



**REGULATIONS 2024**  
**DEPARTMENT OF COMPUTER SCIENCE ENGINEERING**  
**M.E., COMPUTER SCIENCE**  
**CURRICULUM**

| S.No. | Category | Course Code             | Course Title                                                      | Credits |   |       |
|-------|----------|-------------------------|-------------------------------------------------------------------|---------|---|-------|
|       |          |                         |                                                                   | L       | P | Total |
| 1     | FC       | <a href="#">MCS1001</a> | Applied Probability and Statistics for Computer Science Engineers | 4       | 0 | 4     |
| 2     | PC       | <a href="#">MCS1002</a> | Advanced Data Structures and Algorithms                           | 3       | 0 | 3     |
| 3     | PC       | <a href="#">MCS1003</a> | Database Practices                                                | 3       | 1 | 4     |
| 4     | PC       | <a href="#">MCS1004</a> | Network Technologies                                              | 3       | 0 | 3     |
| 5     | PC       | <a href="#">MCS1005</a> | Principles of Programming Languages                               | 3       | 0 | 3     |
| 6     | PC       | <a href="#">MCS1006</a> | Advanced Data Structures and Algorithms Laboratory                | 0       | 2 | 2     |
| 7     | PC       | <a href="#">MCS1007</a> | Internet of Things                                                | 3       | 1 | 4     |
| 8     | PC       | <a href="#">MCS1008</a> | Multicore Architecture and Programming                            | 3       | 1 | 4     |
| 9     | PC       | <a href="#">MCS1009</a> | Machine Learning                                                  | 3       | 1 | 4     |
| 10    | PC       | <a href="#">MCS1010</a> | Advanced Software Engineering                                     | 3       | 0 | 3     |
| 11    | PC       | <a href="#">MCS1011</a> | Software Engineering Laboratory                                   | 0       | 1 | 1     |
| 12    | PC       | <a href="#">MCS1012</a> | Security Practices                                                | 3       | 0 | 3     |
| 13    | PE - I   | <a href="#">MCS1013</a> | Human Computer Interaction                                        | 3       | 0 | 3     |
| 14    | PE - I   | <a href="#">MCS1014</a> | Cloud Computing Technologies                                      | 3       | 0 | 3     |
| 15    | PE - I   | <a href="#">MCS1015</a> | Foundations of Data Science                                       | 3       | 0 | 3     |
| 16    | PE - I   | <a href="#">MCS1016</a> | Wireless Communications                                           | 3       | 0 | 3     |
| 17    | PE - I   | <a href="#">MCS1017</a> | Agile Methodologies                                               | 3       | 0 | 3     |
| 18    | PE - I   | <a href="#">MCS1018</a> | Performance Analysis of Computer Systems                          | 3       | 0 | 3     |
| 19    | PE - I   | <a href="#">MCS1019</a> | Advanced Operating System                                         | 3       | 0 | 3     |
| 20    | PE - I   | <a href="#">MCS1020</a> | Digital Image Processing                                          | 3       | 0 | 3     |
| 21    | PE -II   | <a href="#">MCS1021</a> | High Performance Computing for Big Data                           | 3       | 0 | 3     |
| 22    | PE -II   | <a href="#">MCS1022</a> | Information Retrieval Techniques                                  | 3       | 0 | 3     |
| 23    | PE -II   | <a href="#">MCS1023</a> | Software Quality Assurance                                        | 3       | 0 | 3     |
| 24    | PE -II   | <a href="#">MCS1024</a> | Autonomous Systems                                                | 3       | 0 | 3     |
| 25    | PE -II   | <a href="#">MCS1025</a> | Web Analytics                                                     | 3       | 0 | 3     |
| 26    | PE -II   | <a href="#">MCS1026</a> | Cognitive Computing                                               | 3       | 0 | 3     |
| 27    | PE -II   | <a href="#">MCS1027</a> | Quantum Computing                                                 | 3       | 0 | 3     |
| 28    | PE -II   | <a href="#">MCS1028</a> | Big Data Mining and Analytics                                     | 3       | 0 | 3     |
| 29    | PE-III   | <a href="#">MCS1029</a> | Mobile and Pervasive Computing                                    | 3       | 0 | 3     |
| 30    | PE-III   | <a href="#">MCS1030</a> | Web Services and API Design                                       | 3       | 0 | 3     |
| 31    | PE-III   | <a href="#">MCS1031</a> | Data Visualization Techniques                                     | 3       | 0 | 3     |

| S.No. | Category | Course Code             | Course Title                                           | Credits |   |       |
|-------|----------|-------------------------|--------------------------------------------------------|---------|---|-------|
|       |          |                         |                                                        | L       | P | Total |
| 32    | PE-III   | <a href="#">MCS1032</a> | Compiler Optimization Techniques                       | 3       | 0 | 3     |
| 33    | PE-III   | <a href="#">MCS1033</a> | Formal Models of Software Systems                      | 3       | 0 | 3     |
| 34    | PE-III   | <a href="#">MCS1034</a> | Robotics                                               | 3       | 0 | 3     |
| 35    | PE-III   | <a href="#">MCS1035</a> | Natural Language Processing                            | 3       | 0 | 3     |
| 36    | PE-III   | <a href="#">MCS1036</a> | GPU Computing                                          | 3       | 0 | 3     |
| 37    | PE- IV   | <a href="#">MCS1037</a> | Devops and Microservices                               | 3       | 1 | 4     |
| 38    | PE- IV   | <a href="#">MCS1038</a> | Mobile Application Development                         | 3       | 1 | 4     |
| 39    | PE- IV   | <a href="#">MCS1039</a> | Deep Learning                                          | 3       | 1 | 4     |
| 40    | PE- IV   | <a href="#">MCS1040</a> | Blockchain Technologies                                | 3       | 1 | 4     |
| 41    | PE- IV   | <a href="#">MCS1041</a> | Full Stack Web Application Development                 | 3       | 1 | 4     |
| 42    | PE- IV   | MCS1042                 | <a href="#">Bioinformatics</a>                         | 3       | 1 | 4     |
| 43    | PE- IV   | <a href="#">MCS1043</a> | Cyber Physical Systems                                 | 3       | 1 | 4     |
| 44    | PE- IV   | <a href="#">MCS1044</a> | Mixed Reality                                          | 3       | 1 | 4     |
| 45    | PE- IV   | MCS1045                 | Embedded Software Development                          | 3       | 1 | 4     |
| 46    | RM       | <a href="#">MGE0001</a> | Research Methodology and IPR                           | 2       | 0 | 2     |
| 47    | OE       | <a href="#">MGE0002</a> | Integrated Water Resources Management                  | 3       | 0 | 3     |
| 48    | OE       | <a href="#">MGE0003</a> | Water, Sanitation and Health                           | 3       | 0 | 3     |
| 49    | OE       | <a href="#">MGE0004</a> | Principles of Sustainable Development                  | 3       | 0 | 3     |
| 50    | OE       | <a href="#">MGE0005</a> | Environmental Impact Assessment                        | 3       | 0 | 3     |
| 51    | OE       | <a href="#">MGE0006</a> | Vibration and Noise Control Strategies                 | 3       | 0 | 3     |
| 52    | OE       | <a href="#">MGE0007</a> | Energy Conservation and Management in Domestic Sectors | 3       | 0 | 3     |
| 53    | OE       | <a href="#">MGE0008</a> | Additive Manufacturing                                 | 3       | 0 | 3     |
| 54    | OE       | <a href="#">MGE0009</a> | Electric Vehicle Technology                            | 3       | 0 | 3     |
| 55    | OE       | <a href="#">MGE0010</a> | New Product Development                                | 3       | 0 | 3     |
| 56    | OE       | <a href="#">MGE0011</a> | Sustainable Management                                 | 3       | 0 | 3     |
| 57    | OE       | <a href="#">MGE0012</a> | Micro and Small Business Management                    | 3       | 0 | 3     |
| 58    | OE       | <a href="#">MGE0013</a> | Intellectual Property Rights                           | 3       | 0 | 3     |
| 59    | OE       | <a href="#">MGE0014</a> | Ethical Management                                     | 3       | 0 | 3     |
| 60    | OE       | <a href="#">MGE0015</a> | IoT for Smart Systems                                  | 3       | 0 | 3     |
| 61    | OE       | <a href="#">MGE0016</a> | Machine Learning and Deep Learning                     | 3       | 0 | 3     |
| 62    | OE       | <a href="#">MGE0017</a> | Renewable Energy Technology                            | 3       | 0 | 3     |
| 63    | OE       | <a href="#">MGE0018</a> | Smart Grid                                             | 3       | 0 | 3     |
| 64    | OE       | <a href="#">MGE0019</a> | Big Data Analytics                                     | 3       | 0 | 3     |
| 65    | OE       | <a href="#">MGE0020</a> | Internet of Things and Cloud                           | 3       | 0 | 3     |
| 66    | OE       | <a href="#">MGE0021</a> | Medical Robotics                                       | 3       | 0 | 3     |
| 67    | OE       | <a href="#">MGE0022</a> | Embedded Automation                                    | 3       | 0 | 3     |
| 68    | OE       | <a href="#">MGE0023</a> | Environmental Sustainability                           | 3       | 0 | 3     |

| S.No. | Category | Course Code             | Course Title                        | Credits |    |       |
|-------|----------|-------------------------|-------------------------------------|---------|----|-------|
|       |          |                         |                                     | L       | P  | Total |
| 69    | OE       | <a href="#">MGE0024</a> | Textile Reinforced Composites       | 3       | 0  | 3     |
| 70    | OE       | <a href="#">MGE0025</a> | Nano Composite Materials            | 3       | 0  | 3     |
| 71    | OE       | <a href="#">MGE0026</a> | IPR, Biosafety and Entrepreneurship | 3       | 0  | 3     |
| 72    | EE       | <a href="#">MGE0029</a> | Term Paper Writing and seminar      | 0       | 1  | 1     |
| 73    | EE       | <a href="#">MCS1046</a> | Project Work I                      | 0       | 6  | 6     |
| 74    | EE       | <a href="#">MCS1047</a> | Project Work II                     | 0       | 12 | 12    |

| S.No. | SEMESTER | CATEGORY |    |    |     |    |     | TOTAL CREDITS |
|-------|----------|----------|----|----|-----|----|-----|---------------|
|       |          | FC       | PC | PE | RMC | OE | EEC |               |
| 1     | I        | 4        | 17 | 0  | 2   | 0  | 0   | 23            |
| 2     | II       | 0        | 14 | 6  | 0   | 0  | 1   | 21            |
| 3     | III      | 0        | 3  | 7  | 0   | 3  | 6   | 19            |
| 4     | IV       | 0        | 0  | 0  | 0   | 0  | 12  | 12            |

**BATCH: 2024- 2028 Onwards**

| Category                               | Credits to be Earned |
|----------------------------------------|----------------------|
| Foundation Courses (FC)                | 4                    |
| Professional Core (PC)                 | 34                   |
| Professional Elective (PE)             | 13                   |
| Research Methodology and IPR (RMC)     | 2                    |
| Open Electives (OE)                    | 3                    |
| Employability Enhancement Courses(EEC) | 19                   |
| <b>TOTAL</b>                           | <b>75</b>            |