

SHRI MAHAVEER COLLEGE

Mahaveer Marg, C-Scheme, Jaipur



Shri Mahaveer College

Affiliated to the University of Rajasthan

(A Co-educational English Medium PG College)

PROGRAMME OUTCOMES

BCA

(Bachelor of Computer Application)

Department of Computer Science

BCA Program

- On completion of BCA Program the student will be able to -

Programme Specific Outcomes (PSOs)	
PSO Number	Upon completion of BBA Degree Programme the graduates will be able to
PSO1	Develop proficiency in problem solving and logical thinking skill in computer science.
PSO2	Appraise in-depth expertise and learning the knowledge of programming languages, web designing, networking and Software development cycle.

Programme Outcomes (POs)	
PO Number	Upon completion of B.Com(ABST) Degree Programme the graduates will be able to
PO1	Discipline knowledge: Acquiring knowledge on basics of Computer Science and ability to apply to design principles in the development of solutions for problems of varying complexity.
PO2	Problem Solving: Improved reasoning with strong mathematical ability to Identify, formulate and analyze problems related to computer science and exhibiting a sound knowledge on data structures and algorithms.
PO3	Difficulty Analysis: Talent to classify, significantly evaluate and prepare complex computing problems using fundamentals of computer knowledge and request domains.
PO4	Design and Development of Solutions: Ability to design and development of algorithmic solutions to real/world problems and acquiring a minimum knowledge on statistics and optimization problems. Establishing excellent skills in applying various design strategies for solving complex problems.
PO5	Accomplish Investigations of Compound Computing Troubles: Ability to invent and ways experiments interpret data and present well up to date conclusions.
PO-6	Application Systems Knowledge: Possessing a sound knowledge on computer application software and ability to design and develop app for applicative problems.
PO-7	Modern Tool Usage: Identify, select and use a modern scientific and IT tool or technique for modeling, prediction, data analysis and solving problems in the area of Computer Science and making the mobile based application software.
PO-8	Mission Administration: Skill to recognize administration and Computing philosophy with computing acquaintance to supervise projects in

	multidisciplinary environments.
PO-9	Communication: Must have a reasonably good communication knowledge both in oral and writing.
PO-10	Ethics on Professional, Environment and Society: Exhibiting professional ethics to maintain the integrality in a working environment and also have concern on societal impacts due to computer-based solutions for problems.
PO-11	Motivation to take up Higher Studies: Inspiration to continue educations towards advanced studies on Computer Science.

COURSE OUTCOMES

BCA I Year

<u>ELEMENTARY PHYSICS</u>	
After completion of course:	
CO1	Demonstrate conceptual understanding of fundamental physics principles
CO2	Communicate physics reasoning in oral and in written form
CO3	Solve physics problems using qualitative and quantitative reasoning including sophisticated mathematical techniques
CO4	Conduct independent research or work successfully in a technical position.

<u>BASIC MATHEMATICS</u>	
After completion of course:	
CO1	To impart the required knowledge of Mathematics and statistics for managerial activities among students
CO2	To inculcate in students the fundamental mathematical background in computer science.

CO3	To gain knowledge about Sets, Relations Functions, Matrices, Mathematical logic, and Group theory.
CO4	Understand the basic concepts of Sets, Relations Functions, Matrices, Mathematical logic, and Group theory

PRINCIPLES OF PROGRAMMING LANGUAGE

After completion of course:	
CO1	Explain basic concepts of programming language, flowchart and design an algorithm for a given problem.
CO2	Select the loops and decision making statements to solve the problem.
CO3	Describe C programs that use Pointers to access arrays, strings and functions.
CO4	Implement user defined data types including structures and unions to solve problems, file handling.

COMPUTER ORGANISATION

After completion of course:	
CO1	Summarize the fundamental components of basic computer system and its organization.
CO2	Apply arithmetic and logical micro operations of binary number system.
CO3	Analyze control unit design and concept of pipelining.
CO4	Classify memory hierarchy and examine numerical problem based on it.

OFFICE MANAGEMENT TOOLS

After completion of course:	
CO1	To perform documentation such as basic editing functions, formatting text, copy and moving objects and text. Learning the formatting skills on paragraphs, tables, lists, and pages.
CO2	To perform accounting operations such as Learning formulas, creating charts and graphs that can easily explain or simplify complex information or data. Analyzing data

	using Pivot Tables and Pivot Charts.
CO3	To perform presentation skills.
CO4	Create slide presentations that include text, graphics, animation, and transitions.

TECHNICAL WRITING & COMMUNICATION SKILLS

After completion of course:	
CO1	Develop a solid understanding of English grammar rules and correct usage, including sentence structure, punctuation, and syntax.
CO2	Build a broad vocabulary to enhance reading comprehension and expressive writing.
CO3	Write clear, coherent, and well-organized essays, reports, and other written forms, with a focus on thesis development, argument support, and coherent structure
CO4	Enhance the ability to revise and edit writing for clarity, coherence, and correctness, including grammar, punctuation, and style

C- LABORATORY

After completion of course:	
CO1	To write programs to understand selection and iterative statements.
CO2	To write programs to implement usage of 1D and 2D arrays.
CO3	To develop code reusable programs using user defined functions.
CO4	To write programs to solve memory access problems using pointers.

OFFICE AUTOMATION LABORATORY

After completion of course:	
CO1	Students will have a working knowledge of paragraph formatting, macro and mail-merge in MS-Word.
CO2	Students will have a working knowledge of basic functions and formulas in MS-Excel.
CO3	Create presentation by adding slides, applying animations, set times to slides, linking to other files.
CO4	Students will have a working knowledge of basic functions and formulas in MS-Powerpoint.

TYPING SKILLS LABORATORY

After completion of course:

CO1	Develop a solid understanding of English grammar rules and correct usage, including sentence structure, punctuation, and syntax.
CO2	Build a broad vocabulary to enhance reading comprehension and expressive writing.
CO3	Write clear, coherent, and well-organized essays, reports, and other written forms, with a focus on thesis development, argument support, and coherent structure
CO4	Enhance the ability to revise and edit writing for clarity, coherence, and correctness, including grammar, punctuation, and style

BCA II YEAR

BUSINESS ACCOUNTING

After completion of course:

CO1	To define financial management, its importance, financial planning and objectives, benefits and the stages. To identify the working capital requirement and the basics of investing in securities.
CO2	To understand risk profile of firms, specifically estimate the costs of capital, including debt and equity capital using financial data.
CO3	Apply financial management concepts and tools to the financing decisions, dividend decisions and investment decisions
CO4	To analyze and develop analytical skills this would facilitate the decision making in business situations

DISCRETE MATHEMATICS

After completion of course:

CO1	To understand the basics concepts of Discrete Mathematical Structures.
CO2	To get the Knowledge about sets, relations and functions.
CO3	To study the basics of lattices and graphs.
CO4	To get familiar with propositional logic

OPERATING SYSTEM

After completion of course:

CO1	Describe the basics of the operating systems, mechanisms of OS to handle processes, threads, and their communication.
CO2	Analyze the memory management and its allocation policies.
CO3	Illustrate different conditions for deadlock and their possible solutions.
CO4	Discuss the storage management policies with respect to different storage management technologies

DATABASE MANAGEMENT SYSTEM

After completion of course:

CO1	Identify the fundamental elements of relational database management systems.
CO2	Design and explain the basic concepts of relational data model, entity-relationship model, and relational database design.
CO3	Apply the relational database theory to formulate basic and advanced SQL queries and relational algebra expressions for the queries.
CO4	Identify the use of normalization and functional dependency in database design and understand the concept of transactions in database management system.

WEB DESIGNING & MULTIMEDIA

After completion of course:

CO1	Describe basics knowledge of the Internet contrast protocols, Security and Privacy issues.
CO2	Explain basic concepts of creation of web application considering HTML, CSS and JavaScript.
CO3	Compare the decision making statement logic under different concepts.
CO4	Design web applications using HTML, JavaScript, and CSS.

OBJECT ORIENTED PROGRAMMING C++

After completion of course:

CO1	Explain OOP's features and C++ concepts.
CO2	Construct class and object using constructors.
CO3	OOP's concepts like inheritance, Interface & package in real time situations.
CO4	Execute string functions and handling data files and operations on files.

DATABASE LABORATORY

After completion of course:

CO1	Design an information model expressed in the form of ER diagram.
CO2	Apply SQL queries to implement and manipulate the database and provide different constraints.
CO3	Apply structured query language to automate the real time problems of databases.
CO4	Apply structured query language to join more than one tables.

OBJECT ORIENTED LABORATORY

After completion of course:

CO1	Understand basic Structure of the C ++ PROGRAMMING, declaration and usage of variables
CO2	Understand C++ programs using Class and operators Exercise conditional and iterative statements to Write C++ programs
CO3	Understand for C++ programs using Pointers to access arrays, strings and functions
CO4	Understand C++ programs using pointers and allocate memory using dynamic memory management functions.

WEB DESIGNING LABORATORY

After completion of course:

CO1	Understand and apply fundamental internet concepts and protocols.
CO2	Design and develop web pages using HTML
CO3	Implement and customize web layouts using Cascading Style Sheets (CSS).
CO4	Install and use Content Management Systems (CMS) like Joomla and WordPress.

MULTIMEDIA LABORATORY

After completion of course:

CO1	Describe basics knowledge of the Internet contrast protocols, Security and Privacy issues.
CO2	Explain basic concepts of creation of web application considering HTML, CSS and JavaScript.
CO3	Compare the decision making statement logic under different concepts.
CO4	Design web applications using HTML, JavaScript, and CSS.

BCA III YEAR

DATA STRUCTURE

After completion of course:

CO1	Recall information for writing Algorithms in solving problems.
CO2	Choose appropriate data structure as applied to specify problem definition.
CO3	Apply problem solving skills & provide a foundation for advanced programming courses using an object-oriented programming methodology.
CO4	Use linear & Non linear Data structures like stacks, Queues, Linked list etc., and show operations like searching, insertion, deletion, traversing mechanism etc. on various data structures

SYSTEM DESIGN CONCEPT

After completion of course:

CO1	Explain the concept of system and system development life cycle (SDLC), system testing, software project planning.
CO2	Describe systems design and system design techniques, Management Information System.
CO3	Outline and translate a specification into a design, and then realize that design practically, using an appropriate system design methodology.
CO4	Develop the system from the design and effectively apply relevant standards and perform testing, and quality management and practice.

NETWORKING TECHNOLOGIES

After completion of course:

CO1	Understand the fundamentals of computer networking and its various components
CO2	Identify and analyze various OSI Layers and their functions.
CO3	Understand the importance of network security , protocols and implement basic security measures.
CO4	Explore Switching Techniques in Networking

CORE JAVA PROGRAMMING

After completion of course:

CO1	Define the concept of OOP's as well as the purpose and usage principles of inheritance, polymorphism, encapsulation and method overloading
CO2	Explain Control Statements, Arrays, classes, objects, members of a class and the relationships among them needed for a specific problem
CO3	OOP's concepts like inheritance, Interface & package in real time situations
CO4	Develop Java application programs using sound OOP practices (e.g., interfaces) and proper program structuring (e.g., by using access applet, multithreading).

E-COMMERCE

After completion of course:

CO1	Define and Describe E-business and its Models.
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CO2	Discuss various Testing strategies and their Implementation.
CO3	Understanding various Electronic Payment methods.
CO4	Understanding E-banking mechanism. & Mobile Commerce.

PHP	
After completion of course:	
CO1	Understanding client side & server side scripting
CO2	Utilizing the basic concept of statements and arrays.
CO3	Understanding Regular expression & Functions
CO4	Implement browser handling power of PHP & Exceptions & Data base Handling

<u>NETWORKING LABORATORY</u>	
After completion of course:	
CO1	Understand and implement basic network architectures.
CO2	Analyze and apply the OSI model for network communication.
CO3	Implement and differentiate between TCP/IP and OSI models.
CO4	Understand and implement various switching techniques in networking.

<u>CORE JAVA LABORATORY</u>	
After completion of course:	
CO1	Able to solve real world problems using OOP techniques.
CO2	Able to understand the use of abstract classes.
CO3	Able to solve problems using java collection framework and I/o classes.
CO4	Able to develop multithreaded applications with synchronization.

<u>PHP LABORATORY</u>	
After completion of course:	
CO1	To understand the features like functions, forms in PHP.

CO2	To introduce the importance of PHP in web page design
CO3	To handle requests and draw images on the server with AJAX.
CO4	To understand Files, OOPs concepts , Cookies, Sessions and Data base.