

Scheme for M.Tech:CAD - CAM

| CAD - CAM First Semester | | | | | |
|--------------------------|-------------|----------------------------------|------------|-----------|--------------|
| Sr.No. | Course Code | Course Name | Type DC/DE | Structure | Credits |
| 1 | MAL501 | Advanced Mathematics | DC | 3+0+0 | 3 |
| 2 | MEL410 | Computer Aided Design | DC | 3+0+0 | 3 |
| 3 | MEP410 | Computer Aided Design Lab | DC | 0+0+2 | 1 |
| 4 | MEL522 | Computer Aided Manufacturing | DC | 3+0+0 | 3 |
| 5 | MEP522 | Computer Aided Manufacturing Lab | DC | 0+0+2 | 1 |
| Elective/OC (Any Two) | | | | | |
| 1 | MEL431 | Advanced Mechanisms | DE | 3+0+0 | 3 (3×2=6) |
| 2 | MEL452 | Advanced Machining Processes | | | |
| 3 | MEL407 | Biomechanics | | | |
| 4 | MEL533 | Failure Analysis | | | |
| 5 | MEL414 | Tribology | | | |
| 6 | MEL515 | Robotics and Machine Vision | | | |
| Total credits | | | | | 17 |

| CAD - CAM SecondSemester | | | | | |
|---------------------------------------|----------------------------|---|------------|-----------|---------|
| Sr.No. | Course Code | Course Name | Type DC/DE | Structure | Credits |
| 1 | MEL523 | Computer Integrated Manufacturing | DC | 3+0+0 | 3 |
| 2 | MEL520 | Non Linear Optimization | DC | 3+0+0 | 3 |
| 3 | MEL418 | Advanced Stress Analysis | DC | 3+0+0 | 3 |
| Elective/OC (Any One From Each Group) | | | | | |
| 1 | MEL530 MEL510 MEL415 | 1. Machine Condition Monitoring 2. Manufacturing System Simulation and Design 3. Mechanical Vibrations | DE | 3+0+0 | 3 |
| 2 | MEL532 MEL518 MEL526 | 1. Layered Manufacturing 2. Fractured Mechanics and Non – Destructive Testing 3. Adhesion, Friction and Contact Mechanics | | 3+0+0 | 3 |
| 3 | MEP532 MEP518 MEP526 | 1. Layered Manufacturing Lab 2. Fractured Mechanics and Non – Destructive Testing Lab 3. Tribology and Dynamics Lab | | 0+0+2 | 1 |
| Total credits | | | | | 16 |

| CAD – CAM Third Semester | | | | | |
|--------------------------|-------------|---------------------------------------|------------|-----------|---------|
| Sr.No. | Course Code | Course Name | Type DC/DE | Structure | Credits |
| 1 | MED401 | Project Phase – I | DC | | 3 |
| 2 | MEL420 | Finite Element Method | DC | 3+0+0 | 3 |
| 3 | MEP420 | Finite Element Method Lab | DC | 0+0+2 | 1 |
| Elective/OC (Any One) | | | | | |
| 1 | MEL433 | Design for Manufacturing and Assembly | DE | 3+0+0 | 3 |
| 2 | MEL439 | Product Design and Development | | | |
| 3 | MEL437 | Composite Materials | | | |
| 4 | MEL402 | Surface Engineering | | | |
| 5 | MEL527* | Hydraulics and Pneumatics | | 0+0+2 | 1 |
| | MEP527* | Hydraulics and Pneumatics Lab | | | |
| Total credits | | | | | 10 |

| CAD – CAM Fourth Semester | | | | | |
|---------------------------|-------------|------------------|------------|-----------|---------|
| Sr.No. | Course Code | Course Name | Type DC/DE | Structure | Credits |
| 1 | MED503 | Project Phase II | DC | | 9 |
| Total credits | | | | | 9 |

Total Credits (Semester wise)

| Sr. No | Type | I Sem | II Sem | III Sem | IV Sem | Total |
|--------|------|-------|--------|---------|--------|-------|
| 1 | DC | 11 | 9 | 7 | 9 | 36 |
| 2 | DE | 6 | 7 | 3 | 0 | 16 |

Scheme for M. Tech: INDUSTRIAL ENGINEERING

| Industrial Engineering First Semester | | | | | |
|---------------------------------------|-------------|--|------------|-----------|---------|
| Sr.No. | Course Code | Course Name | Type DC/DE | Structure | Credits |
| 1 | MEL517 | Quantitative Techniques in Industrial Management | DC | 3+0+0 | 3 |
| 2 | MEP517 | Quantitative Techniques in Industrial Management Lab | DC | 0+0+2 | 1 |
| 3 | MEL502 | Methods Engineering and Ergonomics | DC | 3+0+0 | 3 |
| 4 | MEP502 | Methods Engineering and Ergonomics Lab | DC | 0+0+2 | 1 |
| 5 | MEL553 | Personnel Management and Industrial Relation | DC | 3+0+0 | 3 |
| 6 | MEL505 | Material Management | DC | 3+0+0 | 3 |
| Elective/OC (Any One) | | | | | |
| 1 | MEL521 | Production Planning and Control | DE | 3+0+0 | 3 |
| 2 | MEL450 | Advanced Machining Processes | DE | | |
| 3 | MEL408 | Supply Chain Management | DE | | |
| 4 | MEL533 | Failure Analysis | DE | | |
| Total credits | | | | | 17 |

| Industrial Engineering Second Semester | | | | | |
|--|------------------|--|------------|-----------|---------|
| Sr.No. | Course Code | Course Name | Type DC/DE | Structure | Credits |
| 1 | MEL445 | Automation in Production | DC | 3+0+0 | 3 |
| 2 | MEL506 | Marketing Management | DC | 3+0+0 | 3 |
| 3 | MEL501 | Statics Quality Assurance | DC | 3+0+0 | 3 |
| 4 | MEP445 | Automation in Production Lab | DC | 0+0+2 | 1 |
| Elective/OC (Any One from Each Group) | | | | | |
| 1 | MEL530 MEL510 | 1. Machine Condition Monitoring 2. Manufacturing System Simulation and Design | DE | 3+0+0 | 3 |
| 2 | MEL532 MEL442 | 1. Layered Manufacturing 2. Computer and Data Based Management | DE | 3+0+0 | 3 |
| 3 | MEP532 MEP442 | 1. Layered Manufacturing Lab 2. Computer and Data Based Management Lab | DE | 0+0+2 | 1 |
| Total credits | | | | | 17 |

| Industrial Engineering Third Semester | | | | | |
|---------------------------------------|-------------|---|------------|-----------|--------------|
| Sr.No. | Course Code | Course Name | Type DC/DE | Structure | Credits |
| 1 | MED401 | Project Phase - I | DC | | 3 |
| Elective/OC (Any Two) | | | | | |
| 1 | MEL555 | Project Evaluation and Management | DE | 3+0+0 | 3 (3×2=6) |
| 2 | MEL439 | Product Design and Development | | | |
| 3 | MEL433 | Design for Manufacturing and Assembly | | | |
| 4 | MEL425 | Reliability and Maintenance Engineering | | | |
| 5 | MEL402 | Surface Engineering | | | |
| Total credits | | | | | 9 |

| Industrial Engineering Fourth Semester | | | | | |
|--|-------------|--------------------|------------|-----------|---------|
| Sr.No. | Course Code | Course Name | Type DC/DE | Structure | Credits |
| 1 | MED503 | Project Phase - II | DC | | 9 |
| Total credits | | | | | 9 |

Total Credits (Semester wise)

| Sr. No | Type | I Sem | IISem | IIISem | IVSem | Total |
|--------|------|-------|-------|--------|-------|-------|
| 1 | DC | 14 | 10 | 3 | 9 | 36 |
| 2 | DE | 3 | 7 | 6 | 0 | 16 |

Scheme for M. Tech: HEAT POWER ENGINEERING

| Heat Power Engineering First Semester | | | | | |
|---------------------------------------|------------------|--|------------|----------------|--------------|
| Sr.No. | Course Code | Course Name | Type DC/DE | Structure | Credits |
| 1 | MEL512 | Engineering Thermodynamics and Combustion | DC | 3+0+0 | 3 |
| 2 | MEL511 | Fluid Dynamics | DC | 3+0+0 | 3 |
| 3 | MEL438 | Adv. Refrigeration and Air Conditioning | | 3+0+0 | 3 |
| 4 | MEP438 | Adv. Refrigeration and Air Conditioning Lab | | 0+0+2 | 1 |
| 5 | MEL417 | Power Plant Engineering | | 3+0+0 | 3 |
| Elective/OC (Any One) | | | | | |
| 1 | MEL435 MEP435 | 1. Computational Fluid Dynamics 2. Computational Fluid Dynamics Lab | DE | 3+0+0 0+0+2 | 4 (3+1=4) |
| 2 | MEL422 MEP422 | 1. Mechatronics 2. Mechatronics Lab | | 3+0+0 0+0+2 | |
| 3 | MEL528 MEP528 | 1. Gas Dynamics 2. Gas Dynamics Lab | | 3+0+0 0+0+2 | |
| Total credits | | | | | 17 |

| Heat Power Engineering Second Semester | | | | | |
|--|-------------|----------------------------|------------|-----------|---------|
| Sr.No. | Course Code | Course Name | Type DC/DE | Structure | Credits |
| 1 | MEL430 | Adv. IC Engine | DC | 3+0+0 | 3 |
| 2 | MEP430 | Adv. IC Engine Lab | DC | 0+0+2 | 1 |
| 3 | MEL508 | Energy management | DC | 3+0+0 | 3 |
| 4 | MEL444 | Solar Energy Utilization | DC | 3+0+0 | 3 |
| 5 | MEL513 | Adv. Heat Transfer | DC | 3+0+0 | 3 |
| 6 | MEP524 | Heat and Mass Transfer Lab | DC | 0+0+2 | 1 |
| Elective/OC (Any One) | | | | | |
| 1 | MEL449 | Adv. Turbo Machinery | DE | 3+0+0 | 3 |
| 2 | MEL443 | Air Pollution and Control | DE | | |
| 3 | MEL525 | Multi Phase Flow | DE | | |
| Total credits | | | | | 17 |

| Heat Power Engineering Third Semester | | | | | |
|---------------------------------------|----------------------------|---|------------|-----------|---------|
| Sr.No. | Course Code | Course Name | Type DC/DE | Structure | Credits |
| 1 | MED401 | Project Phase – I | DC | | 3 |
| Elective/OC (Any One From Each Group) | | | | | |
| 1 | MEL520 MEL509 MEL507 | 1. Bio Energy Conversion 2. Design and Optimisation of Thermal Energy systems 3. Advanced CFD | DE | 3+0+0 | 3 |
| 2 | MEL516 MEL525 MEL519 | 1. Fuel Cell Technology 2. Hydraulics and Pneumatics 3. Cryogenics | DE | 3+0+0 | 3 |
| 3 | MEP516 MEP525 MEP519 | 1. Fuel Cell Technology Lab 2. Hydraulics and Pneumatics Lab 3. Cryogenics Lab | DE | 0+0+2 | 1 |
| Total credits | | | | | 10 |

| Heat Power Engineering Fourth Semester | | | | | |
|--|-------------|--------------------|------------|-----------|---------|
| Sr.No. | Course Code | Course Name | Type DC/DE | Structure | Credits |
| 1 | MED503 | Project Phase - II | DC | | 9 |
| Total credits | | | | | 9 |

Total Credits (Semester wise)

| Sr. No | Type | I Sem | IISem | IIISem | IVSem | Total |
|--------|------|-------|-------|--------|-------|-------|
| 1 | DC | 13 | 14 | 3 | 9 | 39 |
| 2 | DE | 4 | 3 | 7 | 0 | 14 |