

## CRITERIA-II

### DEPARTMENT OF COMPUTER SCIENCE & BCA

#### PROGRAMME SPECIFIC OUTCOMES:

##### **Programme Outcome: Bachelor of Computer Applications**

Students who choose BCA Programme, develop the ability to think critically, logically, analytically and to use and apply current technical concepts and practices in the core development of solutions in the form of Information technology. The knowledge and skills gained with a degree in Computer Science prepare graduates for a broad range of jobs in education, research, government sector, business sector and industry. The program covers the various essential concepts in Computer Science. The course lays a structured foundation of Computer fundamentals, Numerical methods, Data structure, Algorithm and Complexity analysis, Software Engineering, Programming Concepts in various languages(C, C++, Java etc.), Computer Networking, System Administration, Operating System, Computer Architecture, Microprocessor, Web technology, Computer Graphics and Database management system etc. An exceptionally broad range of topics covering current trends and technologies in computer science: Advanced web technology, Mobile application, Animation, Data mining etc. Also, to carry out the hand on sessions in Computer lab using various Programming languages and tools to have a deep conceptual understanding of the topics to widen the horizon of students' self experience.

The completion of the BCA Programme shall enable a student to:

1. To communicate technical information both orally and in writing
2. Apply the knowledge gained in core courses to a broad range of advanced topics in computer.
3. To learn and develop sophisticated technical products independently.
4. To design, implement, and evaluate computer-based system, process, component.
5. Program to meet desired needs by critical understanding, analysis and synthesis.
6. Identify applications of Computer Science in other fields in the real world to enhance the career prospects
8. Realize the requirement of lifelong learning through continued education and research.
9. Use the concepts of best practices and standards to develop user interactive and abstract application
10. Understand the professional, ethical, legal, security, social issues and responsibilities.

## Program Objectives

The Department of Computer Science achieves its mission by pursuing the following objectives:

-To teach students how to apply the principles of computer science, mathematics and scientific investigation to solve real-world problems appropriate to the discipline.

-To teach students lifelong learning skills, which will allow them to successfully adapt to evolving technologies throughout their professional careers.

-To prepare students for employment and advanced studies, and provide them with significant experiences in complex software development for real-world problems.

-To teach students effective teamwork, communication and interpersonal skills that enable them to work with others effectively in their professional careers.

-To prepare students to function ethically and responsibly, and to be conscious of ethical, social, global, legal, security and professional issues related to computing.

	SL NO	CORE SUBJECT	PROGRAM OUTCOME	SPECIFIC OUTCOME
<b>Semester 1</b>	1	C1: BCA-HC-1016 Introduction to C programming	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office. 2.Start own business in web development and software development and Hardware . 3.Develop different web and windows based applications. 4.Students can also pursue the career of computer operators.	i) To communicate technical information both orally and in writing. ii) Apply the knowledge gained in core courses to a broad range of advanced topics in computer science, to learn and develop sophisticated technical products independently. iii) To design, implement, and evaluate computer-based system, process, component, or program to meet desired needs by critical understanding, analysis and synthesis.
	2	C2: BCA-HC-1026 Computer Fundamentals & ICT Hardware	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office. 2.Start own business in web development and software development and Hardware . 3.Develop different web and windows based applications.	i) To communicate technical information both orally and in writing. ii) Apply the knowledge gained in core courses to a broad range of advanced topics in computer.
	3	GE 1B: BCA-HG-1026: Office	1.Students are eligible to apply for jobs in various companies,	i) To communicate technical information both orally and in

		Automation	industries, banks, Govt office.	writing. ii) Apply the knowledge gained in core courses to a broad range of advanced topics in computer.
	4	C4: BCA-HC-2026 Digital Logic Fundamentals	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office.	i) To communicate technical information both orally and in writing. ii) Apply the knowledge gained in core courses to a broad range of advanced topics in computer.
	5	(English Communication) ENG-AE-1014/	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office.	i) To communicate technical information both orally and in writing.
	6	Environmental Science ENV-AE- 1024	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office.	i) To communicate technical information both orally and in writing.
<b>Semester 2</b>	1	C3: BCA-HC-2016 Mathematics –I	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office.	i) To communicate technical information both orally and in writing. ii) Apply the knowledge gained in core courses to a broad range of advanced topics in mathematics
	2	C4: BCA-HC-2026 Digital Logic Fundamentals	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office. 2.Start own business in web development and software development and Hardware . 3.Develop different web and windows based applications.	i) To communicate technical information both orally and in writing. ii) Apply the knowledge gained in core courses to a broad range of advanced topics in computer.
	3	GE 2B: BCA-HG- 2026: Introduction to Bio-Informatics	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office.	i) To communicate technical information both orally and in writing. ii) Apply the knowledge gained in core courses to a broad range of advanced topics in computer.

<b>Semester 3</b>	1	C5: BCA-HC-3016 Software Engineering	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office. 2.Start own business in web development and software development and Hardware . 3.Develop different web and windows based applications	i) To communicate technical information both orally and in writing. ii) Apply the knowledge gained in core courses to a broad range of advanced topics in computer.
	2	C6: BCA-HC-3026 Data Structure and Algorithms	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office. 2.Start own business in web development and software development and Hardware . 3.Develop different web and windows based applications	i) To communicate technical information both orally and in writing. ii) Apply the knowledge gained in core courses to a broad range of advanced topics in computer.
	3	C7: BCA-HC-3036 Database Management System	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office. 2.Start own business in web development and software development and Hardware . 3.Develop different web and windows based applications	i) To communicate technical information both orally and in writing. ii) Apply the knowledge gained in core courses to a broad range of advanced topics in computer.
	4	SEC-1A: BCA-SE-3014: Web Technology	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office. 2.Start own business in web development and software development and Hardware . 3.Develop different web and windows based applications	i) To communicate technical information both orally and in writing. ii) Apply the knowledge gained in core courses to a broad range of advanced topics in computer.
	5	GE 3A: BCA-HG-3016: Introduction to Indian History	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office.	i) To communicate technical information both orally and in writing. ii) Apply the knowledge gained in core courses to a broad range of advanced topics in History.

<b>Semester 4</b>	1	C8: BCA-HC-4016 Computer Organization and Architecture	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office 2. Develop different web and windows based applications	i) To communicate technical information both orally and in writing. ii) Apply the knowledge gained in core courses to a broad range of advanced topics in computer.
	2	C9: BCA-HC-4026 Mathematics-II	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office.	i) To communicate technical information both orally and in writing. ii) Apply the knowledge gained in core courses to a broad range of advanced topics in mathematics
	3	C10: BCA-HC-4036 Object Oriented Programming in C++	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office 2. Develop different web and windows based applications	i) To communicate technical information both orally and in writing. ii) Apply the knowledge gained in core courses to a broad range of advanced topics in computer.
	4	SEC-2C: BCA-SE-4034: Advanced Web Technology	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office 2. Develop different web and windows based applications	i) To communicate technical information both orally and in writing. ii) Apply the knowledge gained in core courses to a broad range of advanced topics in computer.
	5	GE 4B: BCA-HG-4026:Information Security and Cyber Laws	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office 2. Develop different web and windows based applications	i) To communicate technical information both orally and in writing. ii) Apply the knowledge gained in core courses to a broad range of advanced topics in computer.

<b>Semester 5</b>	1	C11: BCA-HC-5016 Java Programming	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office 2. Develop different web and windows based applications	i) To communicate technical information both orally and in writing. ii) Apply the knowledge gained in core courses to a broad range of advanced topics in computer.
	2	C12: BCA-HC-5026 Operating System	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office 2. Develop different web and windows based applications	i) To communicate technical information both orally and in writing. ii) Apply the knowledge gained in core courses to a broad range of advanced topics in computer.
	3	DSE-2C: BCA-HE-5046: Programming in Python	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office 2. Develop different web and windows based applications	i) To communicate technical information both orally and in writing. ii) Apply the knowledge gained in core courses to a broad range of advanced topics in computer.
	4	DSE-1: BCA-HE-5016: Project Work / Dissertation	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office 2. Develop different web and windows based applications	i) To communicate technical information both orally and in writing. ii) Apply the knowledge gained in core courses to a broad range of advanced topics in computer.
<b>Semester 6</b>	1	C13: BCA-HC-6016 System Administration using Linux	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office 2. Develop different web and windows based applications	i) To communicate technical information both orally and in writing. ii) Apply the knowledge gained in core courses to a broad range of advanced topics in computer.
	2	C14: BCA-HC-6026 Computer Networks	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office	i) To communicate technical information both orally and in writing.
	3	DSE-3C: BCA-HE-6036: Multimedia and Application	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office	i) To communicate technical information both orally and in writing.
	4	DSE-4B: BCA-HE-6066: Artificial Intelligence	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office	i) To communicate technical information both orally and in writing.

## **TDC (Computer Application):**

### **Program Outcomes:**

1. Students are eligible to apply for jobs in various companies, industries, banks, Govt office.
2. Start own business in web development and software development and Hardware.
3. Develop different web and windows-based applications.
4. Students can also pursue the career of computer operators.

### **PROGRAMME SPECIFIC OUTCOMES:**

The completion of the Computer Application Programme shall enable a student to:

- i) To communicate technical information both orally and in writing.
- ii) Apply the knowledge gained in core courses to a broad range of advanced topics in computer science, to learn and develop sophisticated technical products independently.
- iii) To design, implement, and evaluate computer-based system, process, component, or program to meet desired needs by critical understanding, analysis and synthesis
- iv) Identify applications of Computer Science in other fields in the real world to enhance the career prospects
- v) Realize the requirement of lifelong learning through continued education and research.
- vi) Use the concepts of best practices and standards to develop user interactive and abstract application
- vii) Understand the professional, ethical, legal, security, social issues and responsibilities.

### **Program Objectives:**

Upon successful completion of a TDC program with Computer Application, students will be able to:

1. Demonstrate proficiency in problem-solving techniques using the computer.
2. Demonstrate proficiency in at least one high-level programming language and one operating system.
3. Demonstrate proficiency in the analysis of complex problems and the synthesis of solutions to

those problems.

4. Demonstrate comprehension of modern software engineering principles.

5. Demonstrate a breadth and depth of knowledge in latest Information Technology tools and Techniques

	SL NO	CORE SUBJECT	PROGRAM OUTCOME	SPECIFIC OUTCOME
Semester 1	1	Fundamentals of Computer Applications (TCA-RC-1016)	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office. 2.Students can also pursue the career of computer operators.	i) To communicate technical information both orally and in writing. ii) Apply the knowledge gained in core courses to a broad range of advanced topics in computer science, to learn and develop sophisticated technical products independently.
	2	ENG-AE-1014	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office.	i) To communicate technical information both orally and in writing.
Semester 2	1	Introduction to Programming in C (TCA-RC-2016)	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office. 2.Students can also pursue the career of computer operators.	i) To communicate technical information both orally and in writing. ii) Apply the knowledge gained in core courses to a broad range of advanced topics in computer science, to learn and develop sophisticated technical products independently.
	2	ENV-AE-2014	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office.	i) To communicate technical information both orally and in writing.
Semester 3	1	Operating System (TCA-RC-3016)	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office. 2.Students can also pursue the career of computer operators.	i) To communicate technical information both orally and in writing. ii) Apply the knowledge gained in core courses to a broad range of advanced topics in computer science, to learn and develop sophisticated technical products independently.



	2	Multimedia Applications (TCA-SE-3014)	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office. 2.Students can also pursue the career of computer operators.	i) To communicate technical information both orally and in writing. ii) Apply the knowledge gained in core courses to a broad range of advanced topics in computer science, to learn and develop sophisticated technical products independently.
Semester 4	1	Introduction to Database Management System (TCA-RC-4016)	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office. 2.Students can also pursue the career of computer operators.	i) To communicate technical information both orally and in writing. ii) Apply the knowledge gained in core courses to a broad range of advanced topics in computer science, to learn and develop sophisticated technical products independently.
	2	ICT Hardware (TCA-SE-4024)	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office. 2.Students can also pursue the career of computer operators.	i) To communicate technical information both orally and in writing. ii) Apply the knowledge gained in core courses to a broad range of advanced topics in computer science, to learn and develop sophisticated technical products independently.
Semester 5	1	Web Technology (TCA-SE-5014)	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office. 2.Students can also pursue the career of computer operators.	i) To communicate technical information both orally and in writing. ii) Apply the knowledge gained in core courses to a broad range of advanced topics in computer science, to learn and develop sophisticated technical products independently.
	2	Project Work / Dissertation (TCA-RE-5016)	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office. 2.Students can also pursue the career of computer operators.	i) To communicate technical information both orally and in writing. ii) Apply the knowledge gained in core courses to a broad range of advanced topics in computer science, to learn and develop sophisticated technical products independently.

<b>Semester 6</b>	1	Cyber Law (TCA-SE-6024)	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office. 2.Students can also pursue the career of computer operators.	i) To communicate technical information both orally and in writing. ii) Apply the knowledge gained in core courses to a broad range of advanced topics in computer science, to learn and develop sophisticated technical products independently.
	2	Computer Networks (TCA-RE-6026)	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office. 2.Students can also pursue the career of computer operators.	i) To communicate technical information both orally and in writing. ii) Apply the knowledge gained in core courses to a broad range of advanced topics in computer science, to learn and develop sophisticated technical products independently.

## PGDCA

### Program Outcomes:

- 1.Students are eligible to apply for jobs in various multinational companies, industries, banks.
- 2.They can start their own business in web development and software development.
- 3.Students are able to use their knowledge to develop different web and windows-based applications.
- 4.Students can create database, websites and applications for their clients.
- 5.Students can also pursue the career of computer operators.
- 6.Students can also become network administrators.

### Program Specific Outcomes:

The goals of the computer science department are to prepare students for graduate training in some specialized area of computer science and applications, to prepare students for jobs in industry, business or government, and to provide support courses for students in technology, mathematics and other fields requiring computing skills.

	SL NO	CORE SUBJECT	PROGRAM OUTCOME	SPECIFIC OUTCOME
Semester 1	1	ICT Hardware	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office. 2.Students can also pursue the career of computer operators.	i) To communicate technical information both orally and in writing. ii) Apply the knowledge gained in core courses to a broad range of advanced topics in computer science, to learn and develop sophisticated technical products independently.
	2	Programming in C	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office. 2.Students can also pursue the career of computer operators.	i) To communicate technical information both orally and in writing. ii) Apply the knowledge gained in core courses to a broad range of advanced topics in computer science, to learn and develop sophisticated technical products independently.
	3	Overview of Operating System	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office. 2.Students can also pursue the career of computer operators.	i) To communicate technical information both orally and in writing. ii) Apply the knowledge gained in core courses to a broad range of advanced topics in computer science, to learn and develop sophisticated technical products independently.
	4	Introduction to Office Automation	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office. 2.Students can also pursue the career of computer operators.	i) To communicate technical information both orally and in writing. ii) Apply the knowledge gained in core courses to a broad range of advanced topics in computer science, to learn and develop sophisticated technical products independently.

	5	Database Management System	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office. 2.Students can also pursue the career of computer operators.	i) To communicate technical information both orally and in writing. ii) Apply the knowledge gained in core courses to a broad range of advanced topics in computer science, to learn and develop sophisticated technical products independently.
<b>Semester 2</b>	1	Data Structure through C language	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office. 2.Students can also pursue the career of computer operators.	i) To communicate technical information both orally and in writing. ii) Apply the knowledge gained in core courses to a broad range of advanced topics in computer science, to learn and develop sophisticated technical products independently.
	2	Internet and Web Technology	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office. 2.Students can also pursue the career of computer operators.	i) To communicate technical information both orally and in writing. ii) Apply the knowledge gained in core courses to a broad range of advanced topics in computer science, to learn and develop sophisticated technical products independently.
	3	GUI Application Programming	1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office. 2.Students can also pursue the career of computer operators.	i) To communicate technical information both orally and in writing. ii) Apply the knowledge gained in core courses to a broad range of advanced topics in computer science, to learn and develop sophisticated technical products independently.

4	Computer Oriented Numerical Methods	<p>1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office.</p> <p>2.Students can also pursue the career of computer operators.</p>	<p>i) To communicate technical information both orally and in writing.</p> <p>ii) Apply the knowledge gained in core courses to a broad range of advanced topics in computer science, to learn and develop sophisticated technical products independently.</p>
5	Computer Graphics	<p>1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office.</p> <p>2.Students can also pursue the career of computer operators.</p>	<p>i) To communicate technical information both orally and in writing.</p>
6	Object Oriented Programming with C++	<p>1.Students are eligible to apply for jobs in various companies, industries, banks, Govt office.</p> <p>2.Students can also pursue the career of computer operators.</p>	<p>i) To communicate technical information both orally and in writing.</p>