

**TECNIA INSTITUTE OF ADVANCED STUDIES**  
**Grade "A"**

**Department of Information Communication and Technology (ICT)**

**Bachelor of Computer Application (BCA)**

**GGSIU w. e. f. as on 2024-25 Onwards**

**Course per-semester**

**FIRST SEMESTER**

| <b>Code No.</b> | <b>Paper</b>                                 | <b>Course</b>  | <b>L</b> | <b>T/P</b> | <b>Credits</b> |
|-----------------|--|--|----------|------------|----------------|
| BCA 101T        | Programming for Problem Solving using C      | Core Course Theory                                     | 4        | -          | 4              |
| BCA 103T        | Fundamental of Information Technology        | Core Course Theory                                     | 4        | -          | 4              |
| BCA 105T#       | Web Technologies#                            | Core Course Theory                                     | 4        | -          | 4              |
| BCA 107T        | Mathematical Foundation for Computer Science | Core Course Theory                                     | 4        | -          | 4              |
| BCA 101P        | Programming for Problem Solving using C Lab  | Core Course Practical                                  | -        | 4          | '              |
| BCA 103P        | Fundamental of Information Technology Lab    | Core Course Practical                                  | -        | 4          | 2              |
| BCA 141T        | Writing Skills                               | Ability Enhancement Course                             | 3        | -          | 3              |
| BCA 105P#       | Web Technologies Lab                         | Skill Enhancement Course                               | -        | 2          | 1              |
| BCA 191T*       | Understanding India*(NUES)                   | Value Added Course                                     | 2        | -          | 2              |
| BCA 181T+       | Bridge Course In Mathematics + (NUES)        | Mandatory for Students from Non Mathematics background | 2        | -          | -              |

## SECOND SEMESTER

| Code No.  | Paper                                      | Course                     | L | T/P | Credits |
|-----------|--|----------------------------|---|-----|---------|
| BCA 102T# | Database Management System (DBMS)          | Core Course Theory         | 4 | -   | 4       |
| BCA 104T  | Object Oriented Programming using Java     | Core Course Theory         | 4 | -   | 4       |
| BCA 106T  | Data Structures and algorithms             | Core Course Theory         | 4 | -   | 4       |
| BCA 108T  | Software Engineering                       | Core Course Theory         | 4 | -   | 4       |
| BCA 102P# | DBMS Lab                                   | Core Course Practical      | - | 2   | 1       |
| BCA 104P  | Object Oriented Programming using Java Lab | Core Course Practical      | - | 4   | 2       |
| BCA 106P  | Data Structures and algorithms Lab         | Core Course Practical      | - | 2   | 1       |
| BCA 108P  | Software Engineering Lab                   | Core Course Practical      | - | 2   | 1       |
| BCA 142T  | Soft Skills                                | Ability Enhancement Course | 3 | -   | 3       |
| BCA 192T  | Environment Studies                        | Value Added Course         | 2 | -   | 2       |

## THIRD SEMESTER

| Code No.  | Paper  | Course Type              | L | T/P | Credits |
|-----------|--|--------------------------|---|-----|---------|
| BCA 201T  | Python Programming                                 | Core Course Theory       | 4 | --  | 4       |
| BCA 203T# | Dynamic Web Designing                              | Core Course Theory       | 4 | --  | 4       |
| BCA 205T  | Computer Organization and Architecture             | Core Course Theory       | 4 | --  | 4       |
| BCA 207T  | Discrete Mathematics                               | Core Course Theory       | 4 | -   | 4       |
| BCA 201P  | Python Programming Lab                             | Core Course Practical    | - | 4   | 2       |
| BCA 203P# | Dynamic Web Designing Lab                          | Core Course Practical    | - | 2   | 1       |
| BCA 205P  | Computer Organization and Architecture Lab         | Core Course Practical    | - | 2   | 1       |
| BCA 261*  | Vocational Course*                                 | Skill Enhancement Course | 4 | -   | 4       |
| BCA 221T  | Principles of Management & Organizational Behavior | GE-1                     | 3 | -   | 3       |
| BCA 291T* | Human Values and Ethics***(NUES)                   | Value Added Course       | 2 | -   | 2       |

#### FOURTH SEMESTER

| Code No. | Paper   | Course Type                | L | T/P | Credits |
|----------|---|----------------------------|---|-----|---------|
| BCA 202T | Operating Systems                                       | Core Course Theory         | 4 | --  | 4       |
| BCA 204T | Software Testing  | Core Course Theory         | 4 | --  | 4       |
| BCA 202P | Operating Systems Lab                                   | Core Course Practical      | - | 2   | 1       |
| BCA 204P | Software Testing Lab                                    | Core Course Practical      | - | 2   | 1       |
| BCA 232  | Introduction to Logic & Critical Thinking               | Ability Enhancement Course | - | 4   | 2       |
| BCA 234* | Health & Wellness, Yoga Education and Sports & Fitness* | Skill Enhancement Course   | - | 4   | 2       |
| BCA 212T | Introduction to Data Science                            | PCE                        | 4 | -   | 4       |
| BCA 212P | Data Science Lab  | PCE                        | - | 4   | 2       |
| BCA 224T | Principles of Accounting                                | GE-2                       | 3 | -   | 3       |

#### FIFTH SEMESTER

| Code No. | Paper   | Course Type           | L | T/P | Credits |
|----------|---|-----------------------|---|-----|---------|
| BCA 301T | Computer Networks   | Core Course Theory    | 4 | --  | 4       |
| BCA 303T | Artificial Intelligence                                   | Core Course Theory    | 4 | --  | 4       |
| BCA 301P | Computer Networks Lab                                     | Core Course Practical | - | 2   | 1       |
| BCA 303P | Artificial Intelligence Lab                               | Core Course Practical | - | 4   | 2       |
| BCA307T  | NetworkSecurity   | PCE                   | 4 | -   | 4       |
| BCA 307P | Network Security Lab                                      | PCE                   | - | 4   | 2       |
| BCA 311* | Summer Training*  | SI                    | 0 | 0   | 4       |
| BCA313T  | Introduction to Management & Entrepreneurship Development | GE-3                  | 3 | 0   | 3       |

## SIXTH SEMESTER

| Code No.  | Paper  | Course Type              | L | T/P | Credits |
|-----------|--|--------------------------|---|-----|---------|
| BCA 302T  | Distributed systems and Cloud Computing                          | Core Course Theory       | 4 | -   | 4       |
| BCA 304T  | Machine Learning   | Core Course Theory       | 4 | -   | 4       |
| BCA306T   | Software Project Management                                      | Core Course Theory       | 4 | -   | 4       |
| BCA302P   | Distributed systems and Cloud Computing Lab                      | Core Course Practical    | 0 | 2   | 1       |
| BCA306P   | Software Project Management Lab                                  | Core Course Practical    | 0 | 2   | 1       |
| BCA312T   | Data Visualization & Analytics                                   | Programme Core Electives | 4 | -   | 4       |
| BCA 312P  | Data Visualization & Analytics Lab                               | Programme Core Electives | - | 4   | 2       |
| BCA 320   | Minor Project  | PRJ                      | 0 | 14  | 6       |
| BCA 304P  | Machine Learning Lab   | Skill Enhancement Course | 0 | 2   | 1       |
| BCA 374** | NSS / NCC / Cultural Clubs / Technical Society / Technical Clubs | Value Added Course       | 0 | 0   | 2       |

## SEVENTH SEMESTER

| Code No.  | Paper                        | Course Type              | L | T/P | Credits |
|-----------|------------------------------|--------------------------|---|-----|---------|
| BCA 401T  | E-Commerce                   | Core Course Theory       | 4 | -   | 4       |
| BCA 403T  | Internet of Things (IOT)     | Core Course Theory       | 4 | -   | 4       |
| BCA 401P  | E-Commerce Lab               | Core Course Practical    | - | 2   | 1       |
| BCA 403P  | Internet Of Things (IOT) lab | Core Course Practical    | - | 2   | 1       |
| BCA 405   | Major Project-1              | Major Project            | 0 | 12  | 6       |
| BCA 461** | Vocational Course            | Skill Enhancement Course | 0 | 0   | 2       |

\*Major Project :The student shall do the Major project in any emerging technology.

## EIGHTH SEMESTER

| Code No. | Paper            | Course Type   | L  | T/P | Credits |
|----------|------------------|---------------|----|-----|---------|
| BCA 402  | Major Project- 2 | Major Project | 20 | 0   | 10      |