

PROGRAMME OUTCOMES (BCA):

BCA programme has been designed to prepare graduates for attaining the following specific outcomes:

- An ability to apply knowledge of mathematics, computer science and management in practice.
- An ability to enhance not only comprehensive understanding of the theory but its application too in diverse field.
- The program prepares the young professional for a range of computer applications, computer organization, techniques of Computer Networking, Software Engineering, Web development, Database management and Advance Java
- An ability to design a computing system to meet desired needs within realistic constraints such as safety, security and applicability in multidisciplinary teams with positive attitude.
- An ability to communicate effectively.
- In order to enhance programming skills of the young IT professionals, the program has introduced the concept of project development in each language/technology learnt during semester.

COURSE OUTCOMES:

Semester I

IT Tools & Applications (BCA-101)

Upon completion of this course, students will be able to:

- Understand basic computer hardware architecture & be able to design fundamental logic circuits.
- Convert between different number systems and describe some different codes.
- Understand the functions of basic digital combinatorial circuits and sequential circuits.
- Understand the fundamental hardware components that make up a computer's hardware and the role of each of these components.
- Understand the role of CPU and its components.
- Learn essential IT support skills including installing, configuring, securing and troubleshooting operating systems and hardware.
- Gain hands-on experience of working in Microsoft products such as: MS Word, MS Excel and MS Powerpoint.

Mathematics (Bridge Course) (BCA-102)

Upon completion of this course, students will be able to:

- Apply knowledge of discrete mathematics appropriate to the discipline.
- Analyze and solve problems based on Matrix & determinants
- Understand Statistics and its applications and also will be able to calculate Mean, median and mode.

Basic Accounting (BCA-103)

Upon completion of this course, students will be able to:

- Understand basic accounting terms like debit, credit, journal, day book, trial balance etc.
- Prepare Journals, Day Books, Trial Balance, Profit & Loss statement, Balance Sheet etc.
- Understand Assets, Liabilities, Capital etc.
- Understand the overall Basics of Accounting.

Programming in C Language (BCA-104)

Upon completion of this course, students will be able to:

- Learn how to build by the algorithms for problems.
- Learn how to create pictorial representations of the program.
- Learn how to apply logic for problems.
- Enhance their programming skills.
- Learn about Loops, Conditional statements, Array, Pointers, File Handling, Structure, Unions etc.

Semester II

Business System (BCA-201)

Upon completion of this course, students will be able to:

- Understand the hierarchy of an Organization.
- Understand and develop Business development Application.
- Understand the planning and execution of a business.

Software Engineering (BCA-202)

Upon completion of this course, students will be able to:

- Understand the process of Software development.
- Understand and plane the Software development.
- Understand and implement the Coding.
- Debug a software.
- Test a software.

Mathematics-I (Discrete) (BCA-203)

Upon completion of this course, students will be able to:

- Understand the theory of Sets, Relations and functions.
- Understand and implement the Permutation and Combination.
- Understand and implement the Algebra of Logic.
- Understand and implement Recursion & Recurrence.
- Understand and implement Graph theory.

Introduction to Object Oriented Programming using C++ (BCA-204)

Upon completion of this course, students will be able to:

- Apply C++ features to program design and implementation.
- Explain object-oriented concepts and describe how they are supported by C++ including identifying the features and peculiarities of the C++ programming language.
- Use C++ to demonstrate practical experience in developing object-oriented solutions.
- Design and implement programs using C++.
- Analyze a problem description, design and build object-oriented software using good coding practices and techniques.
- Implement an achievable practical application and analyze issues related to object-oriented techniques in the C++ programming language.

Digital Ckt & Logic design (BCA-205)

Upon completion of this course, students will be able to:

- Understand the concepts of Boolean algebra.
- Understand and design digital logic circuits.
- Understand and design adder, multiplexer etc.

Semester III

Operating System (BCA-301)

Upon completion of this course, students will be able to:

- Gain extensive knowledge on principles and modules of operating systems.
- Understand key mechanisms in design of operating systems modules.
- Understand process management, concurrent processes and threads, memory management, virtual memory concepts, deadlocks.
- Compare performance of processor scheduling algorithms - produce algorithmic solutions to process synchronization problems.

Mathematics II (BCA-302)

Upon completion of this course, students will be able to:

- Solve problems related to Matrix.
- Solve simultaneous equations using Gauss elimination and Gauss Jordan method.
- Understand the concept of Central tendency and solve problems related to Mean, Median and Mode.
- Understand the concept of deviation and solve problems related to dispersion, range, standard deviation, co-efficient of variation.
- Understand the concept of Differential and Integral Calculus.

Computer Networks (BCA-303)

Upon completion of this course, students will be able to:

- Understand the data communication concepts.
- Understand the concept of Communication channel.
- Understand how the data is transmitted wirelessly.
- Understand the various layers of Network architecture.
- Understand and implement the switching techniques.
- Learn the need to create a Network.
- Learn about different layers and protocols present in those layers.
- Learn to configure the network devices.
- Learn about IP -Addressing.
- Learn about Network Security.

Data Structures (BCA-304)

Upon completion of this course, students will be able to:

- Learn about how data can be stored in memory.
- Learn and implement Arrays and various operations on array.
- Learn and implement Stacks and Queues and various operations on them.
- Learn and implement the concept of Linked List.
- Learn and implement the concept of various types of Trees.
- Learn and implement various searching and sorting techniques alongwith their complexity.
- Learn and implement Graph and Graph traversal techniques.

Introduction to Microprocessor (BCA-305)

Upon completion of this course, students will be able to:

- Know the historical background of Microprocessor and its application.
- Learn in deep about 8085 microprocessor and its architecture.
- Learn about Instruction cycle of 8085.
- Learn in deep about 8086 microprocessor and its architecture.
- Learn about 8086 addressing modes.
- Learn about interrupts.
- Learn how to simulate 8085 and 8086 operation on a simulator.

Semester IV

Computer System Architecture (BCA- 401)

Upon completion of this course, students will be able to:

- Understand about concepts of Computer Organization and design.
- Understand and implement Instruction codes and op-codes.
- Understand Registers, Computer Instructions, timing and control.
- Understand CPU basics, Stack Organization, Instruction format, Addressing formats.
- Understand Memory system of a Computer.
- Understand basics of 8-bit Microprocessor.

Introduction to Database Management Systems (BCA-402)

Upon completion of this course, students will be able to:

- Understand the importance of Database.
- Understand the Architecture & Modeling of Database.
- Understand the concept of RDBMS.
- Learn brief introduction to Structured Query Language.
- Learn and implement Backup and Recovery of databases.
- Learn and implement the Database Security.
- Design Commercial database applications.

Networking through Linux (BCA-403)

Upon completion of this course, students will be able to:

- Learn History and various distributions of Linux.
- Learn and perform Installation of Red Hat Linux.
- Learn and operate Red Hat Linux.
- Learn and implement Linux System Administration.
- Learn and implement TCP/IP on Linux.

Network Security (BCA-404)

Upon completion of this course, students will be able to:

- Learn basic terminologies of Networking.
- Know about fundamentals of Information Security.
- Know and analyze the security threats and vulnerabilities.
- Learn and implement System & Network Administration and security.
- Learn about tools and technologies used for Network security.
- Learn and perform Security Audits.

Multimedia and Animation (BCA-405)

Upon completion of this course, students will be able to:

- Learn and implement basics of Multimedia & Animation.
- Learn and implement Text editing, Image editing etc.
- Learn basics of Computer Graphics.
- Learn and understand Digital audio, Digital video, animation and Special Effects.

SEMESTER V

Introduction to Internet and Java (BCA-501)

Upon completion of this course, students will be able to:

- Understand the concept of Internet.
- Learn about various protocols.
- Learn about working on Internet.
- Learn and work on various Internet Applications.
- Learn about Java Basics.
- Learn about Network Programming.
- Develop Java Applications, applets etc.

Oracle & Developer 2000 (BCA-502)

Upon completion of this course, students will be able to:

- Manage data in Oracle.
- Manipulating data in SQL.
- Understand Developer 2000.

Flash & Director Multimedia Tools (BCA-503)

Upon completion of this course, students will be able to:

- Understand Communication and Interactive Communication.
- Learn about creation and execution of Multimedia project.
- Work and create Multimedia Project with Director 11.
- Work and create Multimedia Project with Adobe Flash.

SEMESTER VI

Web Development Tools & Techniques (BCA-601)

Upon completion of this course, students will be able to:

- To develop Webpages, Static Websites, Dynamic Websites.
- To use ASP as Server Side Scripting Language.
- To use PHP as Server Side Scripting Language.
- To use JSP, JavaScript.
- To understand database and it's connectivity with Server Side Scripting language.
- To develop Web Applications with MySQL/SQL as backend.

Advance Networking (BCA-602)

Upon completion of this course, students will be able to:

- Understand and manage internetworking.
- Understand bridging, switching.
- Understand Routing protocols and implement them.
- Understand and implement WAN Protocols.
- Understand Network Management.
- Setup and Manage Commercial Networks.