

**M.Tech. (Advanced Manufacturing Technology) 2021 Batch
COURSE COMPONENTS AND CURRICULUM**

| S.No | Category / Component | Credits |
|------|--|--------------|
| 1 | Professional Core Courses | 25 |
| 2 | Professional Elective Courses | 15 |
| 3 | Open Courses – Electives from other technical and /or emerging courses | 3 |
| 4 | Mini Project / Industrial Training | 2 |
| 5 | Part & Full Semester Projects | 23 |
| 6 | Audit Courses I & II | (Non-Credit) |
| | Total | 68 |
| 7 | Online Courses | 2* |
| | Total Credits | 68+2* |

*The students shall earn 2 credits through online courses between 1st and 3rd semester (both inclusive)

PROFESSIONAL CORE COURSES

| S. No | Code No. | Course Title | Hours per week | | | Credits |
|-------|----------|---|----------------|---|---|---------|
| | | | L | T | P | |
| 1 | 20ME3001 | Additive Manufacturing Technologies | 3 | 0 | 0 | 3 |
| 2 | 20ME3002 | Intelligent Robotics systems in Manufacturing | 3 | 0 | 0 | 3 |
| 3 | 20ME3004 | 3D Printing Laboratory | 0 | 0 | 4 | 2 |
| 4 | 21ME3011 | Analysis and Simulation Lab. | 0 | 0 | 4 | 2 |
| 5 | 18MS3107 | Research Methodology and Intellectual Property Rights | 2 | 0 | 0 | 2 |
| 6 | 20ME3005 | Advanced Product Life Cycle Management and Automation | 3 | 0 | 0 | 3 |
| 7 | 20ME3006 | Computer Integrated Manufacturing and FMS | 3 | 0 | 0 | 3 |
| 8 | 21ME3006 | Advanced Computer Aided Manufacturing Lab. | 0 | 0 | 4 | 2 |
| 9 | 21ME3012 | Mechatronics and Robotics Laboratory | 0 | 0 | 4 | 2 |
| 10 | 20ME3009 | New-Age Materials | 3 | 0 | 0 | 3 |
| | | Total Credits | | | | 25 |

PROFESSIONAL ELECTIVE COURSES

| S. No | Code No. | Course Title | Hours per Week | | | Credits |
|-------|----------|--|----------------|---|---|---------|
| | | | L | T | P | |
| 1 | 21ME3001 | Finite Element Methods in Engineering | 3 | 0 | 0 | 3 |
| 2 | 21ME3002 | Total Quality Management | 3 | 0 | 0 | 3 |
| 3 | 21ME3003 | Design for Manufacturing and Assembly | 3 | 0 | 0 | 3 |
| 4 | 21ME3004 | Manufacturing System and Simulation | 3 | 0 | 0 | 3 |
| 5 | 20ME3003 | Internet of Things in Manufacturing | 3 | 0 | 0 | 3 |
| 6 | 21ME3005 | Computer Applications in Design | 3 | 0 | 0 | 3 |
| 7 | 21ME3007 | Design of Fluid Power Systems | 3 | 0 | 0 | 3 |
| 8 | 20ME3008 | Non-Destructive Testing and Inspection | 3 | 0 | 0 | 3 |
| 9 | 21ME3009 | Advanced Metal Cutting Theory | 3 | 0 | 0 | 3 |
| 10 | 20CS3006 | Application of Cyber Physical systems | 3 | 0 | 0 | 3 |
| 11 | 21ME3010 | Quality Concepts in Design | 3 | 0 | 0 | 3 |
| 12 | 18MA3001 | Advanced Mathematical Methods in Engineering | 3 | 0 | 0 | 3 |
| | | Total Credits | | | | 15 |

OPEN ELECTIVE COURSE

| S. No | Code No. | Course Title | Hours per week | Credits |
|-------|----------|--------------|----------------|---------|
|-------|----------|--------------|----------------|---------|

| | | | L | T | P | |
|--|------------------|------------------------------------|----------------|---|----|---------|
| 1 | 21ME3013 | Flexible Manufacturing System | 3 | 0 | 0 | 3 |
| 2 | 19ME3003 | 3D Printing Technology | 3 | 0 | 0 | |
| 3 | 21ME3014 | Advanced Tool Design | 3 | 0 | 0 | |
| 4 | 19ME3002 | Robotics and Automation | 3 | 0 | 0 | |
| Total Credits | | | | | | 3 |
| AUDIT COURSE | | | | | | |
| S. No | Code No. | Course Title | Hours per week | | | Credits |
| | | | L | T | P | |
| 1 | | Audit Course – I | 2 | 0 | 0 | 0 |
| 2 | | Audit Course - II | 2 | 0 | 0 | 0 |
| Total Credits | | | | | | 0 |
| MINI PROJECT / INDUSTRIAL TRAINING | | | | | | |
| S. No | Code No. | Course Title | Hours per week | | | Credits |
| | | | L | T | P | |
| 1 | ME3951 / ITP3901 | Mini Project / Industrial Training | 0 | 0 | 4 | 2 |
| Total Credits | | | | | | 2 |
| PROJECT | | | | | | |
| S. No | Code No. | Course Title | Hours per week | | | Credits |
| | | | L | T | P | |
| 1 | 21ME3998 | Dissertation Phase – I | 0 | 0 | 16 | 8 |
| 2 | 21ME3999 | Dissertation Phase - II | 0 | 0 | 30 | 15 |
| Total Credits | | | | | | 23 |
| ONLINE COURSES | | | | | | |
| <i>*The students shall earn 2 credits through online courses between 1st and 3rd semester (both inclusive)</i> | | | | | | |

SEMESTER-WISE CURRICULUM

| Semester- I | | | | | | |
|----------------------|-------------|---|----------------|---|---|-----------|
| S. No | Course Code | Course Title | Hours per Week | | | Credits |
| | | | L | T | P | |
| 1 | 20ME3001 | Additive Manufacturing Technologies | 3 | 0 | 0 | 3 |
| 2 | 20ME3002 | Intelligent Robotics systems in Manufacturing | 3 | 0 | 0 | 3 |
| 3 | 21ME3001 | Finite Element Methods in Engineering | 3 | 0 | 0 | 3 |
| | 21ME3002 | Total Quality Management | 3 | 0 | 0 | |
| | 21ME3003 | Design for Manufacturing and Assembly | 3 | 0 | 0 | |
| 4 | 21ME3004 | Manufacturing System and Simulation | 3 | 0 | 0 | 3 |
| | 20ME3003 | Internet of Things in Manufacturing | 3 | 0 | 0 | |
| | 21ME3005 | Computer Applications in Design | 3 | 0 | 0 | |
| 5 | 20ME3004 | 3D Printing Laboratory | 0 | 0 | 4 | 2 |
| 6 | 21ME3006 | Advanced Computer Aided Manufacturing Laboratory. | 0 | 0 | 4 | 2 |
| 7 | 18MS3107 | Research Methodology and Intellectual Property Rights | 2 | 0 | 0 | 2 |
| 8 | | Audit Course - I | 2 | 0 | 0 | 0 |
| Total Credits | | | | | | 18 |

| Semester- II | | | | | | |
|----------------------|------------------|---|----------------|---|---|-----------|
| S. No | Course Code | Course Title | Hours per Week | | | Credits |
| | | | L | T | P | |
| 1 | 20ME3005 | Automation in Product Life Cycle Management | 3 | 0 | 0 | 3 |
| 2 | 20ME3006 | Computer Integrated Manufacturing and FMS | 3 | 0 | 0 | 3 |
| 3 | 21ME3007 | Design of Fluid Power Systems | 3 | 0 | 0 | 3 |
| | 20CS3006 | Application of Cyber Physical systems | 3 | 0 | 0 | |
| | 21ME3008 | Control of CNC Machine tools | 3 | 0 | 0 | |
| 4 | 21ME3009 | Advanced Metal Cutting Theory | 3 | 0 | 0 | 3 |
| | 20ME3007 | Automated Inspection Systems | 3 | 0 | 0 | |
| | 21ME3010 | Quality Concepts in Design | 3 | 0 | 0 | |
| 5 | 21ME3011 | Analysis and Simulation Laboratory | 0 | 0 | 4 | 2 |
| 6 | 21ME3012 | Mechatronics and Robotics Laboratory | 0 | 0 | 4 | 2 |
| 7 | ME3951 / ITP3901 | Mini Project / Industrial Training | 0 | 0 | 4 | 2 |
| 8 | | Audit Course - II | 2 | 0 | 0 | 0 |
| Total Credits | | | | | | 18 |

| Semester- III | | | | | | |
|----------------------|-------------|--|----------------|---|----|-----------|
| S. No | Course Code | Course Title | Hours per Week | | | Credits |
| | | | L | T | P | |
| 1 | 20ME3009 | New-Age Materials | 3 | 0 | 0 | 3 |
| 2 | 20ME3008 | Non-Destructive Testing and Inspection | 3 | 0 | 0 | 3 |
| | 18MA3001 | Advanced Mathematical Methods in Engineering | 3 | 0 | 0 | |
| 3 | | Open Elective Course-1 | 3 | 0 | 0 | 3 |
| 4 | 21ME3998 | Dissertation Phase - I | 0 | 0 | 16 | 8 |
| Total Credits | | | | | | 17 |

| Semester- IV | | | | | | |
|----------------------|-------------|-------------------------|----------------|---|----|-----------|
| S. No. | Course Code | Course Title | Hours per Week | | | Credits |
| | | | L | T | P | |
| 1 | 21ME3999 | Dissertation Phase - II | 0 | 0 | 30 | 15 |
| Total Credits | | | | | | 15 |