometry of Three Dimensions	<p>CO1: Compute the angle between two planes, equation of the plane and its normal forms</p> <p>CO2: Solve the problems in straight lines</p> <p>CO3: Illustrate the angle between the planes and lines</p> <p>CO4: Calculate the distance between points, lines and planes.</p> <p>CO5: Identify sphere in general form, intersection of two spheres and its related problems</p>
7	21UMTA21	Allied Mathematics - II	<p>CO1: Formulate Linear Programming Problem using graphical, writing standard form of LPP</p> <p>CO2: Classify different techniques on solving LPP for TP</p> <p>CO3: Understand Assignment problems and travelling salesman problem.</p> <p>CO4: Capable of solving the differential equation</p> <p>CO5: Develop logical skills in solving the differential equations with different RHS</p>



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8	21UMTSP1	MS Office - Lab	<p>CO1: Demonstrate the understanding of various packages of MS Office.</p> <p>CO2: Prepare documents using Ms-Word</p> <p>CO3: Use mail merge tool to merge the database</p> <p>CO4: Create professional presentation using Micorsoft Power Point</p> <p>CO5: Manipulate the data using MS-excel</p>
9	21UBAC31	Business Law	<p>CO1: the basic concepts, essential elements of a contract and to point out the legal terminologies of Indian contract act.</p> <p>CO2: Categorize the rights and duties of Capacity to Contract.</p> <p>CO3: Distinguish between indemnity and guarantee and to indicate the key features of indemnity and guarantee.</p> <p>CO4: Discover the duties and responsibilities and techniques of sale of goods act.</p> <p>CO5: Understand the need for implementing the sale of goods act and thereby to defend Partner relationship act.</p>
10	21UBAC32	Marketing Management	<p>CO1: Identify the importance of marketing and to understand the role of marketing in economic development</p> <p>CO2: Recognize how product mix have impact on buying behavior</p> <p>CO3: To apply marketing research for the</p>



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			<p>development of marketing function.</p> <p>CO4: Analyze and perform the functions of channels in organization</p> <p>CO5: Demonstrate the critical thinking skills and analyze e-marketing in the Indian context.</p>
11	21UBAC33	Entrepreneurship	<p>CO1: To discuss the attitudes, values, characteristics, behavior and processes associated with possessing an entrepreneurial minds.</p> <p>CO2: To outline the types of entrepreneurs and innovation from a theoretical perspective.</p> <p>CO3: To describe the ways in which entrepreneurs perceive opportunity, manage risk, organize resources and add value.</p> <p>CO4: To select the institution that is opt for a kind of business.</p> <p>CO5: To develop a plan for implementing entrepreneurial activities in a globalised and competitive environment being responsible for the social, ethical and cultural issues.</p>
12	21UBAC34	Organisational Behaviour	<p>CO 1: Explain the nature, determinants, models of Organizational Behaviour and to narrate the concepts of Values, Attitudes and their sources, types and to elaborate the various theories of Learning.</p> <p>CO 2: Describe the process</p>



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			<p>and factors affecting perception and to relate it with Johari window and to detail the role of Emotional Intelligence in organizations.</p> <p>CO 3: Apply the various theories of Motivation and relate it with financial and Non-financial motivation and to interpret the concept of Morale, and its measurement.</p> <p>CO 4: Explain the nature, types, features of Groups and to compare the group behavior, norms and cohesiveness and to outline the levels of conflict handling strategies.</p> <p>CO5: Appraise the Leadership concept and to highlight the styles of Leadership and to explain the important theories of Leadership.</p>
13	21UBAA31	Business Statistics	<p>CO1: Relate the concept of statistics and its applicability through data with diagrammatic and graphical presentation.</p> <p>CO2: Use and apply various types of averages.</p> <p>CO3: Understand the applications of measures of variations.</p> <p>CO4 : Analyze the usage of correlation.</p> <p>CO5: Illustrate regression.</p>
14	21UBAS31	Personality Development Skill	<p>CO1: Classify the types of personality and Factors Affecting Personality Development.</p> <p>CO2: Explain the concept</p>



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			<p>of the personality types and their attributes.</p> <p>CO3: Prepare Short Term, Long Term, LifeTime Goals</p> <p>CO4: Make use of the benefits of effective interpersonal skills.</p> <p>CO5: Analyze the Causes for Wastage of Time and Classify the Methods for Managing Time Efficiently.</p>
15	21UBAN31	Business Management	<p>CO1: To explain the principal concepts, theories, and practices in and describe the interrelationships between the functional areas of business, including accounting, marketing, finance and management.</p> <p>CO2: Evaluate legal and ethical principles in business and apply them to organizational decision making.</p> <p>CO3: Construct coherent oral and written forms of communication and present them in a professional context.</p> <p>CO4: Enables the students to recognize the characteristics of proper management by identifying what successful managers do and how they do it.</p> <p>CO5: They acquire knowledge on handling and controlling human man power.</p>
16	21UBAC41	Basics of Intellectual Property Rights	<p>CO1: Identify different types of Intellectual Properties (IPs), the right of</p>



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			<p>ownership, scope of protection as well as the ways to create and to extract value from IP.</p> <p>CO2: Recognize the crucial role of patents, patent regime in India and abroad and registration aspects</p> <p>CO3: understand the legal and practical steps needed to ensure that intellectual property rights remain valid and enforceable.</p> <p>CO4: Recognize the crucial role of IP in organizations of different industrial sectors for the purposes of product and technology development.</p> <p>CO5: Identify activities and constitute IP infringements and the remedies available to the IP owner and describe the precautionary steps to be taken to prevent infringement of proprietary rights in products and technology development.</p>
17	21UBAC42	Human Resource Management	<p>CO1: Explain the concept, importance and scope of HRM and to discuss the role, qualities and functions of a HR manager and to identify the HR policies and emerging trends in HR.</p> <p>CO2: Describe the HR planning concept and process and to distinguish between Job analysis, Job description, Job specification and Job design.</p> <p>CO3: Interpret Recruitment process, Selection process,</p>



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			<p>Job tests and Interview.</p> <p>CO4: Explain Employee training, concept, need importance and types and to infer Performance evaluation concept, importance, methods and to classify the types of Job changes.</p> <p>CO5: Appraise the wage and salary concept and to correlate the need for Grievance handling, Collective bargaining and worker's participation in organizations.</p>
18	21UBAC43	Data Analysis using Excel	<p>CO1: To Gain Basic Knowledge of Excel.</p> <p>CO2: Construct Data charts and Graphs.</p> <p>CO3: Able to generate aggregate reports using formula based techniques.</p> <p>CO4: Familiarize the basic tools of spreadsheets.</p> <p>CO5: Able to create the automate the task by using Macro.</p>
19	21UBAC44	Research Methodology	<p>CO1: Able to summarize the basic concepts of research methodology.</p> <p>CO2: Locate the types of sampling method and scaling techniques to adopt for their research.</p> <p>CO3: Categorize the types of data and use it for analysis</p> <p>CO4: Apply the data for analysis purpose</p> <p>CO5: Construct a research report.</p>
20	21UBAA41	Operations Research	<p>CO1: Demonstrating and understanding the concepts</p>



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			<p>of Operations Research.</p> <p>CO2: Analyze Linear Programming technique in Manufacturing and Marketing in Business</p> <p>CO3: Able to Apply transportation model to minimize the cost of transportation and increase profit of sales.</p> <p>CO4: Understand the usage of Assignment techniques for Decision Making.</p> <p>CO5: Examine the usage of game theory and Simulation for Solving Business Problems.</p>
21	21UBAS41	Body Language Skills	<p>CO1: Describe the difference between verbal and non-verbal communication and to identify the main aspects of body language.</p> <p>CO2: Explain the characteristics of body language and to identify the approaches to the interpretation of Body Language.</p> <p>CO3: Interpret the various gestures of body language.</p> <p>CO4: Experiment various body types in body language and to show the attitudes by body language.</p> <p>CO5: Analyze the business negotiation skills and to categorize various body language skills during business meetings and customer handling.</p>
22	21UBAN41	Entrepreneurial Development	<p>CO1: Locate the ability to determine distinct entrepreneurial traits.</p>



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			<p>CO2: Find different opportunities and successful growth stories.</p> <p>CO3: Make use of the steps to start an enterprise and design business plans.</p> <p>CO4: Plan and Write a project report.</p> <p>CO5: Categorize the schemes of government and non-government institutions which are suitable for funding by considering all dimensions of business.</p>
23	21UBEC41	<p>Internship Report(Extra Credit)</p>	<p>CO1: Explain the student to the environment and expectations of performance on the part of private/public companies or government entities.</p> <p>CO2: Able to develop work habits and attitudes necessary for job success. Build a record of work experience.</p> <p>CO3: Explore career alternatives by Integrating theory and practice and Learn to appreciate work and its function in the economy.</p> <p>CO4: Expose the student to professional role models by developing communication, interpersonal and other critical skills.</p> <p>CO5: Examine employer-valued skills such as teamwork, communications and attention to detail.</p>