

Bachelor in Computer Applications

Program Objectives:

The Program Objectives (POs) of a Bachelor in Computer Applications (BCA) typically intends to prepare students for professional careers and further studies. The main objectives are

1. Foundational Knowledge

To equip students with a strong foundation in computer science, programming, mathematics, and information technology to enable them to develop computational solutions.

2. Professional Skills Development

To train students in the latest tools, technologies, and programming languages to prepare them for careers in software development, system administration, and IT services.

3. Problem Solving and Analytical Thinking

To foster the ability to analyze complex problems and develop logical and efficient solutions using appropriate algorithms and data structures.

4. Ethical and Social Responsibility

to instil awareness of ethical, legal, and social issues in the computing profession, encouraging responsible and sustainable use of technology.

5. Effective Communication and Teamwork

To develop interpersonal and communication skills to enable students to work effectively in teams and in diverse professional environments.

6. Entrepreneurial and Innovative Thinking

To encourage creativity and innovation, enabling students to conceive new ideas, design novel solutions, and potentially start entrepreneurial ventures.

7. Lifelong Learning and Higher Education

To prepare students for lifelong learning and advancement in computing disciplines, including pursuit of higher education such as MCA, MBA, or other professional courses.

8. Industry Readiness and Employability

To align curriculum with industry needs to enhance students' employability and readiness to work in various IT roles such as software developers, testers, analysts, and support professionals.



Program Outcomes (Pos)

After the completion of the program students will be able to

- PO 1** – Apply knowledge of computing fundamentals, mathematics, and domain-specific knowledge for the conceptualization of computing models from defined problems.
- PO 2** – Identify, formulate, and analyze complex problems using principles of mathematics, computing, and domain knowledge to reach substantiated conclusions.
- PO 3** – Use modern tools, techniques, and computing resources for modeling and solving real-world problems, with an understanding of their limitations.
- PO 4** – Apply innovation and entrepreneurship practices to create and manage IT-based solutions or businesses.
- PO 5** – Communicate effectively with the technical community and society at large by being able to write effective reports, design documentation, and make effective presentations.
- PO 6** – Understand professional, ethical, legal, security, and social issues and responsibilities, and understand the impact of professional computing solutions in societal and environmental contexts and demonstrate knowledge of sustainable development.
- PO 7** – Function effectively as an individual and as a member or leader in diverse teams and multidisciplinary settings, and manage projects in a professional environment.
- PO 8** – Equipped with skill to recognize administration and computing philosophy with computing acquaintance to supervise projects in multidisciplinary environments.

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Program Specific Outcomes (PSOs)

BCA with Specialization in Artificial Intelligence and Machine Learning

1. **PSO 1 – AI/ML Proficiency:** Apply fundamental and advanced principles of Artificial Intelligence and Machine Learning to analyze data, design intelligent systems, and develop predictive models across various domains.
2. **PSO 2 – Practical Implementation Skills:** Build and deploy real-world applications using AI/ML frameworks and tools such as Python, TensorFlow, Keras, Scikit-learn, and other relevant libraries.
3. **PSO 3 – Data-Driven Decision Making:** Demonstrate the ability to preprocess, analyze, and interpret data using statistical and machine learning techniques to make informed, data-driven decisions.
4. **PSO 4 – Algorithmic Thinking for Intelligent Systems:** Design and evaluate machine learning algorithms, including supervised, unsupervised, and reinforcement learning techniques, to solve classification, regression, and clustering problems.
5. **PSO 5 – Research and Innovation:** Engage in innovation, research, and project development in AI/ML to address real-life challenges in sectors such as healthcare, agriculture, finance, education, and smart cities.
6. **PSO 6 – Ethical AI Practice:** Understand and apply ethical principles and societal considerations related to artificial intelligence, such as bias, fairness, transparency, and accountability in intelligent systems.

BCA with Specialization in Data Science

1. **PSO 1 – Data Science Foundations:** Apply core concepts of statistics, mathematics, and computer science to extract meaningful insights from structured and unstructured data.
2. **PSO 2 – Data Analytics and Visualization:** Use data analysis techniques and visualization tools to analyze large datasets and present data-driven insights effectively.
3. **PSO 3 – Machine Learning Applications:** Design and implement machine learning models to solve classification, regression, and clustering problems using tools such as Scikit-learn, TensorFlow, or similar frameworks.
4. **PSO 4 – Big Data Technologies:** Work with big data platforms and tools (e.g., Hadoop, Spark, Hive) to manage, process, and analyze large-scale datasets efficiently.
5. **PSO 5 – Business and Domain Knowledge:** Apply data science methods to real-world problems in domains such as business, healthcare, finance, education, and social media, supporting strategic decision-making.
6. **PSO 6 – Ethical Data Practice:** Demonstrate awareness of legal, ethical, and privacy issues related to data collection, storage, analysis, and sharing, adhering to data governance and responsible AI practices.

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