



Maulana Azad National Institute of Technology
Bhopal – 462003

Scheme M.Tech. (Part Time) (w.e.f.: July-2025)
Computer Science and Engineering Department

M.Tech. in Advance Computing (Part Time)

First Semester:

| Subject Code | Subject | Periods Per Week | | | Total Credits |
|---|---------------------------------------|-------------------------------|---|---|---------------|
| | | L | T | P | |
| CS AC 1101 | Advanced Data Structures | 3 | - | - | 3 |
| CS AC 1102 | Architecture of Large Systems | 3 | - | - | 3 |
| CS AC 1151 - 59 | Department Elective-1 | 3 | - | - | 3 |
| CS AC 1104 | Lab-1(Core and Elective Subjects Lab) | - | - | 2 | 1 |
| CS AC 1106 | Seminar-I | - | - | 2 | 1 |
| CS AC 1107 | Project- I (Self Learning) | - | - | - | 2 |
| | Communication Skills (from NPTEL) | - | - | - | 0 |
| Total Hours:13 Total Cumulative Credits:13 | | Total Semester Credits | | | 13 |

Second Semester:

| Subject Code | Subject | Periods Per Week | | | Total Credits |
|--|--|-------------------------------|---|---|---------------|
| | | L | T | P | |
| CS AC 1201 | High Performance Computing | 3 | - | - | 3 |
| CS AC 1202 | Parallel Algorithms | 3 | - | - | 3 |
| CS AC 1251 - 59 | Department Elective-3 | 3 | - | - | 3 |
| CS AC 1203 | Lab-3 (Core and Elective Subjects Lab) | | - | 2 | 1 |
| CS AC 1205 | Seminar-2 | - | | 2 | 1 |
| CS AC 1206 | Project- II (Self Learning) | - | - | - | 2 |
| | Research Methodology (from NPTEL) | - | - | - | 0 |
| Total Hours:13 Total Cumulative Credits: 26 | | Total Semester Credits | | | 13 |

Third Semester:

| Subject Code | Subject | Periods Per Week | | | Total Credits |
|--|---------------------------|-------------------------------|---|----|---------------|
| | | L | T | P | |
| CS AC 1103 | Quantum Computing | 3 | - | - | 3 |
| CS AC 1161 - 69 | Department Elective-2 | 3 | - | - | 3 |
| CS AC 1105 | Lab-2 (Programming Lab-1) | - | - | 2 | 1 |
| CS AC 2102 | Pre-Dissertation Phase-I | - | - | 12 | 6 |
| Total Hours:20 Total Cumulative Credits: 39 | | Total Semester Credits | | | 13 |

Fourth Semester:

| Subject Code | Subject | Periods Per Week | | | Total Credits |
|---|---------------------------|-------------------------------|---|----|---------------|
| | | L | T | P | |
| CS AC 1261 - 69 | Department Elective-4 | 3 | - | - | 3 |
| | Open Elective | 3 | - | - | 3 |
| CS AC 1204 | Lab-4 (Programming Lab-2) | - | - | 2 | 1 |
| CS AC 2202 | Pre-Dissertation Phase-II | - | - | 12 | 6 |
| Total Hours:20 Total Cumulative Credits:52 | | Total Semester Credits | | | 13 |

Fifth Semester:

| Subject Code | Subject | Scheme of studies periods per week | | | Total Credits |
|---|----------------------|------------------------------------|---|----|---------------|
| | | L | T | P | |
| CS AC 2101 | Dissertation Phase-I | - | - | 28 | 14 |
| Total Hours:28 Total Cumulative Credits:66 | | Total Semester Credits | | | 14 |

Sixth Semester:

| Subject Code | Subject | Periods Per Week | | | Total Credits |
|--|-----------------------|------------------------|---|----|---------------|
| | | L | T | P | |
| CS AC 2201 | Dissertation Phase-II | - | - | 28 | 14 |
| Total Hours:28 Total Cumulative Credits: 80 | | Total Semester Credits | | | 14 |
| Total Credits I, II, III, IV, V, VI Semester | | | | | 80 |

Department Elective Subjects List

| List of Department Elective -1 | | List of Department Elective -3 | |
|--------------------------------|--|--------------------------------|---------------------------------------|
| CS AC 1151 | Statistical Methods | CS AC 1251 | Generative AI |
| CS AC 1152 | Machine Learning and Deep Learning | CS AC 1252 | Biometric |
| CS AC 1153 | Soft Computing | CS AC 1253 | Computer Vision |
| CS AC 1154 | Distributed Systems | CS AC 1254 | Internet Of Things |
| CS AC 1155 | Cloud Computing | CS AC 1255 | Natural Language Processing |
| CS AC 1156 | Cluster and Grid Computing | CS AC 1256 | Optimization Techniques |
| CS AC 1157 | Fundamental of Robotics | | |
| List of Department Elective -2 | | List of Department Elective -4 | |
| CS AC 1161 | Wireless Networking | CS AC 1261 | Heterogeneous Computing |
| CS AC 1162 | Cryptography | CS AC 1262 | Operating System and Design |
| CS AC 1163 | Ethical Hacking | CS AC 1263 | Graph Theory and Network Algorithms |
| CS AC 1164 | Computer Network and Security | CS AC 1264 | Stochastic Process and Queuing Theory |
| CS AC 1165 | Malware Analysis and Forensic | CS AC 1265 | Cybercrime & Information Warfare |
| CS AC 1166 | Web Search and Information Retrieval | CS AC 1266 | Big Data Technologies |
| CS AC 1167 | TCP/IP | CS AC 1267 | Digital Forensics |
| CS AC 1168 | Sensors, Microcontrollers and Embedded Systems | CS AC 1268 | Privacy and Database Security |

| List of Open Elective Subjects | |
|------------------------------------|---|
| Introduction to Urban Planning | Neural Networks and Applications |
| Bioprocess Engineering | Energy Resource Technologies |
| Biophysics Tool and Engineering | Intellectual Property Rights for Engineers |
| Analytical Techniques | Applied Psychology: Human Centered Design and Engineering |
| Green Technology and Processes | Advanced Operations Research |
| Solid Waste Management | Computing Technologies |
| Basic Concept of GIS | Value Engineering |
| Road Safety | Design thinking |
| Nanotechnology and Nanoscience | Mechatronics and NDT Engineering |
| Electric Machines and Applications | Advanced Instrumentation Methods for Material Analysis |
| Control and Instrumentation | Smart Materials and Their Applications |
| Introduction to Fuzzy Logic | Engineering Startup Management |