## **School of Engineering & Technology**

Department of Computer Application

## **BCA**

#### **AY 2023-24 onwards**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Theory/**  **Practical** | **Sl. No** | **Course Type** | **Course Code** | **Course Name** | **Hours per week** | | | **Credit** | **Mark** | |
| L | T | P | C | CA | FA |
| T | 1 | **DSCC** | **BCA23101T** | Introduction to Programming | **3** | **0** | **0** | **3** | 40 | 60 |
| T | 2 | **DSCC** | **BCA23102T** | Digital Logic | **2** | **1** | **0** | **3** | 40 | 60 |
| T | 3 | **DSCC** | **BCA23103T** | Introduction to Web Technology | **2** | **1** | **0** | **3** | 40 | 60 |
| T | 4 | **MDC** |  | MDC-1 | 3 | 0 | 0 | 3 | 40 | 60 |
| T | 5 | **AEC** |  | AECC – I | 2 | 0 | 0 | 2 | 40 | 60 |
| T | 6 | **SEC** |  | SEC – I | 3 | 0 | 0 | 3 | 40 | 60 |
| T | 7 | **VAC** |  | VAC – I | 2 | 0 | 0 | 2 | 40 | 60 |
| P | 8 | **DSCC** | **BCA23101P** | Programming Lab ( C Programming) | **0** | **0** | **3** | **1.5** | 40 | 60 |
| P | 9 | **DSCC** | **BCA23103P** | Programming Lab ( Web Technology) | **0** | **0** | **3** | **1.5** | 40 | 60 |
| **Total** | | | | | **17** | **2** | **6** | **22** | **360** | **540** |

**Semester II**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Theory/**  **Practical** | **Sl. No** | **Course Type** | **Course Code** | **Course Name** | **Hours per week** | | | **Credit** | **Mark** | |
| L | T | P | C | CA | FA |
| T | 1 | **DSCC** | **BCA23105T** | Data structure and algorithms | **3** | **0** | **0** | **3** | 40 | 60 |
| T | 2 | **DSCC** | **BCA23106T** | Software Engineering | **2** | **1** | **0** | **3** | 40 | 60 |
| T | 3 | **DSCC** | **BCA23107T** | Fundamentals of Data Science | **2** | **1** | **0** | **3** | 40 | 60 |
| T | 4 | **MDC** |  | MDC-II | 3 | 0 | 0 | 3 | 40 | 60 |
| T | 5 | **AEC** |  | AECC –II | 2 | 0 | 0 | 2 | 40 | 60 |
| T | 6 | **SEC** |  | SEC – II | 3 | 0 | 0 | 3 | 40 | 60 |
| T | 7 | **VAC** |  | VAC – II | 2 | 0 | 0 | 2 | 40 | 60 |
| P | 6 | **DSCC** | **BCA23105P** | Programming Lab-II (Data Structure) | **0** | **0** | **6** | **3** | 40 | 60 |
| **Total** | | | | | **17** | **2** | **8** | **22** | **320** | **480** |

* **Exit option with CERTIFICATION in Computer Applications** after successfully undertaking Vocational Training of 8 weeks (4 credits).

**Semester III**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Theory/**  **Practical** | **Sl. No** | **Course Type** | **Course Code** | **Course Name** | **Hours per week** | | | **Credit** | **Mark** | |
| L | T | P | C | CA | FA |
| T | 1 | **DSCC** | **BCA23201T** | Object Oriented Programming | **3** | **0** | **0** | **3** | 40 | 60 |
| T | 2 | **DSCC** | **BCA23202T** | Database Management System | **3** | **0** | **0** | **3** | 40 | 60 |
| T | 4 | DSCC | BCA23203T | Artificial Intelligence | 3 | 1 | 0 | 4 | 40 | 60 |
| **T** |  | **AECC** |  | AECC – III | 2 | 0 | 0 | 2 | 40 | 60 |
| **T** | **5** | **SEC** |  | SEC – III | 3 | 0 | 0 | 3 | 40 | 60 |
| **T** | 4 | **MDC** |  | MDC-III | 3 | 0 | 0 | 3 | 40 | 60 |
| P | 8 | **DSCC** | **BCA23204P** | Programming Lab-III (Java and DBMS) | **0** | **0** | **4** | **2** | 40 | 60 |
| **Total** | | | | | **17** | **1** | 4 | 20 | **280** | **420** |

**Semester IV**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Theory/**  **Practical** | **Sl. No** | **Course Type** | **Course Code** | **Course Name** | **Hours per week** | | | **Credit** | **Mark** | |
| L | T | P | C | CA | FA |
| T | 1 | **DSCC** | **BCA23205T** | Operating Systems | **3** | **1** | **0** | **4** | 40 | 60 |
| T | 2 | **DSCC** | **BCA23206T** | Computer Architecture | **3** | **1** | **0** | **4** | 40 | 60 |
| T | 3 | **DSE** | **BCA23207T**  **BCA23208T** | * Advanced Web Technology * Machine Learning | **3** | **1** | **0** | **4** | 40 | 60 |
| T | 4 | **DSCC** | **BCA23209T** | Mathematics | **3** | **0** | **0** | **3** | 40 | 60 |
| T | 5 | **DSCC** | **BCA23210T** | Mobile Application Development | **3** | **0** | **0** | **3** | 40 | 60 |
| P | 6 | **DSCC** | **BCA23211P** | Programming Lab-IV ( OS Lab and Web Tech -I/Machine Learning-I) | **0** | **0** | **4** | **2** | 40 | 60 |
| **Total** | | | | | **15** | **3** | 4 | 20 | **240** | **360** |

**Exit option with DIPLOMA in Computer Applications** after successfully undertaking Vocational Training of 8 weeks (4 credits).

**Semester V**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Theory/**  **Practical** | **Sl. No** | **Course Type** | **Course Code** | **Course Name** | **Hours per week** | | | **Credit** | **Mark** | |
| L | T | P | C | CA | FA |
| T | 1 | **DSCC** | **BCA23301T** | Computer Network | **3** | **1** | **0** | **4** | 40 | 60 |
| T | 2 | **DSCC** | **BCA23302T** | Design and analysis of Algorithms | **3** | **1** | **0** | **4** | 40 | 60 |
| T | 3 | **DSE** | **BCA23303T**  **BCA23304T** | * Web Performance Optimization * Deep Learning | **3** | **1** | **0** | **4** | 40 | 60 |
| T | 4 | **AECC** |  | AECC-IV | **3** | **0** | **0** | **3** | 40 | 60 |
| P | 5 | **VAC** |  | VAC-III | **0** | **0** | **6** | **3** | 40 | 60 |
| P | 6 | **DSCC** | **BCA23305P** | Programming Lab-V (Networking, Web Tech-II/ Machine Learning-II) | **0** | **0** | **4** | **2** | 40 | 60 |
| **Total** | | | | | **15** | **3** | 10 | 20 | **240** | **360** |

**Semester VI**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Theory/**  **Practical** | **Sl. No** | **Course Type** | **Course Code** | **Course Name** | **Hours per week** | | | **Credit** | **Mark** | |
| L | T | P | C | CA | FA |
| T | 1 | DSCC | **BCA23306T** | Graph Theory | **3** | **1** | **0** | **4** | 40 | 60 |
| T | 2 | DSCC | **BCA23307T** | Distributed Systems | **3** | **1** | **0** | **4** | 40 | 60 |
| T | 3 | **DSE** | **BCA23308T**  **BCA23309T** | * Web Services and Security * Data Mining | **3** | **1** | **0** | **4** | 40 | 60 |
| P | 4 | DSCC | **BCA23310P** | Programming Lab-VI (Web security / Data mining) | **0** | **0** | **4** | **2** | 40 | 60 |
| P | 5 | DSCC | **BCA23311R** | System Dev Project | **0** | **0** | **0** | **6** | 40 | 60 |
| **Total** | | | | | **9** | **3** | 4 | 20 | **200** | **300** |

**Exit option with Bachelor in Computer Applications** with specialization in Data Science / Cyber security.

**Semester VII**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Theory/**  **Practical** | **Sl. No** | **Course Type** | **Course Code** | **Course Name** | **Hours per week** | | | **Credit** | **Mark** | |
| L | T | P | C | CA | FA |
| T | 1 | DSCC | **BCA23401T** | Internet of Things | **3** | **1** | **0** | **4** | 40 | 60 |
| T | 2 | DSCC | **BCA23402T** | Mobile Computing | **3** | **1** | **0** | **4** | 40 | 60 |
| T | 3 | DSE | **BCA23403T**  **BCA23404T** | * Cloud Computing * Big data Analytics | **3** | **1** | **0** | **4** | 40 | 60 |
| T | 4 | DSCC | **BCA23405P** | Programming Lab-VII (Cloud Computing / Big data Analytics computing ) | **0** | **0** | **4** | **2** | 40 | 60 |
| P |  | VAC | **BCA23406R** | Summer Internship | **-** | **-** | **-** | **2** | 40 | 60 |
| P | 5 | DSCC | **BCA23407R** | Major Project | **0** | **0** | **0** | **4** | 40 | 60 |
| **Total** | | | | | **9** | **3** | 4 | 20 | **240** | **360** |

**Semester VIII**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Theory/**  **Practical** | **Sl. No** | **Course Type** | **Course Code** | **Course Name** | **Hours per week** | | | **Credit** | **Mark** | |
| L | T | P | C | CA | FA |
| T | 1 | DSCC | **BCA23408T** | Mobile Application Development | **3** | **1** | **0** | **4** | 40 | 60 |
| T | 2 | DSCC | **BCA23409T** | Remote Sensing and GIS | **3** | **1** | **0** | **4** | 40 | 60 |
| T | 3 | DSE | **BCA23410T BCA23411T** | * Cyber Crime and Laws and malware Analysis * Time Series Data Analysis | **3** | **1** | **0** | **4** | 40 | 60 |
| P | 4 | DSCC | **BCA23412P** | Programming Lab-VIII(Cyber Crime and Laws and malware Analysis /Time Series Data Analysis | **0** | **0** | **4** | **2** | 40 | 60 |
| P | 5 | DSCC | **BCA23413R** | Major Project | **-** | **-** | **-** | **6** | 40 | 60 |
| **Total** | | | | | **9** | **3** | 4 | 20 | **200** | **300** |

**Eligible for Bachelor in Computer Applications (BCA) (Hons.)** with specialization in Data Science / Cyber security