



MANIPAL UNIVERSITY  
JAIPUR

# BCA

## Bachelor of Computer Applications

### Admission 2024-25

#### About the program

The Bachelor of Computer Applications (BCA) program at the Manipal University Jaipur aims to provide academic excellence with the most advanced curriculum and syllabus in the field of computer applications. It ensures to develop personnel who are academically competent and professionally motivated. The BCA course is favored by students who wish to make a career in the Information Technology (IT) field. The duration of the BCA course is 3 years, and it is divided into 6 semesters. The course is designed to be flexible and wide-ranging ensuring that the students have a firm grasp on the core fundamentals. Apart from regular BCA, department is also offering following specialization:

- Cyber Security
- Data Science



More about the Department  
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BCA Cyber Security specialization is intended to introduce students to security principles and practices with understanding, designing, operating, installing and mitigating vulnerabilities in cyber space. As a way of providing the students with an enriching exposure to the study of Cyber Security, the faculty is equipped with state-of-the-art laboratories and innovation facilities which allow students to develop a hands-on experience.

BCA Data Science specialization is created to meet the demands of the modern IT sector and technological advancements. The primary goal of this specialization is to close the knowledge gap between industry and academia by integrating pioneering technology into the curriculum. The curriculum includes more recent and advanced IT-related topics like Big Data Analytics, Machine Learning, Statistics, etc. with contemporary programming languages like Python, R Programming, etc.

#### Key Highlights of the Program

- Helps students to make their career in IT Industry.
- To prepare students to design, develop and implement software applications.
- Help students to learn latest programming languages, cutting edge technologies and tools to make the students ready for the IT Industry.
- Making students to be employed and capable of cross disciplinary collaboration in industry/government sector/higher education/research and development/ entrepreneurship.

#### Prominent Recruiters

- TCS
- Deloitte
- WIPRO
- Capgemini
- SAP LAB

#### Unique Research and Lab Facilities

Dedicated LAB with high end server, desktop computers, IoT Kits, High Speed Internet, Basic software, NetSim (academic version)

#### National and International Collaborations

- International University of Business Agriculture and Technology (IUBAT), Bangladesh
- Cyberops Infosec LLP

#### Career Opportunities

- Software Development
- Software Engineering
- Database Administration
- Database Programming
- Web Development
- Systems Administration
- Network Administration
- Information Technology

#### Placements Statistics

- Highest Package: 10 Lakhs p/a
- Average Package: 5 Lakhs p/a
- No of Offers Made: 35
- No of Recruiters Visited: 30



### The MUJ EDGE (Why MUJ)

- Best in-class infrastructure, including the state-of-the-art research facilities and a modern digital library
- NAAC A+, UGC Accredited Institution
- Best University Campus Award conferred by ASSOCHAM
- 3.5 Star rating for promoting Innovation and Start Ups in Campus
- Awarded 'IGBC Performance Challenge 2020 for Green Built environment- Excellence Award'
- Best University in Rajasthan Award 2020 in Eminent Engineers Award 2020 by Institution of Engineers (India), Rajasthan State Center, Jaipur

### Eligibility

The candidate must have passed 10+2 or A level or IB examination in any discipline with at least 50% marks in aggregate.

### Curriculum (Only Scheme)

First year (Common to BCA and specialization)

| Year | FIRST SEMESTER                  |   |    |   |   |    | SECOND SEMESTER                 |                                       |    |   |   |    |
|------|---------------------------------|---|----|---|---|----|---------------------------------|---------------------------------------|----|---|---|----|
|      | Course Code                     | Course Name                                 | L  | T | P | C  | Course Code                     | Course Name                           | L  | T | P | C  |
| I    | MA1107                          | Fundamentals of Mathematics                 | 3  | 1 | 0 | 4  | MA1208                          | Basic Statistics and Probability      | 3  | 1 | 0 | 4  |
|      | LN1108                          | Technical Communication                     | 2  | 0 | 0 | 2  | CA1201                          | Data Structures                       | 3  | 1 | 0 | 4  |
|      | CA1103                          | C Programming                               | 3  | 1 | 0 | 4  | CA1202                          | Database Management System            | 3  | 1 | 0 | 4  |
|      | CA1104                          | Fundamentals of Computers & Digital Systems | 3  | 1 | 0 | 4  | CA1203                          | Principle of Programming Languages    | 3  | 1 | 0 | 4  |
|      | CA1105                          | Introduction to Web Programming             | 3  | 1 | 0 | 4  | CA1204                          | Object-Oriented Programming using C++ | 3  | 1 | 0 | 4  |
|      | CA1130                          | C Programming Lab                           | 0  | 0 | 2 | 1  | CA1231                          | Database Management System Lab        | 0  | 0 | 2 | 1  |
|      | CA1132                          | Web Programming Lab                         | 0  | 0 | 2 | 1  | CA1232                          | Data Structures using C++ Lab         | 0  | 0 | 2 | 1  |
|      | CY1003                          | Environmental Science                       | 2  | 0 | 0 | 2  |                                 |                                       |    |   |   |    |
|      |                                 |   | 16 | 4 | 4 | 22 |                                 |                                       | 15 | 5 | 4 | 22 |
|      | Total Contact Hours (L + T + P) |   | 24 |   |   |    | Total Contact Hours (L + T + P) |                                       | 24 |   |   |    |

### Fee structure

| Tuition fee (p.a.) | Registration Fee (One Time) | Caution Deposit Refundable (One Time) | Total Course Fees (including Caution Deposit) |
|--------------------|-----------------------------|---------------------------------------|---|
| 1,48,000           | 10,000                      | 10,000                                | 4,64,000                                      |

(International - USD, Total Fee for 3 Years - 11,550 )

### Scholarships

- TMA Pai Merit Scholarships
- Rajasthan Merit Scholarships
- Financial Assistance for Sibling(s)
- Scholarship for "Differently-abled" Students
- Scholarships for wards of Martyrs of Defence Personnel / Para Military Forces
- Scholarships for the wards of Single Mother & Orphan Child
- Scholarships for Sports Persons
- Scholarships for students of Higher Semesters

### BCA (Second/Third Year)

| II                              | THIRD SEMESTER |   |    |   |                                      | FOURTH SEMESTER |            |                                   |    |   |    |    |
|---------------------------------|----------------|---|----|---|--------------------------------------|-----------------|------------|-----------------------------------|----|---|----|----|
|                                 | CA2101         | Computer Organization and Architecture      | 3  | 1 | 0                                    | 4               | CA2202     | Python Programming                | 3  | 1 | 0  | 4  |
|                                 | CA2104         | Data Communication & Protocols              | 3  | 1 | 0                                    | 4               | CA2203     | Software Engineering              | 3  | 1 | 0  | 4  |
|                                 | CA2105         | Java Programming                            | 3  | 1 | 0                                    | 4               | CA2204     | Data Mining & Visualization       | 3  | 1 | 0  | 4  |
|                                 | CA2106         | Operating Systems                           | 3  | 1 | 0                                    | 4               | CA2205     | Introduction to Network Security  | 3  | 1 | 0  | 4  |
|                                 | CA2107         | Artificial Intelligence for Problem Solving | 3  | 1 | 0                                    | 4               | XXXXXX     | Open Elective / MOOC              | 3  | 0 | 0  | 3  |
|                                 | CA2132         | Java Programming Lab                        | 0  | 0 | 2                                    | 1               | CA2231     | Python Programming Lab            | 0  | 0 | 2  | 1  |
|                                 | CA2133         | Operating System Lab                        | 0  | 0 | 2                                    | 1               | CA2232     | Data Mining and Visualization Lab | 0  | 0 | 2  | 1  |
|                                 |                |   |    |   |                                      |                 |            |                                   |    |   |    |    |
|                                 |                |   |    |   |                                      |                 |            |                                   |    |   |    |    |
|                                 |                | 15  | 5  | 4 | 22                                   |                 |            | 15                                | 4  | 4 | 21 |    |
| Total Contact Hours (L + T + P) |                | 24  |    |   | Total Contact Hours (L + T + P) + OE |                 | 23         |                                   |    |   |    |    |
| III                             | FIFTH SEMESTER |   |    |   |                                      | SIXTH SEMESTER  |            |                                   |    |   |    |    |
|                                 | CA3102         | Mobile Application Development              | 3  | 1 | 0                                    | 4               | CA3204     | Wireless Communication            | 3  | 1 | 0  | 4  |
|                                 | CA3105         | Cloud Computing & Applications              | 3  | 1 | 0                                    | 4               | CA3205     | Unix and Shell Programming        | 3  | 1 | 0  | 4  |
|                                 | CA3106         | Machine Learning                            | 3  | 1 | 0                                    | 4               | CA3206     | Big Data                          | 3  | 1 | 0  | 4  |
|                                 | CA31XX         | Program Elective-I                          | 3  | 0 | 0                                    | 3               | CA32X<br>X | Program Elective-II               | 3  | 0 | 0  | 3  |
|                                 | CA3131         | Mobile Application Development Lab          | 0  | 0 | 2                                    | 1               | CA3231     | Unix and Shell Programming Lab    | 0  | 0 | 2  | 1  |
|                                 | CA3132         | Machine Learning Lab                        | 0  | 0 | 2                                    | 1               | CA3270     | Major Project                     | 0  | 0 | 4  | 2  |
|                                 | CA3170         | Minor Project                               | 0  | 0 | 2                                    | 1               |            |                                   |    |   |    |    |
|                                 | CA3110         | Aptitude and Technical Development          | 1  | 0 | 0                                    | 1               |            |                                   |    |   |    |    |
|                                 |                |   | 13 | 3 | 6                                    | 19              |            |                                   | 12 | 3 | 6  | 18 |
| Total Contact Hours (L + T + P) |                | 22  |    |   | Total Contact Hours (L + T + P)      |                 | 21         |                                   |    |   |    |    |

| Program Elective - I |                           |   |   |   |   | Program Elective - II |                                      |   |   |   |   |
|----------------------|---------------------------|---|---|---|---|-----------------------|--------------------------------------|---|---|---|---|
| Course Code          | Course Name               | L | T | P | C | Course Code           | Course Name                          | L | T | P | C |
| CA3143               | INTERNET OF THINGS        | 3 | 0 | 0 | 3 | CA3240                | SOFTWARE TESTING & QUALITY ASSURANCE | 3 | 0 | 0 | 3 |
| CA3144               | CRYPTOGRAPHY FUNDAMENTALS | 3 | 0 | 0 | 3 | CA3241                | CYBER SECURITY AND FORENSICS         | 3 | 0 | 0 | 3 |
| CA3145               | REAL TIME SYSTEMS         | 3 | 0 | 0 | 3 | CA3242                | DISTRIBUTED SYSTEM                   | 3 | 0 | 0 | 3 |
|                      |                           |   |   |   |   |                       |                                      |   |   |   |   |



**Bachelor of Computer Applications (BCA) (Specialization - Cyber Security) Scheme 2024**

| II                              | THIRD SEMESTER |  |    |   |                                      | FOURTH SEMESTER |            |                                  |    |   |    |    |
|---------------------------------|----------------|--|----|---|--------------------------------------|-----------------|------------|----------------------------------|----|---|----|----|
|                                 | CA2101         | Computer Organization and Architecture | 3  | 1 | 0                                    | 4               | CA2202     | Python Programming               | 3  | 1 | 0  | 4  |
|                                 | CA2104         | Data Communication & Protocols         | 3  | 1 | 0                                    | 4               | CA2203     | Software Engineering             | 3  | 1 | 0  | 4  |
|                                 | CA2105         | Java Programming                       | 3  | 1 | 0                                    | 4               | CA2204     | Data Mining & Visualization      | 3  | 1 | 0  | 4  |
|                                 | CA2106         | Operating Systems                      | 3  | 1 | 0                                    | 4               | CA2205     | Introduction to Network Security | 3  | 1 | 0  | 4  |
|                                 | CA2108         | Introduction of Cyber Security         | 3  | 1 | 0                                    | 4               | XXXXX<br>X | Open Elective / MOOC             | 3  | 0 | 0  | 3  |
|                                 | CA2132         | Java Programming Lab                   | 0  | 0 | 2                                    | 1               | CA2231     | Python Programming Lab           | 0  | 0 | 2  | 1  |
|                                 | CA2133         | Operating System Lab                   | 0  | 0 | 2                                    | 1               | CA2233     | Network Security Lab             | 0  | 0 | 2  | 1  |
|                                 |                |  | 15 | 5 | 4                                    | 22              |            |                                  | 15 | 4 | 4  | 21 |
| Total Contact Hours (L + T + P) |                | 24                                     |    |   | Total Contact Hours (L + T + P) + OE |                 | 23         |                                  |    |   |    |    |
| III                             | FIFTH SEMESTER |  |    |   |                                      | SIXTH SEMESTER  |            |                                  |    |   |    |    |
|                                 | CA3102         | Mobile Application Development         | 3  | 1 | 0                                    | 4               | CA3204     | Wireless Communication           | 3  | 1 | 0  | 4  |
|                                 | CA3106         | Machine Learning                       | 3  | 1 | 0                                    | 4               | CA3205     | Unix and Shell Programming       | 3  | 1 | 0  | 4  |
|                                 | CA3107         | Information Security and Systems       | 3  | 1 | 0                                    | 4               | CA3207     | Cyber Physical System            | 3  | 1 | 0  | 4  |
|                                 | CA31XX         | Program Elective-I                     | 3  | 0 | 0                                    | 3               | CA32XX     | Program Elective-II              | 3  | 0 | 0  | 3  |
|                                 | CA3131         | Mobile Application Development Lab     | 0  | 0 | 2                                    | 1               | CA3231     | Unix and Shell Programming Lab   | 0  | 0 | 2  | 1  |
|                                 | CA3132         | Machine Learning Lab                   | 0  | 0 | 2                                    | 1               | CA3270     | Major Project                    | 0  | 0 | 4  | 2  |
|                                 | CA3170         | Minor Project                          | 0  | 0 | 2                                    | 1               |            |                                  |    |   |    |    |
|                                 | CA3110         | Aptitude and Technical Development     | 1  | 0 | 0                                    | 1               |            |                                  |    |   |    |    |
|                                 |                | 13                                     | 3  | 6 | 19                                   |                 |            | 12                               | 3  | 6 | 18 |    |
| Total Contact Hours (L + T + P) |                | 22                                     |    |   | Total Contact Hours (L + T + P)      |                 | 21         |                                  |    |   |    |    |

| Program Elective - I |                    |   |   |   |   | Program Elective - II |                   |   |   |   |   |
|----------------------|--------------------|---|---|---|---|-----------------------|-------------------|---|---|---|---|
| Course Code          | Course Name        | L | T | P | C | Course Code           | Course Name       | L | T | P | C |
| CA3143               | INTERNET OF THINGS | 3 | 0 | 0 | 3 | CA3243                | ETHICAL HACKING   | 3 | 0 | 0 | 3 |
| CA3146               | CYBER LAW          | 3 | 0 | 0 | 3 | CA3244                | WIRELESS SECURITY | 3 | 0 | 0 | 3 |
| CA3147               | CLOUD SECURITY     | 3 | 0 | 0 | 3 | CA3245                | CYBER FORENSICS   | 3 | 0 | 0 | 3 |
|                      |                    |   |   |   |   |                       |                   |   |   |   |   |



| II                              | THIRD SEMESTER |  |    |   |   |                                      | FOURTH SEMESTER |                                   |    |   |   |    |
|---------------------------------|----------------|--|----|---|---|--------------------------------------|-----------------|-----------------------------------|----|---|---|----|
|                                 | CA2101         | Computer Organization and Architecture | 3  | 1 | 0 | 4                                    | CA2202          | Python Programming                | 3  | 1 | 0 | 4  |
|                                 | CA2104         | Data Communication & Protocols         | 3  | 1 | 0 | 4                                    | CA2203          | Software Engineering              | 3  | 1 | 0 | 4  |
|                                 | CA2105         | Java Programming                       | 3  | 1 | 0 | 4                                    | CA2204          | Data Mining & Visualization       | 3  | 1 | 0 | 4  |
|                                 | CA2106         | Operating Systems                      | 3  | 1 | 0 | 4                                    | CA2206          | Intelligent Systems               | 3  | 1 | 0 | 4  |
|                                 | CA2109         | Introduction to Data Science           | 3  | 1 | 0 | 4                                    | XXXXXX          | Open Elective / MOOC              | 3  | 0 | 0 | 3  |
|                                 | CA2132         | Java Programming Lab                   | 0  | 0 | 2 | 1                                    | CA2231          | Python Programming Lab            | 0  | 0 | 2 | 1  |
|                                 | CA2133         | Operating System Lab                   | 0  | 0 | 2 | 1                                    | CA2232          | Data Mining and Visualization Lab | 0  | 0 | 2 | 1  |
|                                 |                |  | 15 | 5 | 4 | 22                                   |                 |                                   | 15 | 4 | 4 | 21 |
| Total Contact Hours (L + T + P) |                | 24                                     |    |   |   | Total Contact Hours (L + T + P) + OE |                 | 23                                |    |   |   |    |
| II                              | THIRD SEMESTER |  |    |   |   |                                      | FOURTH SEMESTER |                                   |    |   |   |    |
|                                 | CA2101         | Computer Organization and Architecture | 3  | 1 | 0 | 4                                    | CA2202          | Python Programming                | 3  | 1 | 0 | 4  |
|                                 | CA2104         | Data Communication & Protocols         | 3  | 1 | 0 | 4                                    | CA2203          | Software Engineering              | 3  | 1 | 0 | 4  |
|                                 | CA2105         | Java Programming                       | 3  | 1 | 0 | 4                                    | CA2204          | Data Mining & Visualization       | 3  | 1 | 0 | 4  |
|                                 | CA2106         | Operating Systems                      | 3  | 1 | 0 | 4                                    | CA2206          | Intelligent Systems               | 3  | 1 | 0 | 4  |
|                                 | CA2109         | Introduction to Data Science           | 3  | 1 | 0 | 4                                    | XXXXXX          | Open Elective / MOOC              | 3  | 0 | 0 | 3  |
|                                 | CA2132         | Java Programming Lab                   | 0  | 0 | 2 | 1                                    | CA2231          | Python Programming Lab            | 0  | 0 | 2 | 1  |
|                                 | CA2133         | Operating System Lab                   | 0  | 0 | 2 | 1                                    | CA2232          | Data Mining and Visualization Lab | 0  | 0 | 2 | 1  |
|                                 |                |  | 15 | 5 | 4 | 22                                   |                 |                                   | 15 | 4 | 4 | 21 |
| Total Contact Hours (L + T + P) |                | 24                                     |    |   |   | Total Contact Hours (L + T + P) + OE |                 | 23                                |    |   |   |    |

| Program Elective - I |                             |   |   |   |   | Program Elective - II |                       |   |   |   |   |
|----------------------|-----------------------------|---|---|---|---|-----------------------|-----------------------|---|---|---|---|
| Course Code          | Course Name                 | L | T | P | C | Course Code           | Course Name           | L | T | P | C |
| CA3143               | CA3143 INTERNET OF THINGS   | 3 | 0 | 0 | 3 | CA3246                | ROBOTICS & AI         | 3 | 0 | 0 | 3 |
| CA3148               | NATURAL LANGUAGE PROCESSING | 3 | 0 | 0 | 3 | CA3247                | EMBEDDED SYSTEMS      | 3 | 0 | 0 | 3 |
| CA3149               | COMPUTER VISION             | 3 | 0 | 0 | 3 | CA3248                | STATISTICAL INFERENCE | 3 | 0 | 0 | 3 |
|                      |                             |   |   |   |   |                       |                       |   |   |   |   |

### Admission Process



Application form initiated through our website  
**[admissions.jaipur.manipal.edu](https://admissions.jaipur.manipal.edu)**



Applicants must submit a completed application form with relevant documents within the due date.



Our counsellors will guide candidates through the admission process, which is as per regulatory requirements.



Please visit the FAQ section on our website to know more about the admission process.

### Hostel Details

📧 [goodhostspaces.com](mailto:goodhostspaces.com) ☎ **08069122800**  
[info.jaipur@goodhostspaces.com](mailto:info.jaipur@goodhostspaces.com)

Please visit

<https://jaipur.manipal.edu/muj/life-at-muj/hostel-facility.html>

### Counsellor Contact Details

Please visit

<https://jaipur.manipal.edu/muj/admission/admission-team-contact-details.html>



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JAIPUR

(University Under Section 2(f) of the UGC Act)

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