**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**
**M.TECH. (ADVANCED MANUFACTURING SYSTEMS)**
**EFFECTIVE FROM ACADEMIC YEAR 2022- 23 ADMITTED BATCH**

**R22 COURSE STRUCTURE AND SYLLABUS**

**I Year I Semester**

| Course Code | Course Title | L | T | P | Credits |
|---|---|---|---|---|---|
| Professional Core-I | Automation in Manufacturing | 3 | 0 | 0 | 3 |
| Professional Core-II | Theory of Metal Cutting | 3 | 0 | 0 | 3 |
| Professional Elective - I | 1. Design for Manufacturing & Assembly<br>2. Advanced Manufacturing Processes<br>3. Product Data Management | 3 | 0 | 0 | 3 |
| Professional Elective - II | 1. Optimization Techniques & Applications<br>2. Precision Engineering<br>3. Additive Manufacturing | 3 | 0 | 0 | 3 |
|  | Research Methodology & IPR | 2 | 0 | 0 | 2 |
| Lab - I | Automation Lab | 0 | 0 | 4 | 2 |
| Lab - II | Advanced Manufacturing Processes & Metal Cutting Lab | 0 | 0 | 4 | 2 |
| Audit - I | Audit Course- I | 2 | 0 | 0 | 0 |
|  | **Total** | **16** | **0** | **8** | **18** |

**I Year II Semester**

| Course Code | Course Title | L | T | P | Credits |
|---|---|---|---|---|---|
| Professional Core - III | Computer Integrated Manufacturing | 3 | 0 | 0 | 3 |
| Professional Core - IV | Manufacturing Systems: Simulation Modelling & Analysis | 3 | 0 | 0 | 3 |
| Professional Elective - III | 1. Materials Technology<br>2. Quality Engineering in Manufacturing<br>3. Advanced Tool Design | 3 | 0 | 0 | 3 |
| Professional Elective - IV | 1. Artificial Intelligence in Manufacturing<br>2. Concurrent Engineering<br>3. Industrial Robotics | 3 | 0 | 0 | 3 |
|  | Mini Project with Seminar | 0 | 0 | 4 | 2 |
| Lab - III | Computer Integrated Manufacturing Lab | 0 | 0 | 4 | 2 |
| Lab - IV | Simulation of Manufacturing Systems Lab | 0 | 0 | 4 | 2 |
| Audit - II | Audit Course - I | 2 | 0 | 0 | 0 |
|  | **Total** | **14** | **0** | **12** | **18** |

**II Year I Semester**

| Course Code | Course Title | L | T | P | Credits |
|---|---|---|---|---|---|
| Professional Elective - V | 1. Production and Operations Management<br>2. MEMS<br>3. Flexible Manufacturing Systems | 3 | 0 | 0 | 3 |
| Open Elective | Open Elective | 3 | 0 | 0 | 3 |
| Dissertation | Dissertation Work Review - II | 0 | 0 | 12 | 6 |
|  | **Total** | **6** | **0** | **12** | **12** |

**II YEAR II - SEMESTER**

| Course Code | Course Title | L | T | P | Credits |
|---|---|---|---|---|---|
| Dissertation | Dissertation Work Review - III | 0 | 0 | 12 | 6 |
| Dissertation | Dissertation Viva-Voce | 0 | 0 | 28 | 14 |
| | **Total** | **0** | **0** | **40** | **20** |

**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