**JAYPEE INSTITUTE OF INFORMATION TECHNOLOGY
DEPARTMENT OF COMPUTER APPLICATIONS**

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| **Semester 2** |
|  |  |  |  | **Credit Structure** |  |  |  |
| **S. No.** | **Course Code** | **Course Discipline** | **Course Title** | **L** | **T** | **P** | **Credits** | **Contact Hours** |
| 1 | 25MSCXXXX | PCC | Computer Networks & Security | 3 | 0 | 1 | 4 | 5 |
| 2 | 25MSCXXXX | PCC | Database Systems & Advanced SQL | 3 | 0 | 1 | 4 | 5 |
| 3 | 25MSCXXXX | PCC | Software Engineering & DevOps | 3 | 0 | 1 | 4 | 5 |
| 4 | 25MSCXXXX | PCC | OOP's Programming with Java | 3 | 0 | 1 | 4 | 5 |
| 5 | 25MSCXXXX | PEC | Elective-II | 3 | 0 | 0 | 3 | 3 |
| 6 | 25MSCXXXX | HSC | HSC-I | 2 | 0 | 0 | 2 | 2 |
| Total credits |  |  |  |  |  |  | 21 | 25 |

**M.SC. COMPUTER SCIENCE**

**Course Curriculum**

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| **Semester 1** |
|  |  |  |  | **Credit Structure** |  |  |  |
| **S. No.** | **Course Code** | **Course Discipline** | **Course Title** | **L** | **T** | **P** | **Credits** | **Contact Hours** |
| 1 | 25M41CA111 | PCC | Data Structures and Basic Algorithms | 3 | 0 | 1 | 4 | 5 |
| 2 | 25MSCXXXX | PCC | Discrete Mathematics | 3 | 0 | 0 | 3 | 3 |
| 3 | 25M41CA112 | PCC | Operating Systems & System Programming | 3 | 0 | 1 | 4 | 5 |
| 4 | 25M41CA113 | PCC | Python Programming | 3 | 0 | 1 | 4 | 5 |
| 5 | 25M21CA111 | PEC | Elective-I | 3 | 0 | 0 | 3 | 3 |
| 6 | 25M21HS111 | SEC | Soft Skills | 2 | 0 | 0 | 2 | 2 |
| 7 | 25MSCXXXX | Qualifying | Bridge Course (C-Language) | 0 | 0 | 0 | 0 | 2 |
| Total credits |   |   |   |   |   |   | 20 | 25 |

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| **Semester 3** |
|  |  |  |  | **Credit Structure** |  |  |  |
| **S. No.** | **Course Code** | **Course Discipline** | **Course Title** | **L** | **T** | **P** | **Credits** | **Contact Hours** |
| 1 | 25MSCXXXX | PCC | Algorithm Design & Problem Solving Techniques | 3 | 0 | 1 | 4 | 5 |
| 2 | 25MSCXXXX | PCC | Web Technologies & Full Stack Development | 3 | 0 | 1 | 4 | 5 |
| 3 | 25MSCXXXX | PCC | Data Exploration and Visualization | 3 | 0 | 1 | 4 | 5 |
| 4 | 25MSCXXXX | PEC | Elective-III | 3 | 0 | 0 | 3 | 3 |
| 5 | 25MSCXXXX | PEC | Elective-IV  | 3 | 0 | 0 | 3 | 3 |
| 6 | 25MSCXXXX | OE | Open Elective | 3 | 0 | 1 | 4 | 5 |
| Total credits |   |   |   |   |   |   | 22 | 26 |

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| **Semester 4** |
|  |  |  |  | **Credit Structure** |  |  |  |
| **S. No.** | **Course Code** | **Course Discipline** | **Course Title** | **L** | **T** | **P** | **Credits** | **Contact Hours** |
| 1 | 25MSCXXXX | Dissertation/Major Project | Term Paper (5) | 0 | 0 | 5 | 5 | 5 |
| 2 | 25MSCXXXX | Dissertation (12) | 0 | 0 | 12 | 12 | 12 |
| Total credits |   |   |   |   |   |   | 17 | 17 |

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| **Sr. No.** | **Course Code & Definitions** | **Credit Distributions** |
| 1 | PCC: Professional Core Course | 43 |
| 2 | PEC: Professional Elective Course | 12 |
| 3 | SEC: Skill Enhancement Course | 2 |
| 4 | HSC: Humanities and Social Sciences Course | 2 |
| 5 | OE: Open Elective | 4 |
| 6 | Dissertation/ Major Project | 17 |
| **Total** |  | **80** |

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| **Elective-I** | **L-T-P** | **Credits** |
| Cloud Computing | 3-0-0 | 3 |
| AI Fundamentals | 3-0-0 | 3 |
| Computer Architecture | 3-0-0 | 3 |
| **Elective-II** | **L-T-P** | **Credits** |
| Machine Learning | 3-0-0 | 3 |
| Distributed Systems | 3-0-0 | 3 |
| **Elective-III** | **L-T-P** | **Credits** |
| Blockchain & IOT | 3-0-0 | 3 |
| NLP | 3-0-0 | 3 |
| Big Data Analytics | 3-0-0 | 3 |
| Theory of Computation | 3-0-0 | 3 |
| **Elective-IV** | **L-T-P** | **Credits** |
| Computer Graphics and Vision | 3-0-0 | 3 |
| Cybersecurity | 3-0-0 | 3 |
| Data Mining & Data Warehousing | 3-0-0 | 3 |
| Parallel and High Performance Computing | 3-0-0 | 3 |
|  |  |  |
| **Open Electives** | **L-T-P** | **Credits** |
| Mathematical and Statistical Foundations for Computation Intelligence | 3-0-0 | 4 |
| Quantum Computing | 3-0-0 | 4 |
| Speech Processing and Recognition | 3-0-0 | 4 |
| Edge and Federated Learning | 3-0-0 | 4 |