BCA SCHEME JULY 23

Program	Course Code	Course Name	Credit	Sem	Theory/ Practical	Internal Marks	External Marks
BCA	23OBC101	Computational Thinking and Fundamentals of IT	3	1	Theory	30	70
BCA	23OBC102	Foundations of Computer Programming	4	1	Theory	30	70
BCA	23OBC103	Mathematical Foundations of Computer Scienc	3	1	Theory	30	70
BCA	23OBC104	Professional English Skill	3	1	Theory	30	70
		General Elective - 1					
BCA	23OBC105A	Principles and Practices of Management	3	1	Theory	30	70
BCA	23OBC105B	Introduction to Business Accounting	3	1	Theory	30	70
BCA	23OBC106	C Programming Laboratory	2	1	Practical	30	70
BCA	23OBC107	Digital Productivity Tools for Moden Workplaces	2	1	Practical	30	70
BCA	23OBC108	Seminar - 1	1	1			100
BCA	23OBC109	General Proficiency/NCC/Sports/Yoga/ Healthy Living and Fitness	1	1			100
Total Credit			**22**				

Program	Course Code	Course Name	Credit	Sem	Theory/ Practical	Internal Marks	External Marks
BCA	23OBC201	Data Structures and File Organization	4	2	Theory	30	70
BCA	23OBC202	Introduction to Object-Oriented Programming	3	2	Theory	30	70
BCA	23OBC203	Introduction to Operating Systems	3	2	Theory	30	70
BCA	23OBC204	Discrete Mathematics	3	2	Theory	30	70
		General Elective - 2					
BCA	23OBC205A	Indian Culture	2	2	Theory	30	70
BCA	23OBC205B	Fine and Performing Arts	2	2	Theory	30	70
BCA	23OBC206	Indian Constitution	0	2	Theory	30	70
BCA	23OBC207	Environmental Science	2	2	Theory	30	70
BCA	23OBC208	Data Structures Laboratory	2	2	Practical	30	70
BCA	23OBC209	Object-Oriented Programming Laboratory	2	2	Practical	30	70
BCA	23OBC210	General Proficiency/NCC/Sports/Yoga/ Seminar/Science of Happiness	1	2			100
Total Credit			**22**				

Program	Course Code	Course Name	Credit	Sem	Theory/ Practical	Internal Marks	External Marks
BCA	23OBC301	Web Application Development	3	3	Theory	30	70
BCA	23OBC302	Introductions to Database Management Systems	3	3	Theory	30	70
BCA	23OBC303	Digital Logic Design	3	3	Theory	30	70
BCA	23OBC304	Python Programming	3	3	Theory	30	70
		Discipline-Specific Elective - 1					
BCA	23OBC305A	Probability and Statistics	3	3	Theory	30	70
BCA	23OBC305B	R Programming	3	3	Theory	30	70
BCA	23OBC305C	Principles of Programming Languages	3	3	Theory	30	70
	23OBC306	Skills for Career Success - 1	1	3	Theory	30	70
BCA	23OBC307	Database Management Systems Laboratory	2	3	Practical	30	70
BCA	23OBC308	Web Application Development Laboratory	2	3	Practical	30	70
BCA	23OBC309	Mini Project - 1	2	3			100
Total Credit			**22**				

Program	Course Code	Course Name	Credit	Sem	Theory/ Practical	Internal Marks	External Marks
BCA	23OBC401	Introduction to Design and Analysis of Algorithms	3	4	Theory	30	70
BCA	23OBC402	Introduction to Software Engineering	3	4	Theory	30	70
BCA	23OBC403	Computer Organization	3	4	Theory	30	70
BCA	23OBC404	Data Communications and Computer Networks	3	4	Theory	30	70
		Discipline-Specific Elective - 2					
BCA	23OBC405A	Big Data Analytics	3	4	Theory	30	70
BCA	23OBC405B	Introduction to UNIX	3	4	Theory	30	70
BCA	23OBC405C	Management Information Systems	3	4	Theory	30	70
BCA	23OBC406	Skills for Career Success - 2	1	4	Theory	30	70
BCA	23OBC407	Design and Analysis of Algorithms Laboratory	2	4	Practical	30	70
BCA	23OBC408	Data Communications and Computer Networks Laboratory	2	4	Practical	30	70
BCA	23OBC409	Mini Project - 2	2	4			100
Total Credit			**22**				

Program	Course Code	Course Name	Credit	Sem	Theory/ Practical	Internal Marks	External Marks
BCA	23OBC501	Introduction to Java	3	5	Theory	30	70
BCA	23OBC502	Introduction to Artificial Intelligence	3	5	Theory	30	70
BCA	23OBC503	Introduction to Microcontrollers	3	5	Theory	30	70
		General Elective - 3					
BCA	23OBC504A	Community Engagement and Social Responsibility	3	5	Theory	30	70
BCA	23OBC504B	Gardening and Horticulture	3	5	Theory	30	70
		Discipline-Specific Elective - 3					
BCA	23OBC505A	UI-UX Design Fundamentals	2	5	Theory	30	70
BCA	23OBC505B	Object-Oriented Analysis and Design	2	5	Theory	30	70
BCA	23OBC505C	Introduction to .NET Programming	2	5	Theory	30	70
BCA	23OBC506	Skills for Career Success - 3	1	5	Theory	30	70
BCA	23OBC507	Artificial Intelligence Laboratory	2	5	Practical	30	70
	23OBC508	Java Programming Laboratory	2	5	Practical	30	70
BCA	23OBC509	Mini Project - 3	3	5			100
Total Credit			**22**				

Program	Course Code	Course Name	Credit	Sem	Theory/ Practical	Internal Marks	External Marks
BCA	23OBC601	Introduction to Machine Learning	4	6	Theory	30	70
BCA	23OBC602	Introduction to Mobile Application Development	3	6	Theory	30	70
		Discipline-Specific Elective - 4					
BCA	23OBC603A	Cryptography	3	6	Theory	30	70
BCA	23OBC603B	Network Security	3	6	Theory	30	70
BCA	23OBC603C	Cybersecurity	3	6	Theory	30	70
		Discipline-Specific Elective - 5					
BCA	23OBC604A	Computer Graphics	3	6	Theory	30	70
BCA	23OBC604B	Mobile Communication	3	6	Theory	30	70
BCA	23OBC604C	University-Approved MOOC or Certification	3	6			
BCA	23OBC605	Mobile Application Development Laboratory	2	6	Practical	30	70
BCA	23OBC606	Machine Learning Laboratory	2	6	Practical	30	70
BCA	23OBC607	Capstone Project	5	6			100
Total Credit			**22**				

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Centre for Distance and Online Education

Bachelor of Computer Applications

First-Year Computer Applications: Building a Strong Foundation for Future Tech Leaders

The first year of a Computer Applications program provides a well-rounded introduction to the world of technology, blending programming, mathematics, business fundamentals, and IT skills. This foundational year focuses on hands-on learning, logical thinking, and problem-solving to equip students with the essential skills needed for a successful career in technology.

Students develop computational thinking and programming expertise, learning how to break down complex problems and write efficient code. They explore data structures, file organization, and object-oriented programming, gaining insights into software development and system design. A deeper understanding of how operating systems function helps them optimize performance and resource management.

A strong mathematical foundation enhances analytical skills, covering concepts like logic, set theory, probability, and graph theory. These skills are essential for algorithms, data science, and decision-making in computing applications.

Beyond technical knowledge, students build business and professional skills to prepare for industry roles. They gain an understanding of management principles, teamwork, leadership, and decision-making, along with insights into financial concepts and business accounting. Effective communication is also emphasized, helping students improve their writing, presentation, and interpersonal skills—critical for success in any professional environment.

To enhance workplace efficiency, students learn to use modern digital tools for collaboration, productivity, and organization. These tools help streamline tasks and improve workflow, ensuring adaptability in today's fast-paced, tech-driven workspaces.

Why This Matters?

This first-year curriculum strikes a balance between technical expertise, analytical thinking, and professional development. By engaging in hands-on projects, coding assignments, and problem-solving exercises, students build confidence in their ability to tackle real-world challenges. With a strong foundation in computing and business principles, they are well-prepared for careers in software development, IT consulting, data management, and business analytics, ready to innovate and adapt in an evolving digital landscape.

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Bachelor of Computer Applications

Second-Year Computer Applications: Expanding Skills for the Digital Age

The second year of a Computer Applications program builds on foundational knowledge and introduces students to advanced concepts in software development, data management, networking, and analytics. With a strong focus on hands-on learning, problem-solving, and real-world applications, students develop the technical and analytical skills required for careers in IT, software engineering, and data science.

Students gain expertise in web application development, learning to create dynamic websites and interactive applications using modern frameworks and technologies. Database management systems introduce concepts of data storage, retrieval, and security, essential for handling large-scale applications. Python and R programming enhance data processing and analysis skills, widely used in AI, machine learning, and business intelligence. A strong mathematical foundation in probability and statistics helps in making data-driven decisions.

A deep dive into digital logic design and computer organization provides insights into how computer hardware and software interact, forming the basis for system architecture. Principles of programming languages explore different paradigms, helping students understand language design and application. Design and analysis of algorithms sharpens problem-solving abilities by teaching efficient coding techniques for complex problems.

With the rise of big data, students are introduced to big data analytics, where they learn to process and analyze massive datasets for valuable insights. Data communication and computer networks cover essential networking principles, preparing students for roles in cybersecurity and IT infrastructure. Exposure to UNIX operating systems develops practical skills in system administration and scripting.

The program emphasizes software engineering principles, guiding students in software design, testing, and project management to build scalable and reliable applications. Management Information Systems bridge the gap between technology and business, showing how IT solutions support decision-making in organizations.

Practical learning is reinforced through laboratories in databases, web development, networking, and algorithm design, ensuring students gain real-world coding experience. By working on hands-on projects, they apply their theoretical knowledge to solve real industry challenges.

Why This Matters?

This year enhances students' ability to develop software, manage data, optimize networks, and analyze big data, making them job-ready for roles in software development, data analytics, cybersecurity, and IT consulting. With a blend of programming, problem-solving, and system management, students gain the confidence to innovate in an ever-evolving tech landscape.

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Centre for Distance and Online Education

Bachelor of Computer Applications

Third-Year Computer Applications: Advanced Skills for a Tech-Driven Future

The third year of a Computer Applications program prepares students for cutting-edge technologies and industry demands. With a strong focus on software development, artificial intelligence, cybersecurity, and mobile applications, students gain the skills needed to build secure, intelligent, and user-friendly solutions.

Students deepen their programming expertise with Java, mastering object-oriented programming and software development. They also explore object-oriented design, learning how to create scalable and efficient software architectures. UI/UX design fundamentals ensure they can build intuitive and engaging digital experiences, essential for modern applications.

As the world moves towards intelligent systems, students are introduced to artificial intelligence and machine learning, where they learn to develop smart applications that can analyse data, recognize patterns, and make decisions. Hands-on learning is reinforced through dedicated AI and machine learning labs, providing practical exposure to these transformative technologies.

With the rise of mobile computing, students gain expertise in mobile application development, creating feature-rich applications for smartphones and tablets. The mobile application development lab allows them to work on real-world projects, preparing them for careers in app development.

In an era of increasing cyber threats, courses in cryptography, network security, and cybersecurity equip students with techniques to protect data, secure networks, and defend against cyberattacks. These skills are essential for roles in IT security, ethical hacking, and digital forensics.

A deep dive into computer graphics introduces students to visual computing, covering topics like 3D modeling, animation, and graphical simulations, which are widely used in gaming, multimedia, and virtual reality. Understanding mobile communication helps students grasp the fundamentals of wireless technologies, an essential aspect of modern connectivity.

Practical learning is at the heart of this curriculum, with dedicated laboratories in Java, AI, machine learning, and mobile application development, allowing students to apply their knowledge in real-world scenarios.

Why This Matters?

This year empowers students with advanced programming skills, AI expertise, cybersecurity knowledge, and mobile development capabilities, making them job-ready for roles in software engineering, AI development, cybersecurity, mobile app development, and UI/UX design. With a focus on hands-on projects, innovation, and real-world problem-solving, students graduate with the skills and confidence to thrive in the ever-evolving tech industry.