

CSTS GOVERNMENT KALASALA JANGAREDDIGUDEM



DEPARTMENT OF COMPUTER SCIENCE

Specific outcomes and Course outcomes

CBCS - 4 Years Honors

BSC (Computers)(Major)

&

BCOM (Computers)

(2019 – 2023 & 2023-2024)

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DEPARTMENT OF COMPUTER SCIENCE

COURSE OUT COMES FOR BSC (COMPUTERS SCIENCE) AND BCOM (COMPUTERS APPLICATIONS) :

The course outcomes for BSc in Computer Science and BCom in Computer Applications may vary depending on the specific curriculum of the respective universities or colleges. However, I can provide you with a general set of course outcomes that are commonly associated with these programs. These outcomes are designed to ensure that students acquire a well-rounded understanding of computer science or computer applications. Please note that these are broad outcomes and the specific details may vary between institutions.

BSc in Computer Science:

CO 1. Programming Foundations:

- Demonstrate proficiency in programming languages such as Java, C++, or Python.
- Understand the fundamentals of algorithm design and data structures.

CO 2. Software Development:

- Develop and implement software solutions for real-world problems.
- Understand and apply principles of software engineering.

CO 3. Database Management:

- Design and manage relational databases.
- Utilize SQL for querying and manipulating databases.

CO 4. Computer Networks:

- Understand the basics of computer networks and network protocols.
- Develop simple network applications.

CO 5. Operating Systems:

- Understand the architecture and components of operating systems.
- Develop programs that interact with operating systems.

CO 6. Web Development:

- Design and implement web-based applications.
- Understand front-end and back-end development concepts.

CO 7. Artificial Intelligence and Machine Learning:

- Understand basic concepts of AI and machine learning.
- Apply machine learning algorithms to solve problems.

CO 8. Cybersecurity Awareness:

- Understand the basics of cybersecurity.
- Identify and mitigate common security threats.

CO 9. Project Management:

- Apply project management principles to software development projects.
- Work effectively in a team on software projects.

CO 10. Ethical and Professional Practices:

- Adhere to ethical standards in software development.
- Understand the societal impact of computing.

BCom in Computer Applications:

CO 1. Business Fundamentals:

- Understand basic principles of business and commerce.
- Apply computer applications to solve business problems.

CO 2. Database Management for Business:

- Design and manage databases relevant to business applications.
- Retrieve and analyze data for decision-making.

CO 3. E-Commerce and Business Applications:

- Understand the principles of e-commerce.
- Develop and manage e-commerce platforms.

CO 4. Financial and Managerial Accounting:

- Apply computer applications for financial and managerial accounting.
- Use software tools for financial analysis.

CO 5. Enterprise Resource Planning (ERP):

- Understand the concept of ERP systems and their applications.
- Use ERP software for integrated business processes.

CO 6. Business Analytics:

- Apply analytical techniques to interpret and analyze business data.
- Use data-driven insights for decision-making.

CO 7. Communication Skills:

- Demonstrate effective communication skills in a business context.
- Present and communicate technical information to non-technical stakeholders.

CO 8. Legal and Ethical Considerations:

- Understand legal and ethical considerations related to computer applications in business.
- Comply with relevant laws and ethical standards.

CO 9. Project Work:

- Apply computer applications in real-world business projects.
- Collaborate in a team environment to deliver business solutions.

CO 10. Internship/Practical Experience:

- Gain practical experience through internships or industry projects.
- Apply theoretical knowledge to real-world business scenarios.

These outcomes are meant to provide students with a balanced education, combining technical skills with an understanding of business principles. The specific outcomes may vary, and institutions often adapt their programs to align with industry trends and academic standards.

1. PROGRAMMING IN C-LANGUAGE

SNO	TOPIC	DESCRIPTION
CO1	C Language Syntax	<ul style="list-style-type: none">- Demonstrate a thorough understanding of C language syntax, including statements, expressions, and operators.- Write C programs that adhere to the language's syntax rules.
CO2	Coding Standards and Best Practices	<ul style="list-style-type: none">- Adhere to coding standards and best practices for writing clean, readable, and maintainable code.- Understand the importance of documentation and comments in code.
CO3	Algorithmic Thinking	<ul style="list-style-type: none">- Develop algorithmic thinking and problem-solving skills.- Apply fundamental algorithms and data structures using C.
CO4	Project Work	<ul style="list-style-type: none">- Collaborate on a programming project using C.- Apply knowledge gained throughout the course to solve real-world problems.
CO5	Testing and Debugging	<ul style="list-style-type: none">- Develop skills in testing C programs.- Use debugging tools to identify and fix errors in code.

2. OOPS WITH JAVA

SNO	TOPIC	DESCRIPTION
CO1	Understanding OOP Principles	<ul style="list-style-type: none">- Define and explain the core principles of Object-Oriented Programming, including encapsulation, inheritance, and polymorphism.- Apply these principles to design and implement Java programs.
CO2	Class and Object Concepts	<ul style="list-style-type: none">- Define classes and objects and understand the relationship between them.- Demonstrate the ability to create and use classes and objects in Java.
CO3	Design Patterns	<ul style="list-style-type: none">- Identify and apply common design patterns in Java.- Understand the benefits of using design patterns in software development.
CO4	Exception Handling	<ul style="list-style-type: none">- Implement exception handling mechanisms in Java to enhance program robustness.- Demonstrate the use of try-catch blocks, throw, and throws statements.
CO5	Graphical User Interfaces (GUI)	<ul style="list-style-type: none">- Design and develop simple graphical user interfaces using Java's Swing or JavaFX.- Understand event-driven programming and handle GUI events.
CO6	Java Collections Framework	<ul style="list-style-type: none">- Utilize the Java Collections Framework to work with data structures like lists, sets, and maps.- Understand and implement algorithms for searching and sorting.

3. DATA STRUCTURES

SNO	TOPIC	DESCRIPTION
CO1	Understanding of Basic Data Structures	<ul style="list-style-type: none">- Define and explain fundamental data structures such as arrays, linked lists, stacks, and queues.- Understand the characteristics, advantages, and limitations of each data structure.
CO2	Array and Linked List Operations	<ul style="list-style-type: none">- Implement operations on arrays and linked lists, such as insertion, deletion, and traversal.- Analyze the time and space complexity of these operations.
CO3	Stacks and Queues	<ul style="list-style-type: none">- Implement and apply stack and queue data structures.- Solve problems using stacks and queues, and understand their applications.
CO4	Trees and Graphs	<ul style="list-style-type: none">- Implement and apply stack and queue data structures.- Solve problems using stacks and queues, and understand their applications.
CO5	Sorting Algorithms	<ul style="list-style-type: none">- Implement and analyze various sorting algorithms, including bubble sort, selection sort, merge sort, and quicksort.- Compare the time and space complexity of sorting algorithms.

4. DATABASE MANAGEMENT SYSTEM

SNO	TOPIC	DESCRIPTION
CO1	Understanding Database Concepts	<ul style="list-style-type: none">- Define and explain key terms and concepts related to databases, including entities, attributes, relationships, and constraints.
CO2	Relational Database Model	<ul style="list-style-type: none">- Understand the relational database model and its components, such as tables, tuples, and attributes.- Apply normalization techniques to design well-structured relational databases.
CO3	SQL Proficiency	<ul style="list-style-type: none">- Write and execute SQL queries to retrieve, insert, update, and delete data from a relational database.- Use SQL to create and modify database schema objects like tables, views, and indexes.
CO4	Normalization	<ul style="list-style-type: none">- Understand the process of normalization and its importance in reducing data redundancy and improving data integrity.- Apply normalization techniques to ensure the efficiency of a database.
CO5	Database Administration	<ul style="list-style-type: none">- Perform basic database administration tasks, including monitoring, tuning, and optimizing database performance.- Develop and implement a backup and recovery plan.

5. OPERATING SYSTEM

SNO	TOPIC	DESCRIPTION
CO1	Understanding Operating System Fundamentals	<ul style="list-style-type: none">- Define and explain the fundamental concepts of operating systems.- Describe the roles and responsibilities of an operating system.
CO2	Process Management	<ul style="list-style-type: none">- Understand the concept of a process and process management.- Explain process scheduling and its algorithms.- Demonstrate knowledge of process synchronization and communication.
CO3	Memory Management	<ul style="list-style-type: none">- Describe virtual memory concepts and techniques.- Explain memory allocation and deallocation mechanisms.- Understand the role of page replacement algorithms.
CO4	File Systems	<ul style="list-style-type: none">- Understand file system organization and structure.- Explain file operations, directory structures, and file protection.
CO5	Security and Protection	<ul style="list-style-type: none">- Understand the importance of security in operating systems.- Explain access control mechanisms and security policies.- Demonstrate knowledge of security threats and protection measures.

6. WEB APPLICATION DEVELOPMENT USING HTML

SNO	TOPIC	DESCRIPTION
CO1	HTML and CSS	<ul style="list-style-type: none">- Write well-structured HTML documents with an understanding of document structure and semantics.- Apply CSS to control the presentation and layout of web pages.
CO2	Responsive Web Design	<ul style="list-style-type: none">- Design and implement responsive web pages that adapt to different screen sizes and devices.- Use media queries and flexible grid layouts for responsive design.
CO3	Web Development Frameworks	<ul style="list-style-type: none">- Understand the basics of client-server architecture.- Explore different web application architectures, such as monolithic and microservices.
CO4	Web Application Architecture	<ul style="list-style-type: none">- Understand the basics of client-server architecture.- Explore different web application architectures, such as monolithic and microservices.
CO5	Security in Web Development	<ul style="list-style-type: none">- Identify common web security threats and vulnerabilities.- Implement security measures, such as input validation and secure communication (HTTPS).

7. WEB APPLICATION DEVELOPMENT USING PHP & MYSQL

SNO	TOPIC	DESCRIPTION
CO1	PHP Basics	<ul style="list-style-type: none">- Understand the basic syntax and structure of PHP.- Write and execute simple PHP scripts.
CO2	File Handling	<ul style="list-style-type: none">- Read from and write to files using PHP.- Understand file permissions and error handling.
CO3	Database Connectivity	<ul style="list-style-type: none">- Connect PHP scripts to databases (e.g., MySQL, PostgreSQL).- Execute SQL queries and handle database interactions.
CO4	Object-Oriented Programming in PHP	<ul style="list-style-type: none">- Understand and implement basic object-oriented concepts in PHP.- Design and use classes and objects in PHP scripts.
CO5	Web Services and APIs	<ul style="list-style-type: none">- Consume external web services and APIs using PHP.- Understand formats like JSON and XML for data exchange.

8. CYBER SECURITY & MALWARE ANALYSIS

SNO	TOPIC	DESCRIPTION
CO1	Introduction to Cybersecurity	<ul style="list-style-type: none">- Understand the fundamental concepts of cybersecurity.- Define key terms and concepts related to information security.
CO2	Security Fundamentals	<ul style="list-style-type: none">- Understand the principles of confidentiality, integrity, and availability (CIA triad).- Identify and analyze security risks and vulnerabilities.
CO3	Security Policies and Procedures	<ul style="list-style-type: none">- Develop and implement security policies and procedures.- Understand the importance of compliance with legal and regulatory requirements.
CO4	Network Security	<ul style="list-style-type: none">- Implement network security measures to protect against unauthorized access and attacks.- Configure firewalls, intrusion detection/prevention systems, and secure network protocols.
CO5	Cryptography	<ul style="list-style-type: none">- Understand the principles of cryptography.- Implement encryption and decryption algorithms to secure data.

9. MOBILE APPLICATION DEVELOPMENT

SNO	TOPIC	DESCRIPTION
CO1	Mobile Technology Overview	<ul style="list-style-type: none">- Understand the evolution and current state of mobile technology.- Identify key players, trends, and innovations in the mobile industry.
CO2	Mobile Application Development	<ul style="list-style-type: none">- Develop mobile applications for one or more platforms.- Understand the software development lifecycle for mobile apps.
CO3	User Interface (UI) Design for Mobile	<ul style="list-style-type: none">- Design user-friendly and responsive mobile interfaces.- Understand mobile UI design principles and best practices.
CO4	Location-Based Services	<ul style="list-style-type: none">- Implement location-based services in mobile applications.- Understand the use of GPS and other location technologies.
CO5	Mobile Testing and Quality Assurance	<ul style="list-style-type: none">- Conduct testing for mobile applications.- Implement quality assurance processes for mobile development.