

**School of Computer Application**

**Syllabus and Scheme of**

**Bachelor of Computer Applications (BCA)**

**3 Years Full time program**

**Specialization- Artificial Intelligence & Machine Learning**

**(In Association with IBM)**

**Academic Program**

**July 2023-24**

JECRC University, Jaipur

Plot No. IS-2036 to IS-2039 Ramchandrapura Industrial Area Jaipur, Sitapura, Vidhani, Rajasthan 303905

**Total Credits for the Batch 2023-26= 132Credits**

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| --- | --- | --- | --- | --- | --- | --- |
| **Semester wise credit** | | | | | | **Credits** |
| **I** | **II** | **III** | **IV** | **V** | **VI** | **Total** |
| **22** | **24** | **24** | **25** | **21** | **16** | **132** |

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| **Semester – I** | | | | | | | |
| **S. No.** | **Code** | **Course Name** | **L**  **(Hr.)** | **T (Hr.)** | **P**  **(Hr.)** | **Credits** | **Type** |
| **1** | **BCA214A** | **Introduction to Python** | **4** | **0** | **0** | **4** | **S** |
| 2 | BCA302A | Fundamental of Computers & Programming in C | 4 | 0 | 0 | 3 | CORE |
| 4 | BCA114B | Database Management Systems | 3 | 1 | 0 | 4 | CORE |
| 5 | BCA118B | Database Management Systems Lab | 0 | 0 | 2 | 1 | CORE |
| 6 | BCA303A | Fundamental of Computers & Programming in C Lab | 0 | 0 | 2 | 1 | CORE |
| 7 | DCH001A | Environmental Studies | 4 | 0 | 0 | 4 | ID |
| 8 | DEN001A/DEN001B | Communication Skills/ Communication Skills Lab | 2 | 0 | 2 | 3 | ID |
| 9 | DIN001A | Culture Education-I | 2 | 0 | 0 | 2 | ID |
|  |  | **Total** | **19** | **1** | **8** | **22** |  |

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| **Semester – II** | | | | | | | |
| **S. No.** | **Course Code** | **Course Name** | **L**  **(Hr.)** | **T (Hr.)** | **P (Hr.)** | **Credits** | **Type** |
| **1** | **BCA215A** | **Data Visualization** | **3** | **0** | **0** | **3** | **S** |
| 2 | BCA126B | Object Oriented Programming Using C++ | 4 | 0 | 0 | 4 | CORE |
| 3 | BCA300A | Python Programming | 4 | 0 | 0 | 4 | CORE |
| 4 | BCA113B | Operating System | 3 | 0 | 2 | 4 | CORE |
| 5 | BCA121B | Software Testing | 0 | 0 | 2 | 1 | CORE |
| 6 | BCA130B | Project Lab Using C++ | 0 | 0 | 2 | 1 | CORE |
| 7 | BCA301A | Python Programming Lab | 0 | 0 | 2 | 1 | CORE |
| 8 | DIN002A | Culture Education-II | 2 | 0 | 0 | 2 | ID |
| 9 | DEN002A/DEN002B | Professional Skills/Professional Skills Lab | 2 | 0 | 2 | 3 | ID |
|  | **Total** | | **18** | **0** | **12** | **23** |  |

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| **Semester – III** | | | | | | |
| **Course Code** | **Course Name** | **L**  **(Hr.)** | **T (Hr.)** | **P**  **(Hr.)** | **Credits** | **Type** |
| BCA305A | Data Structures and Algorithms -I | 3 | 0 | 0 | 3 | CORE |
| **BCA216A** | **Text Analytics 101 and Rapid Development for AI (AI Services)** | **4** | **0** | **0** | **4** | **S** |
| BCA133B | Programming in JAVA | 4 | 0 | 0 | 4 | CORE |
| BCA306A | Data Structures and Algorithms -I Lab | 0 | 0 | 2 | 1 | CORE |
| BCA136B | Project Lab using JAVA | 0 | 0 | 2 | 1 | CORE |
| DMA051B | Mathematical Foundation | 3 | 1 | 0 | 4 | F |
| DEN003A | Life Skills - 1 (Personality Development) | 1 | 0 | 2 | 2 | F |
| DIN003A | Value Education and Ethics -1 | 1 | 0 | 2 | 2 | F |
|  | Open Elective | 3 | 0 | 0 | 3 | GE |
|  | **Total** | **19** | **1** | **10** | **24** |  |

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| **Semester – IV** | | | | | | |
| **Course Code** | **Course Name** | **L**  **(Hr.)** | **T (Hr.)** | **P (Hr.)** | **Credits** | **Type** |
| BCA135A | Computer Network | 4 | 0 | 0 | 4 | CORE |
| **BCA254A** | **Predictive Modelling with IBM SPSS Modeler** | **3** | **0** | **0** | **3** | **S** |
| BCA307A | Data Structures and Algorithms – II | 4 | 0 | 0 | 4 | CORE |
| **BCA252A** | **IBM Watson Studio** | **3** | **0** | **0** | **3** | **S** |
| **BCA217A** | **Cognitive Decision System for Managers** | **3** | **0** | **0** | **3** | **S** |
| BCA177A | Project Management Lab | 0 | 0 | 2 | 1 | CORE |
| BCA308A | Data Structures and Algorithms - II Lab | 0 | 0 | 2 | 1 | CORE |
| DMA003A | Life Skills - 2 (Aptitude) | 1 | 0 | 2 | 2 | F |
| DIN004A | Value Education and Ethics -2 | 1 | 0 | 0 | 1 | F |
| Open Elective | | 3 | 0 | 0 | 3 | GE |
| **Total** | | **23** | **0** | **6** | **25** |  |

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| **Semester – V** | | | | | | | |
| **S. No.** | **Course Code** | **Course Name** | **L (Hr.)** | **T (Hr.)** | **P(Hr.)** | **Credits** | **Type** |
| **1** | **BCA218A** | **Machine Learning with Python** | **3** | **0** | **0** | **3** | **S** |
| 2 | BCA317A | Information Security Essentials | 4 | 0 | 0 | 4 | CORE |
| **3** | **BCA219A** | **Deep Learning and Machine Learning** | **2** | **0** | **0** | **2** | **S** |
| 4 | BCA318A | Information Security Lab | 0 | 0 | 2 | 1 | CORE |
| 5 | BCA147B | Major Project | 0 | 0 | 2 | 1 | CORE |
| 6 | Departmental Elective –II | | 3 | 0 | 0 | 3 | E |
| 7 | Departmental Elective –III | | 3 | 0 | 1 | 4 | E |
| 8 | Open Elective | | 3 | 0 | 0 | 3 | GE |
|  |  | **Total** | **17** | **0** | **7** | **21** |  |

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| **Semester – VI** | | | | | |
| **Course Code** | **Course Name** | **L**  **(Hr.)** | **P**  **(Hr.)** | **Credits** | **Type** |
| **BCA165A** | **Industrial Training/Internship** | **0** | **0** | **16** | **CORE** |