Integrated MCA

SEMESTER I
Cultural Education I
Communicative English
Language I
Mathematics Core I
Environmental Science and Sustainability
Computer Essentials
Problem Solving and Algorithmic Thinking
Problem Solving and Algorithmic Thinking Lab

SEMESTER II
Cultural Education II
Professional Communication
Language II
Mathematics Core II
Database Management System
Programming in C
Computer Organization
Database Management System Lab*
Programming in C Lab

SEMESTER III
Amrita Values Programme I
Life Skills I
Mathematics Core III
Data Structures and Algorithms
Object Oriented Programming using JAVA
Operating Systems
Principles of Management and Accounting
Data Structures and Algorithms Lab
Object Oriented Programming Lab using JAVA*

SEMESTER IV
Amrita Values Programme II
Life Skills II
Computer Networks
Advanced JAVA and J2EE
Web Technologies
Software Engineering
Open Elective
Advanced JAVA and J2EE Lab
Web Technologies Lab*
SEMESTER V

Life Skills III
Data Warehousing and Data Mining
Python Programming
Live-in-Labs@ / Elective I
Mobile Application Development*
Python Programming Lab
Comprehensive Technical Viva Voce
Minor Project

SEMESTER VI
C# and .NET Framework*
Cryptography and Cyber Security
Elective II
Professional Elective I
Major Project

SEMESTER VII
Design and Analysis of Algorithms
Elective III
Elective IV
Professional Elective II
Research Learning and Problem Formulation
Mathematics Core IV
Lab Elective I

SEMESTER VIII
Operations Research and Optimization Techniques
Machine Learning
Elective V
Computer Language Engineering
Professional Elective III
Research Seminar
Lab Elective II
Lab Elective III

SEMESTER IX
Elective VI
Elective VII
Management Elective
Lab Elective IV
Dissertation Phase I

SEMESTER X
Dissertation Phase II

MATHEMATICS CORES

Mathematical Foundation for Computer Science
Discrete Mathematics
Statistical and Numerical Methods
Algebra and Number Theory
Foundations of Applied Mathematics - Part I
Foundations of Applied Mathematics - Part II

PROFESSIONAL ELECTIVES

IoT Architectures and Programming
Advanced Software Engineering and Design Patterns
Advanced Data Mining and Applications
Cloud Computing
System Security
Architecture and Deployment of Secure and Scalable WAN
Introduction to Business Analytics and Visualization

ELECTIVE I, II

Artificial Intelligence
Client Server Computing
Embedded Systems
Enterprise Resource Planning Management
Knowledge Management
Microprocessor Systems
Multimedia and Graphics
Social and Professional Issues in Computing
Soft Computing
Systems and Network Administration
Computer Graphics

ELECTIVE III, IV, V, VI, VII (PG Level)

Big Data Analytics and Visualization
Bioinformatics
Digital Image Processing
Computational Intelligence
Computer Graphics and Visualization
Database Administration
Malware Analysis
Deep Learning
Advanced Operating Systems and Distributed Computing
Information Retrieval
Connected Internet of Things Devices
Cloud Security
LAN Switching and Advanced Routing
Network Security

Open-Source Systems
Semantic Web Technologies
Software Quality Assurance
Structure and Interpretation of Computer Programs
Complex Networks
AI/ML Applications for Cyber Security
Wireless Communication and Networks
AI for Drug Discovery and Target Validation
Social Media Analytics
Natural Language Processing
Software Testing
Software Defined Networks
Pattern Recognition
Blockchain Technologies
Cyber Forensics
Parallel Computing

LAB ELECTIVES I, II, III, IV
MEAN Stack Lab
R Programming Lab
MATLAB Programming Lab
High Performance Computing Lab
Natural Language Processing Lab
Cyber Security Lab
Deep Learning Lab
System Administration Lab
Network Administration Lab
Competitive Programming Lab
Network and Grid Simulation Lab
Bioinformatics Lab
Big Data Analytics Lab
Computer Graphics and Visualization Lab