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: M.Sc., (COMPUTER SCIENCE)
PROGRAMME CODE: PCS

PROGRAMME OUTCOMES

PO1: Demonstrate 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: To understand, analyze and develop software in the areas related to system software, multimedia, web design, big data analytics, networking, and algorithms for efficient design of computer-based systems of varying complexities

PSO2: To apply standard practices and strategies in software project development using open ended programming environments to deliver a quality pro.

PSO3: To employ modern computer languages, environments, and platforms in creating

PSO4: Innovative career paths to be an entrepreneur, with zest for research.

PSO5: To study, experiment, interpret, analyze and explore the solutions to the real time problems which are effective, efficient, optimized and feasible

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Sl. No	Course Code	Course Name	Course Outcomes
1.	21PCSC11	**Advanced Web Technology**	**CO1:** Understand the basic concepts of internet, internet standards and protocols. **CO2:** Develop a dynamic webpage by the use of java script and DHTML. **CO3:** Analyze, identify and define the technology required to build and implement a website **CO4:** Implement a web page using development tools to design a webpage **CO5:** Design a dynam webpage
2.	21PCSC12	**Design And Analysis of Algorithm**	**CO1:** Analyze the running time and space complexity of algorithms. **CO2:** Describe, apply and analyze the complexity of divide and conquer strategy. **CO3:** Describe, apply and analyze the complexity of dynamic programming. **CO4:** Apply Greedy Technique for problem solving and identify the computational issues and apply suitable algorithms to solve it effectively. **CO5:** Describe the classes P, NP, and NP Complete and be able to prove that a certain problem is NP-Complete
3.	21PCSC13	**Operations Research**	**CO1:** Develop the skills in Mathematical formulation and Solving of L P. **CO2:** Solve specialized LPP like transportation and assignment problems.

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			CO3: Evaluate the challenges in building networks and solutions to those. **CO4:** Identify the activities, schedule the Project and finding time of completion Introduce about Network problems. **CO5:** Distinguish a game situation from a pure individual's decision problem
4.	21PCSCP1	**Advanced Web Technology Lab**	**CO1:** Understand best technologies for solving web client/server problems **CO2:** Analyze and design real time web applications **CO3:** To have a Good grounding of Web Application Terminologies, Internet Tools, E – Commerce and other web services. **CO4:** To develop a Web site using text, images, links, lists, and tables for navigation and layout. **CO5:** To create web applications using web controls.
5.	21PCSCP2	**Algorithms Lab**	**CO1:** Design algorithms using appropriate design **CO2:** Implement a variety of algorithms such assorting, graph related, combinatorial in a high level language **CO3:** Develop solutions for Greedy method, Dynamic Programming **CO4:** Apply and implement learned algorithm design techniques to solve real-world problems **CO5:** Analyze and compare the performance of algorithms using different features.

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6.	21PCSC21	**Advanced Java Programming**	**CO1:** Understand the functionality of the Core Java **CO2:** Apply the concept of OOP. **CO3:** Apply and implementation of Thread services. **CO4:** Examine the features of Applet and AWT Various applications **CO5:** Execute Java Beans and Servlet in development.
7.	21PCSC22	**Object Oriented Analysis and Design**	**CO1:** Describe the modeling concept for object oriented development in the system **CO2:** Apply the concept of domain and application analysis for designing UML Diagrams. **CO3:** Classify the different classes based on the classification theory and its approaches. **CO4:** Evaluate the UML models for various development stages of System using the appropriate UML notation. **CO5:** Develop and explore the conceptual model into various scenarios and applications.
8.	21PCSC23	**Distributed Operating System**	**CO1:** Understand the basic concepts of Linux operating system. **CO2:** Understand Scheduling of operating system. **CO3:** Study I/O management, Memory Management and File System and Distributed Systems **CO4:** Understand the system level and support required for Distributed System.

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			CO5: Learn Synchronization and Deadlock
9.	21PCSCP3	**Advanced Java Programming Lab**	**CO1:** Ability to understand the Java **CO2:** Understand the usage of Exception Handling **CO3:** Ability to implement the concept of servlets, client and server based applications **CO4:** Examine the use of Controls in Applet and GUI **CO5:** Develop Servlets, JSP and Net Beans Applications
10.	21PCSN21	**Introduction To Internet**	**CO1:** To compare the different packages of MS Office **CO2:** To apply the format and design tools in the document **CO3:** To simplify the data using MS –Excel **CO4:** To evaluate application in online using Google forms **CO5:** To interpret the MS-Office package and Google Tools
11.	21PCSC31	**Machine Learning**	**CO1:** Understand the basic concepts and techniques of Machine Learning. **CO2:** Apply different models on datasets and design suitable problem solutions. **CO3:** Study the various probability based learning techniques **CO4:** Apply specific supervised machine learning techniques for a particular problem **CO5:** Understand the Supervised and Unsupervised learning techniques, design of Neural Networks.
12.	21PCSC32	**Theory of Computation**	**CO1:** Use basic concepts of formal languages of finite

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			automated techniques **CO2:**Design Finite Automata's for different Regular Expressions and Languages **CO3:** Construct context free grammar for various languages. **CO4:** Solve various problems of applying normal form techniques, push down automata and Turing Machines **CO5:** Create various algorithms in due with techniques.
13.	21PCSCP4	**Machine Learning Using Python Lab**	**CO1:**Understand best technologies for solving classification problems **CO2:**Make use of Data sets in implementing the machine learning algorithms **CO3:** Apply different models on datasets and design suitable problem solutions **CO4:** Study the various probability based learning techniques **CO5:** Understand graphical models of machine learning algorithm
14.	21PCSE31	**Advanced Data Structures**	**CO1:** Describe the basics of mobile telecommunication system. **CO2:** Analyze the generations of telecommunication systems in wireless network **CO3:** Elaborate the architecture of Wireless LAN technologies. **CO4:** Identify the functionality of network layer and Identify a routing

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			protocol for a given Ad hoc networks **CO5:** Examine the functionality of Transport and Application layer
15.	21PCSE32	**Software Engineering**	**CO1:** Decompose the given project in various phases of a lifecycle. **CO**2:Choose appropriate process model depending on the user requirements **CO3:** Perform various life cycle activities like Analysis, Design, Implementation, **CO4:** Testing and Maintenance. **CO5:** Know various processes used in all the phases of the product **CO6:** Apply the knowledge, techniques, and skills in the development of a software product
16.	21PCSE33	**Soft Computing**	**CO1:** To learn about soft computing techniques and their applications **CO2:** To know about the fuzzy logic concepts **CO3:** To Understand perceptrons and counter propagation networks **CO4:** To Evaluate the genetic algorithms and their applications **CO5:** To Analyze various neural network architectures.
17.	21PCSE34	**Database Management System**	**CO1:** Explain the structure and model of the relational database system.. **CO2:** Make a study of SQL and Relational database design. **CO3:** Analyze different information about the

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			organization requiring an database and translate them to user requirements. **CO4:** Interpret knowledge in transaction processing with relational database design. **CO5:** Analyze different information about the organization requiring an database and translate them to user requirements. **CO6:** Create and populate a RDBMS for a real life application, with constraints, keys using SQL
18.	21PCSE35	**Data Mining And Warehousing**	**CO1:** Understand the functionality of the various data mining and data warehousing component **CO2:** Appreciate the strengths and limitations of various data mining and data warehousing models **CO3:** Explain the analyzing techniques of various data **CO4:** Describe different methodologies used in data mining and data ware housing **CO5:** Compared Different approaches of data warehousing and data mining with various technologies
19.	21PCSE36	**Cyber Security**	**CO1:** To describe the fundamentals of cyber security **CO2:** To classify various network attacks, describe their sources, and mechanisms of prevention. **CO3:** To determine and analyze software vulnerabilities and security solutions to reduce the risk of

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			exploitation. **CO4:** To measure the performance and troubleshoot cyber security systems **CO5:** To design the cyber security needs of an organization
20.	21PCSC41	**Big Data Analytics**	**CO1:** Understand the key issues in big data management and its associated applications in intelligent business and scientific computing. **CO2:** Acquire fundamental enabling techniques and scalable algorithms like Hadoop, Map Reduce and NO SQL in big data analytics. **CO3:** Interpret business models and scientific computing paradigms, and apply software tools for big data analytics **CO4:** Achieve adequate perspectives of big data analytics in various applications like recommender systems, social media applications etc. **CO5:** Ability to understand and apply scaling up machine learning techniques and associated computing techniques and technologies
21.	21PCSC42	**Wireless Sensor Networks**	**CO1:** Understand the basis of Sensors with its applications **CO2:** To learn the architecture and placement strategies of Sensors **CO3:** To analyze routing and congestion algorithms **CO4:** To design, develop , and carry out performance analysis of sensors on specific

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			applications **CO5:** To explore and implement solutions to real world problems using sensor devices, enumerating its principles of working
22.	21PCSCP5	**Data Mining lab**	**CO1:** Ability to understand the various kinds of tools **CO2:** Demonstrate the classification, clustering and etc. in large datasets **CO3:** Ability to add mining algorithms as a component to the exiting tools **CO4:** Ability to apply mining techniques for realistic data. **CO5:** To obtain Practical Experience Working with all real datasets
23.	21PCSPR1	**Project**	**CO1:** Design and implement a software with a good aesthetic sense of designing and latest technical know-how's. **CO2:** Project one that involves practical work for understanding and solving problems in the field of computing **CO3:** To familiar with any software and develop tools. **CO4:** To develop a software or application -To create applications using Languages

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24.	21PCSE41	**Cloud Computing**	**CO1:** Understand the functionality of the various cloud and services provided by them **CO2:** Appreciate the strengths and limitations of various cloud models with virtualization **CO3:** Explain and implementation of task Scheduling algorithms **CO4:** Describe different methodologies used in cloud and cloud services **CO5:** Build a private cloud