

# STRATEGIC PLAN

## (2018-2023)



**Department of Computer Applications**  
**J.C. BOSE UNIVERSITY OF SCIENCE AND TECHNOLOGY,**  
**YMCA, FARIDABAD**

*(Formerly YMCA University of Science and Technology)*

NAAC 'A' Grade accredited State University

Sector-06, Delhi Mathura Road, Faridabad -121006 (Haryana)

## **About the Department**

The Computer applications Department aims to make a place at both national and international level by producing high quality ethically rich computer application engineers conversant with the state-of-the-art technology with the ability to adapt the upcoming challenges in information technologies and their applications to cater to the ever changing industrial and societal needs. It is committed to provide a supportive, friendly and challenging learning and research environment. Moreover, it endeavours to establish itself as a centre of excellence in teaching and research to produce skilled human resource for sustainable nation's growth and having technological impact on the people's life. Part of our mission is to enable the students to acquire globally competence through developing their problem solving skills and exposure to latest developments in area of computer application and information technologies.

The department offers BCA and Master of Computer Applications programs. The programs are designed to provide a core Computer applications foundation, as well as concentration courses that will equip learners with the necessary technical and research skills needed in industry and academia. The department has a team of passionate academic staff with a wide range of research interests. The faculty members of the Computer Applications Department have very strong academic credentials. The department has 05 doctorates degrees from outstanding institutions and they are very active in research. The faculty has commitment and dedication for teaching and providing a good learning environment for the student growth. Keeping this in the view the department regularly organizes various seminars, conferences and workshop etc., with the funding from various agencies for the benefit of faculties and students in the area of computer applications.

## **Vision and Mission of the Department**

### **Vision**

*The department aims to make a place at both national and international level by producing high quality ethically rich computer application engineers and IT professionals conversant with the state-of-the-art technology with the ability to adapt the upcoming challenges in information technologies and their applications to cater to the ever changing industrial and societal needs. It endeavours to establish itself as a centre of excellence in teaching and research to produce skilled human resource for sustainable nation's growth and having technological impact on the people's life.*

### **Mission**

- *To provide the future leaders in the area of computer application and information technology through the development of human intellectual potential to its fullest extent.*
- *To enable the students to acquire globally competence through developing their problem solving skills and exposure to latest developments in area of computer application and information technologies.*
- *To educate the students about their professional, social and ethical responsibilities.*



## **Strategic Goals**

The department aims

- To extend seats in the MCA programme
- To start some UG programmes.
- To start integrated MCA 5years programme(Data Science)
- To start Ph.D programme in Computer Science.
- To improve the infrastructure and have at least 50% smart classrooms in the department
- To interact more with Industries & peer Department or Institutes.
- To develop a few centres of excellence.
- To motivate the faculty for upgrading themselves and get consultancy projects and research projects
- To motivate students of PG for participation in Research activities and for publication of quality works.

## **Program Educational Objectives (PEOs)**

- 1) To solidify foundation of mathematics, computer science and problem solving methodology for effective implementation in the area of software development.
- 2) To impart advance knowledge about various sub-domains related to the field of computer science and applications.
- 3) To acquaint students about principles of system analysis, design, development and project management.
- 4) To inculcate effective communication skills combined with professional & ethical attitude.

The programme has well defined Programme Outcomes and Programme Specific Outcomes as given below:

## **Programme Outcomes (POs) of BCA and MCA**

Graduates from the department will be able to:

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

2. **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions:** Design solutions for computer engineering problems related to CE and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the computer engineering practice.
7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological changes in computer engineering.

### **Program Specific Outcomes (PSO) MCA**

**PSO 1:** To develop industrial strength with skills to utilize modern computer technologies and models for developing customized solutions for small to big size Enterprises.

**PSO 2:** To prepare computer professionals who can identify and give cost effective software solutions which will not only contribute in the sustainable growth of the nation but also impact the lives of downtrodden and economically less developed citizens

### **Program Specific Outcomes (PSO) BCA**

**PSO 1:** To produce graduate technical human resource for higher study and software industry.

**PSO 2:** To prepare computer professionals who can program and give cost effective software solutions.

### **Program Specific Outcomes (PSO) BCA Data Science**

**PSO 1:** To produce graduate technical human resource for higher study and software industry.

**PSO 2:** To prepare computer professionals who can program and give cost effective software solutions for Industries dealing in the domain of Data Science.

### **SWOC Analysis**

#### **Strength**

- Experienced and qualified Faculty members.
- Department has all its faculty members having Ph.D. degree.
- Excellent faculty retention ratio.
- Faculty having membership of various professional bodies (CSI,IETE,IEEE etc.)
- Updated curriculum as per the industry and AICTE requirements.
- Departmental library
- Good placement ratio
- Well Equipped Laboratories with Broadband Internet facility and state of the art Software
- Strong University's alumni association called MOB

#### **Weakness**

- Less inter-departmental activities
- Less industry academia collaboration
- Research lacks in addressing relevant needs of society
- Few students pursue higher education

### **Opportunities**

- Develop smart campus
- Attract students from other countries
- Increase value added courses for students in collaboration of Industry
- Increase consultancy and research projects
- Organize conferences at national and international level.
- Develop national and international or global partnerships

### **Challenges**

- Frequent changes in Education Policy
- Industry ready curriculum and implementation
- Students with different social and economic backgrounds

### **Action Plan**

- Adoption MCA programme duration and syllabus as per the guidelines by of AICTE
- Extension of number of seats in MCA (2018)
- Start BCA programme (2018)
- Modernization of existing laboratories(2019-20)
- Setting up of Centralised Computer Centre (2019)
- Organizing workshops and special lectures related to entrepreneurship for motivating students.
- Organizing workshops related to personality development for grooming students.
- Focusing on conducting more hands-on technical sessions for better learning experience.
- Set up of new laboratory for IoT projects (2020).
- Seats for foreign students in BCA (2021)
- Start of MCA integrated 5 years programme with specialization in Data Science from the session (2022)
- Converting almost 90% classrooms of the department to smart classrooms(2023).

- Introduction of more industry oriented courses in the curriculum( 2023)