



Affiliated to Bharathiar University, Coimbatore. Approved by Govt. of Tamilnadu.
Recognized by UGC, New Delhi under section 2(f) and 12(B).



Programme Name: M.Sc., Computer Science

Program Code: 32K

Graduate attributes:

GA1	Domain Knowledge	Knowledge
GA2	Domain Analysis	
GA3	Design and Development of Solutions	
GA4	Communication Skills	Skills
GA5	Innovative and Entrepreneurial Skills	
GA6	Leadership and Management Skills	
GA7	Individual and Team Work	Attitude
GA8	Ethical and Social Responsibility	
GA9	Life-long Learning	

PROGRAMME EDUCATIONAL OBJECTIVES (PEO's)

The M.Sc. CS programme describe accomplishments that graduates are expected to attain within five to seven years after graduation	
PEO1	To enrich the students with the clear picture of the course objectives and to map their requirements
PEO2	To enable the students, to understand the core concepts, visualize and to apply them in the real time scenarios.
PEO3	To impart the need for consistent learning, importance of research & development for the welfare of the society and to the nation at large.

PROGRAMME SPECIFIC OUTCOME (PSO's)

After the successful completion of M.Sc. CS programme, the students are expected to	
PSO1	Able to analyze, design and develop problem solving skills in the discipline of computer science.
PSO2	Acquire evaluation of potential benefits of alternative solution in designing software and/or hardware systems in broad range of open source programming languages to withstand technological changes.
PSO3	Able to pursue careers in IT industry/ consultancy/ research and development, teaching and allied areas related to computer science.
PSO4	Adapt to the continuous technological change in computational science and update themselves to meet the industry requirements and standards.
PSO5	Apply the practices and strategies of computer science for software project development to deliver a quality software product and contribute to research in the chosen field and perform effectively

PROGRAM OUTCOME (PO's)

On successful completion of the M.Sc. CS programme	
P01	Develop creativity and problem solving skills with the knowledge of computing and mathematics.
P02	Ability to develop and carry out experiments, interpret and infer data.
P03	Design algorithms and develop software to aid solutions to industry and governments.
P04	Review the latest technology and tool handling mechanism.
P05	Analyze the outcome to solve global environment related issues.
P06	Apply the knowledge in lifelong learning journey to equip themselves.
P07	Identify the perspective of business practices, risks and limitations.
P08	Work with professional and ethical values.
P09	Formulate the responsibilities of human rights and entrepreneurial spirit.
P010	Understand the methods to communicate effectively and work collectively.

COURSE OUTCOME (CO's)

SEMESTER - I

Course Name: ANALYSIS & DESIGN OF ALGORITHMS

#	Course Outcome	
C01	Get knowledge about algorithms and determines their time complexity. Demonstrate specific search and sort algorithms using divide and conquer technique.	K1, K2
C02	Gain good understanding of Greedy method and its algorithm.	K2,K3
C03	Able to describe about graphs using dynamic programming technique.	K3, K4
C04	Demonstrate the concept of backtracking & branch and bound technique.	K5, K6
C05	Explore the traversal and searching technique and apply it for trees and graphs.	K6

Course Name: OBJECT ORIENTED ANALYSIS AND DESIGN & C++

#	Course Outcome	
C01	Understand the concept of Object-Oriented development and modeling techniques	K1, K2
C02	Gain knowledge about the various steps performed during object design	K2, K3
C03	Abstract object-based views for generic software systems	K3
C04	Link OOAD with C++ language	K4, K5
C05	Apply the basic concept of OOPs and familiarize to write C++ program	K5, K6

Course Name: PYTHON PROGRAMMING

#	Course Outcome	
C01	Understand the basic concepts of Python Programming	K1, K2
C02	Understand File operations, Classes and Objects	K2, K3
C03	Acquire Object Oriented Skills in Python	K3,K4
C04	Develop web applications using Python	K5
C05	Develop Client Server Networking applications	K5, K6

Course Name: ADVANCED SOFTWARE ENGINEERING

#	Course Outcome	
C01	Understand about Software Engineering process	K1, K2
C02	Understand about Software project management skills, design and quality management	K2, K3
C03	Analyze on Software Requirements and Specification	K3,K4
C04	Analyze on Software Testing, Maintenance and Software Re-Engineering	K4, K5
C05	Design and conduct various types and levels of software quality for a software project	K5, K6

Course Name: PRACTICAL I : ALGORITHM AND OOPS LAB

#	Course Outcome	
C01	Understand the concepts of object oriented with respect to C++	K1, K2
C02	Able to understand and implement OOPS concepts	K3, K4
C03	Implementation of data structures like Stack, Queue, Tree , List using C++	K4,K5
C04	Application of the data structures for Sorting, Searching using different techniques.	K5, K6

Course Name: PRACTICAL II : PYTHON PROGRAMMING LAB

#	Course Outcome	
C01	Able to write programs in Python using OOPS concepts	K1, K2
C02	Able to write programs in Python using OOPS concepts	K2, K3
C03	Implementation of lists, dictionaries, sets and tuples as programs	K3, K4
C04	To develop web applications using Python	K5, K6

SEMESTER - II

Course Name: DATA MINING AND WAREHOUSING

#	Course Outcome	
C01	Understand the basic data mining techniques and algorithms	K1, K2
C02	Understand the Association rules, Clustering techniques and Data warehousing contents	K2, K3
C03	Compare and evaluate different data mining techniques like classification, prediction, Clustering and association rule mining	K4, K5
C04	Design data warehouse with dimensional modeling and apply OLAP operations	K5, K6
C05	Identify appropriate data mining algorithms to solve real world problems	K6

Course Name: ADVANCED OPERATING SYSTEMS

#	Course Outcome	
C01	Understand the design issues associated with operating systems	K1, K2
C02	Master various process management concepts including scheduling, deadlocks and distributed file systems	K3, K4
C03	Prepare Real Time Task Scheduling	K4, K5
C04	Analyze Operating Systems for Handheld Systems	K5
C05	Analyze Operating Systems like LINUX and iOS	K5, K6

Course Name: ADVANCED JAVA PROGRAMMING

#	Course Outcome	
C01	Understand the advanced concepts of Java Programming	K1, K2
C02	Understand JDBC and RMI concepts	K2, K3
C03	Apply and analyze Java in Database	K3, K4
C04	Handle different event in java using the delegation event model, event listener and class	K5
C05	Design interactive applications using Java Servlet, JSP and JDBC	K5, K6

Course Name: ARTIFICIAL INTELLIGENCE & MACHINE LEARNING

#	Course Outcome	
C01	Demonstrate AI problems and techniques	K1, K2
C02	Understand machine learning concepts	K2, K3
C03	Apply basic principles of AI in solutions that require problem solving, inference, perception, knowledge representation, and learning	K3, K4
C04	Analyze the impact of machine learning on applications	K4, K5
C05	Analyze and design a real world problem for implementation and understand the dynamic behavior of a system	K5, K6

Course Name: PRACTICAL III : DATA MINING USING R

#	Course Outcome	
C01	Able to write programs using R for Association rules, Clustering techniques	K1, K2
C02	To implement data mining techniques like classification, prediction	K2, K3
C03	Able to use different visualizations techniques using R	K4, K5
C04	To apply different data mining algorithms to solve real world applications	K5, K6

Course Name: PRACTICAL IV : ADVANCED JAVA LAB

#	Course Outcome	
C01	Understand to the implement concepts of Java using HTML forms, JSP & JAR	K1, K2
C02	Must be capable of implementing JDBC and RMI concepts	K2, K3
C03	Able to write Applets with Event handling mechanism	K4, K5
C04	To Create interactive web based applications using servlets and jsp	K5, K6

Elective Course Name: ELECTIVE – I MULTIMEDIA AND ITS APPLICATIONS

#	Course Outcome	
C01	Understand the basic concepts of Multimedia	K1, K2
C02	Demonstrate Multimedia authoring tools	K2, K3
C03	Analyze the concepts of Sound, Images, Video & Animation	K4
C04	Apply and Analyze the role of Multimedia in Internet and real time applications	K4, K5
C05	Analyze multimedia applications using HDTV	K5, K6

Elective Course Name: ELECTIVE – I EMBEDDED SYSTEMS

#	Course Outcome	
C01	Understand the concept of 8051 microcontroller	K1, K2
C02	Understand the Instruction Set and Programming	K2, K3
C03	Analyze the concepts of RTOS	K3, K4
C04	Analyze and design various real time embedded systems using RTOS	K5
C05	Debug the malfunctioning system using various debugging techniques	K5, K6

Elective Course Name: ELECTIVE – I INTERNET OF THINGS

#	Course Outcome	
C01	Understand about IoT, its Architecture and its Applications	K1, K2
C02	Understand basic electronics used in IoT & its role	K2, K3
C03	Develop applications with C using Arduino IDE	K4
C04	Analyze about sensors and actuators	K5, K6
C05	Design IoT in real time applications using today's internet & wireless technologies	K6

Elective Course Name: ELECTIVE – I CRITICAL THINKING, DESIGN THINKING AND
PROBLEM SOLVING

#	Course Outcome	
C01	Understand the concepts of Critical thinking and its related technology	K1, K2
C02	Focus on the explicit development of critical thinking and problem solving skills	K2, K3
C03	Apply design thinking in problems	K3, K4
C04	Make a decision and take actions based on analysis	K4, K5
C05	Analyze the concepts of Thinking patterns, Problem solving & Reasoning in real time applications	K5, K6

SEMESTER - III

Course Name: DIGITAL IMAGE PROCESSING

#	Course Outcome	
C01	Understand the fundamentals of Digital Image Processing	K1, K2
C02	Understand the mathematical foundations for digital image representation, image acquisition, image transformation, and image enhancement	K2, K3
C03	Apply, Design and Implement and get solutions for digital image processing problems	K3, K4
C04	Apply the concepts of filtering and segmentation for digital image retrieval	K4, K5
C05	Explore the concepts of Multi-resolution process and recognize the objects in an efficient manner	K5, K6

Course Name: CLOUD COMPUTING

#	Course Outcome	
C01	Understand the concepts of Cloud and its services	K1, K2
C02	Collaborate Cloud for Event & Project Management	K2, K3
C03	Analyze on cloud in – Word Processing, Spread Sheets, Mail, Calendar, Database	K4, K5
C04	Analyze cloud in social networks	K5, K6
C05	Explore cloud storage and sharing	K6

Course Name: NETWORK SECURITY AND CRYPTOGRAPHY

#	Course Outcome	
C01	Understand the process of the cryptographic algorithms	K1, K2
C02	Compare and apply different encryption and decryption techniques to solve problems related to confidentiality and authentication	K2, K3
C03	Apply and analyze appropriate security techniques to solve network security problem	K3, K4
C04	Explore suitable cryptographic algorithms	K4, K5
C05	Analyze different digital signature algorithms to achieve authentication and design secure applications	K5, K6

Course Name: DATA SCIENCE & ANALYTICS

#	Course Outcome	
C01	Understand the concept of data science and its techniques	K1, K2
C02	Review data analytics	K2, K3
C03	Apply and determine appropriate Data Mining techniques using R to real time applications	K3, K4
C04	Analyze on clustering algorithms	K4, K5
C05	Analyze on regression methods in AI	K6

Course Name: PRACTICAL V : DIGITAL IMAGE PROCESSING Using MATLAB

#	Course Outcome	
C01	To write programs in MATLAB for image processing using the techniques	K1, K2
C02	To able to implement Image Enhancements & Restoration techniques	K2, K3
C03	Capable of using Compression techniques in an Image	K3,K4
C04	Must be able to manipulate the image and Segment it	K5, K6

Course Name: PRACTICAL VI : CLOUD COMPUTING LAB

#	Course Outcome	
C01	Understand the concepts of object oriented with respect to C++	K1, K2
C02	Able to understand and implement OOPS concepts	K3, K4
C03	Implementation of data structures like Stack, Queue, Tree , List using C++	K4,K5
C04	Application of the data structures for Sorting, Searching using different techniques.	K5, K6

Course Name: PRACTICAL VII : WEB APPLICATION DEVELOPMENT AND HOSTING

#	Course Outcome	
C01	Understand & implement the basic HTML tags to create static web pages	K1, K2
C02	Capable of using hyperlinks, frames , images, tables,in a web page	K2, K3
C03	Able to write dynamic web applications using HTML forms	K4, K5
C04	Must be able to write dynamic web applications in PHP & HTML tags using XAMPP	K5, K6

Elective Course Name: ELECTIVE – II MOBILE COMPUTING

#	Course Outcome	
C01	Understand the need and requirements of mobile communication	K1, K2
C02	Focus on mobile computing applications and techniques	K2, K3
C03	Demonstrate satellite communication in mobile computing	K4
C04	Analyze about wireless local loop architecture	K5, K6
C05	Analyze various mobile communication technologies	K6

Elective Course Name: ELECTIVE – II BLOCK CHAIN TECHNOLOGY

#	Course Outcome	
C01	Demonstrate blockchain technology and crypto currency	K1, K2
C02	Understand the mining mechanism in blockchain	K2
C03	Apply and identify security measures, and various types of services that allow people to trade and transact with bitcoins	K3, K4
C04	Apply and analyze Blockchain in health care industry	K4, K5
C05	Analyze security, privacy, and efficiency of a given Blockchain system	K5, K6

Elective Course Name: ELECTIVE – II WEB SERVICES

#	Course Outcome	
C01	Understand web services and its related technologies	K1, K2
C02	Understand XML concepts	K2, K3
C03	Analyze on SOAP and UDDI model	K4, K5
C04	Demonstrate the road map for the standards and future of web services	K5
C05	Analyze QoS enabled applications in web services	K5, K6

Elective Course Name: ELECTIVE – II ROBOTIC PROCESS AUTOMATION FOR BUSINESS

#	Course Outcome	
C01	Demonstrate the benefits and ethics of RPA	K1, K2
C02	Understand the Automation cycle and its techniques	K2
C03	Draw inferences and information processing of RPA	K3, K4
C04	Implement & Apply RPA in Business Scenarios	K5
C05	Analyze on Robots & leveraging automation	K5, K6