

M.TECH. COMPUTER SCIENCE AND ENGINEERING

EFFECTIVE FROM ACADEMIC YEAR 2022 - 23 ADMITTED BATCH

R22 COURSE STRUCTURE AND SYLLABUS

I YEAR I – SEMESTER

| S.No. | Course Code | Course Title | Category | Int | Ext | L | T | P | Credits |
|-------|----------------------------------|--|----------|-----|-----|-----------|----------|----------|-----------|
| 1 | 22CS6111 | Mathematical Foundations of Computer Science | PC | | | 3 | 0 | 0 | 3 |
| 2 | 22CS6112 | Advanced Data Structures | PC | | | 3 | 0 | 0 | 3 |
| 3 | 22CS6171 22CS6172 22CS6173 | 1. Database Programming with PL/SQL 2. Deep Learning 3. Natural Language Processing | PE | | | 3 | 0 | 0 | 3 |
| 4 | 22CS6174 22CS6175 22CS6176 | 1. Applied Cryptography 2. Software Quality Engineering 3. Mining Massive Datasets | PE | | | 3 | 0 | 0 | 3 |
| 5 | 22CS6151 | Advanced Data Structures Lab | PC | | | 0 | 0 | 4 | 2 |
| 6 | 22CS6152 22CS6153 22CS6154 | Professional Elective - I Lab 1. Database Programming with PL/SQL 2. Deep Learning 3. Natural Language Processing | PE | | | 0 | 0 | 4 | 2 |
| 7 | 22MC6111 | Research Methodology & IPR | MC | | | 2 | 0 | 0 | 2 |
| 8 | 22AV6101 | Stress Management by Yoga | Audit | | | 2 | 0 | 0 | 0 |
| | | Total | | | | 16 | 0 | 8 | 18 |

Professional Elective- I and Professional Elective- I Lab must be of same course.

I YEAR II – SEMESTER

| S.No. | Course Code | Course Title | Category | Int | Ext | L | T | P | Credits |
|--------------|-------------|------------------------------------|----------|-----|-----|-----------|----------|-----------|-----------|
| 1 | 22CS6211 | Advanced Algorithms | PC | | | 3 | 0 | 0 | 3 |
| 2 | 22CS6212 | Advanced Computer Architecture | PC | | | 3 | 0 | 0 | 3 |
| 3 | 22CS6271 | 1.Enterprise Cloud Concepts | PE | | | 3 | 0 | 0 | 3 |
| | 22CS6272 | 2.Advanced Computer Networks | | | | | | | |
| | 22CS6273 | 3.Edge Analytics | | | | | | | |
| 4 | 22CS6274 | 1.Bioinformatics | PE | | | 3 | 0 | 0 | 3 |
| | 22CS6275 | 2.Nature Inspired Computing | | | | | | | |
| | 22CS6276 | 3.Robotic Process Automation | | | | | | | |
| 5 | 22CS6251 | Advanced Algorithms Lab | PC | | | 0 | 0 | 4 | 2 |
| 6 | | Professional Elective - III Lab | PE | | | 0 | 0 | 4 | 2 |
| | 22CS6252 | 1.Enterprise Cloud Concepts | | | | | | | |
| | 22CS6253 | 2.Advanced Computer Networks | | | | | | | |
| | 22CS6254 | 3.Edge Analytics | | | | | | | |
| 7 | 22CS6291 | Mini Project with Seminar | PW | | | 0 | 0 | 4 | 2 |
| 8 | 22AU6202 | English for Research Paper Writing | Audit | | | 2 | 0 | 0 | 0 |
| Total | | | | | | 14 | 0 | 12 | 18 |

Professional Elective- III and Professional Elective- III Lab must be of same course.

II YEAR I – SEMESTER

| S.No. | Course Code | Course Title | Category | Int | Ext | L | T | P | Credits |
|--------------|--------------------|--------------------------------|----------|-----|-----|----------|----------|-----------|-----------|
| 1 | 22CS7171 | 1.Digital Forensics | PE | | | 3 | 0 | 0 | 3 |
| | 22CS7172 | 2.High Performance Computing | | | | | | | |
| | 22CS7173 | 3.Quantum Computing | | | | | | | |
| 2 | 22BM7161 | Open Elective | OE | | | 3 | 0 | 0 | 3 |
| | 22EC7162 | 1. IPR | | | | | | | |
| | 22CS7163 | 2. Fault Tolerance Systems | | | | | | | |
| | 22CS7164 | 3. Intrusion Detection Systems | | | | | | | |
| | 22CS7165 | 4. Digital Forensics | | | | | | | |
| | 22CS7166 | 5. Optimization Techniques | | | | | | | |
| | 22CS7167 | 6. Cyber Physical Systems | | | | | | | |
| 22CS7167 | 7. Graph Analytics | | | | | | | | |
| 3 | 22CS7181 | Dissertation Work Review - II | PW | | | 0 | 0 | 12 | 6 |
| Total | | | | | | 6 | 0 | 12 | 12 |

II YEAR II – SEMESTER

| S.No. | Course Code | Course Title | Category | Int | Ext | L | T | P | Credits |
|-------|-------------|--------------------------------|----------|-----|-----|----------|----------|-----------|-----------|
| 1 | 22CS7282 | Dissertation Work Review - III | PW | | | 0 | 0 | 12 | 6 |
| 2 | 22CS7283 | Dissertation Viva-Voce | PW | | | 0 | 0 | 28 | 14 |
| | | Total | | | | 0 | 0 | 40 | 20 |

Note: For Dissertation Work Review - I, Please refer 7.10 in R19 Academic Regulations.

Audit Course I&II:

1. English for Research Paper Writing
2. Disaster Management
3. Sanskrit for Technical Knowledge
4. Value Education
5. Constitution of India
6. Pedagogy Studies
7. Stress Management by yoga
8. Personality Development Through Life Enlightenment Skills

Open Electives for other Departments:

8. IPR
9. Fault Tolerance Systems
10. Intrusion Detection Systems
11. Digital Forensics
12. Optimization Techniques
13. Cyber Physical Systems
14. Graph Analytics

| S.No. | Semester wise | Credits |
|-------|---------------|-----------|
| 1 | Semester-I | 18 |
| 2 | Semester-II | 18 |
| 3 | Semester-III | 12 |
| 4 | Semester-IV | 20 |
| | Total | 68 |