



SESHADRIPURAM COLLEGE

Affiliated to the Bengaluru City University & Approved by AICTE

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NAAC Grade : 'A++'

POST – GRADUATION DEPARTMENT OF COMPUTER APPLICATIONS

MCA COURSE OUTCOMES OF FIRST AND SECOND SEMESTER

Course outcomes are precise, quantifiable declarations of the attitudes, abilities, and information that students will possess at the end of the course. Learning Outcomes use verb phrases and specify a concrete action that must be completed within a specified amount of time, like the course's completion. They should, in theory, be measurable, observable, and attainable within a given time frame.

SEMESTER	COURSE TITLE	OUTCOMES
1MCA1	THE ART OF COMPUTER PROGRAMMING	<ul style="list-style-type: none"> • Understand data, Complexity, and order notation and their operations. • Demonstrate the key concepts introduced in C programming by writing and executing the programs. • Implement the single/multi-dimensional array for the given problem. • Demonstrate the application of searching and sorting in solving some societal/industrial problems.
1MCA2	DISCRETE MATHEMATICS	<ul style="list-style-type: none"> • To Acquaint with advanced knowledge of formal computation and its relationship to languages. • To understand fundamentals of logic (the laws of logic, rules of inferences, quantifiers, proofs of theorems) • To solve principles of counting (permutations, combinations), set theory, relations and functions, graphs, trees • Develop the mathematical concepts and technique which should serve as a preparation for more advanced quantitative courses. • To analyze and express computer science problems as mathematical statements and formulate proofs.
1MCA3	COMPUTER ORGANIZATION AND ARCHITECTURE	<ul style="list-style-type: none"> • To Learn the concept of data representation and digital logic circuits used in the computer system. • To understand architecture of processing, memory and input output organization in a computer system. • To Identify, understand and apply different number systems and codes. • Interpret concepts of register transfer logic and arithmetic operations.
1MCA4	THEORY OF COMPUTATION	<ul style="list-style-type: none"> • To acquaint with advanced knowledge of formal computation and its relationship to languages. • To understand the theoretical computer science areas of formal languages and automata. • Interpret the mathematical foundations of computation including automata theory; the theory of formal languages

		<p>and grammars; the notions of algorithm, decidability, complexity, and computability.</p> <ul style="list-style-type: none"> • The students will be able to analyze and express computer science problem as mathematical statements and formulate proofs.
1MCA5	OBJECT ORIENTED PROGRAMMING	<ul style="list-style-type: none"> • To Understand the basic concepts and techniques which form the object -oriented programming paradigm. • Fundamental features of an object-oriented language like Java: object classes and interfaces, exceptions and libraries of object collections. • To model of object-oriented programming: abstract data types, encapsulation, inheritance and polymorphism. • To take the statement of a business problem and from this determine suitable logic for solving the problem; then be able to proceed to code that logic as a program written in Java. • To design and develop document and prepare a professional looking package for each business project using Javadoc.
1MCA6	DATA STRUCTURE	<ul style="list-style-type: none"> • Understand data, data structures, Complexity order notation, and various complexity measures. • Identify relevant data structures to develop solutions for a problem. • Analyzes the performance of Trees, Hashing, and searching techniques. • Analyze and evaluate the algorithms based on the data structures used, order of notation, and performance metrics.
1MCA7	DATA STRUCTURE LAB	<ul style="list-style-type: none"> • The course is designed to develop skills to design and analyze linear and nonlinear data structures. • To strengthen the ability to identify and apply the suitable data structure for the given real-world problem. • To design and analyze the time and space efficiency of the data structure. • To identify the appropriate data structure for given problem.
1MCA8	OBJECT ORIENTED PROGRAMMING WITH JAVA LAB	<ul style="list-style-type: none"> • To understand object-oriented way of solving problems. • To use basic, I/O to communicate with the user to populate variables and control program flow. • To apply arithmetic, logical, relational, and string manipulation expressions to process data. • Conceptualize, Analyze and write programs to solve more complicated problems using the concepts of Object Oriented and java technology. • Apply all the programming concepts as and when required in the future application development.
2MCA1	OPERATING SYSTEMS	<ul style="list-style-type: none"> • Understand and Demonstrate Operating System concepts in general. • To acquire through understanding of process synchronization and Deadlock prevention, avoidance and recovery.

		<ul style="list-style-type: none"> Analyze Memory management strategies and implement file/disk management concept. Analyze operating system protection and implement virtual machines.
2MCA2	DATABASE MANAGEMENT SYSTEMS	<ul style="list-style-type: none"> High-level understanding of major DBMS components and their function. To model an application's data requirements using conceptual modeling tools like ER diagrams and design database schemas based on the conceptual model. To program a data-intensive application using DBMS APIs. To identify and analyze user needs and take them into account in the selection, creation, evaluation and administration of computer- based systems.
2MCA3	COMPUTER NETWORKS	<ul style="list-style-type: none"> Understand the advanced networking concepts. Apply various networking classifications in day-to-day computing Analyze the importance of routing and congestion control principles. Access the different routing protocol methods in the networking support layers.
2MCA4	SOFTWARE ENGINEERING	<ul style="list-style-type: none"> To understand principles of Agile software development and evolution. To design, formulate, and solve complex engineering problems by applying principles of SE. To Learn Time measurement, Time management and Quality assurance techniques. To analyze communication and planning in Distributed Agile Projects. Proficiently apply standards, CASE tools and techniques for engineering software projects.
2MCA5	THE DESIGN AND ANALYSIS OF ALGORITHM	<ul style="list-style-type: none"> To understand and develop efficient algorithms for simple computational tasks. To apply knowledge of computing and mathematics to algorithm design. To design and implement algorithms for moderately difficult computational problems, using various algorithm design techniques. To analyze range of behaviors of algorithms and the notion of tractable and intractable.
2MCA6	ARTIFICIAL INTELLIGENCE	<ul style="list-style-type: none"> To understand the main concepts, models, technologies, and services of AI, the reasons for the use of AI, and its advantages and disadvantages. Design user interfaces to improve human–AI interaction and real- time decision-making. Develop systems that process unstructured data automatically using artificial intelligence (AI) frameworks and platforms.

		<ul style="list-style-type: none"> • Evaluate and Analyze datasets with the following unsupervised learning methods: for dimensionality reduction; for grouping, k-means clustering and hierarchical clustering.
2MCA7	DATABASE SYSTEM MANAGEMENT LAB	<ul style="list-style-type: none"> • To practice the designing, developing and querying a database. • To use MySQL/Oracle database to implement the following Case Studies: <ol style="list-style-type: none"> 1. Company database 2. Library Database 3. Student Management systems • To Analyze the problem carefully and Identify the entities, attributes and primary keys for all the entities. • Apply cardinalities for each relationship, DDL and DML commands. • Using SQL Special operators, Aggregate functions, SQL Joins.
2MCA8	UNIX PROGRAMMING LAB	<ul style="list-style-type: none"> • Demonstrate the working of basic commands of Unix environment including file processing. • Apply Regular expression to perform pattern matching using utilities like grep, sed and awk. • Implement unix commands/ system calls to demonstrate process management Demonstrate the usage of different shell commands, variable and AWK filtering to the given problem. • Develop shell scripts for developing the simple applications to the given problem