**M.Tech in Mechanical Engg.with Specialisation in Mechanical Engineering Design/ Thermal Engineering/ Production and Industrial Engineering/ Electric Vehicles)**

**Full time (2 Years) with Exit Option**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Sem** | **Subject 1** | **Subject 2** | **Subject 3** | **Subject 4** | **Subject 5** | **Subject 6** | **L** | **T** | **P** | **Weekly Contact Hours** | **Credits** |
| **I** | MEL510 Introduction to FEM  2-1-0 (3) | MEL613-IP  Project Management  3-0-2 (4) | PE-1  3-0-2 (4) | PE-2  3-0-2 (4) | MEC601  Seminar  0-0-4 (2) | MES501  Community Service | 11 | 1 | 10 | 22 | 17 |
| **II** | MEL550  Advanced Heat and Mass Transfer 3-1-0 (4) | MEL560  Advanced Machine Design  3-0-2 (4) | MEL570 Production and Operation Management 3-1-0 (4) | PE-3  3-0-2 (4) | MED502  Minor Project  0-0-10 (5) | MES502  Community Service  (140 hrs=2 credit)\* | 12 | 2 | 14 | 28 | 23 |
| Students on exit will be awarded P.G. Diploma in Mechanical Engineering with Specialisation in Mechanical Engineering Design / Thermal Engineering / Production and Industrial Engineering/ Electric Vehicles after securing **40 credits** on completion of Semester II | | | | | | | | | | | | |
| **III** | OE  2-0-2 (3) | MAL616  Research Methodology  2-1-0 (3) | PE-4  3-0-2 (4) | MED601 Dissertation-I  0-0-12 (6) |  | MES601  Community Service | 7 | 1 | 16 | 12 | 16 | |
| **IV** | MED602  Dissertation-II  0-0-24 (12) |  |  |  |  | MES602  Community Service  (140 hours = 2 credit) \* | 0 | 0 | 24 | -- | 14 | |
| **TOTAL CREDITS OF THE M.TECH DEGREE PROGRAMME = 70** | | | | | | | | | | | 70 |

\*Students can utilize the summer/winter break period to complete the remaining 140 Community Service hours every year

**M.Tech in Mechanical Engg.with Specialisation in Mechanical Engineering Design/ Thermal Engineering/ Production and Industrial Engineering/ Electric Vehicles)**

**Part Time 3 Years Program**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Sem** | **Subject 1** | **Subject 2** | **Subject 3** | **Subject 4** | **Subject 5** | **L** | **T** | **P** | **Weekly Contact Hours** | **Credits** |
| **I** | MEL510 Introduction to FEM  2-1-0 (3) | MEL613-IP Project Management 3-0-2 (4) | PE-1  3-0-2 (4) |  | MES501  Community Service | 8 | 1 | 4 | 13 | 11 |
| **II** | MEL550  Advanced Heat and Mass Transfer 3-1-0 (4) | MEL560 Advanced Machine Design 3-0-2 (4) | PE-2  3-0-2 (4) | MEC601  Seminar  0-0-4 (2) | MES502  Community Service  (140 hrs=2 credit)\* | 9 | 1 | 8 | 18 | 16 |
| **III** | MEL570 Production and Operation Management  3-1-0 (4) | OE  2-0-2 (3) | MAL616  Research Methodology  2-1-0 (3) |  | MES601  Community Service | 7 | 2 | 2 | 11 | 10 | |
| **IV** | PE-3  3-0-2 (4) | MED502  Minor Project  0-0-10 (5) |  |  | MES602  Community Service  (140 hours = 2 credit) \* | 3 |  | 12 | 15 | 11 | |
| **V** | PE-4  3-0-2 (4) | MED601 Dissertation-I  0-0-12 (6) |  |  |  | 3 |  | 14 | 17 | 10 | |
| **VI** | MED602  Dissertation-II  0-0-24 (12) |  |  |  |  |  |  | 24 |  | 12 | |
|  | **TOTAL CREDITS OF THE M.TECH DEGREE PROGRAMME = 70** | | | | | | | | | | |

\*Students can utilize the summer/winter break period to complete the remaining 140 Community Service hours every year

**Programme Electives (PE)**

|  |  |  |  |
| --- | --- | --- | --- |
| **PROGRAMME ELECTIVE-1, 2, 3 & 4**  **(For Specialization in Mechanical Engineering Design)** | **PROGRAMME ELECTIVE-1, 2, 3 & 4**  **(For Specialization in Thermal Engineering)** | **PROGRAMME ELECTIVE-1, 2,3 & 4 (For Specialization in Production and Industrial Engineering)** | **PROGRAMME ELECTIVE-1, 2,3 & 4 (For Specialization in Electric Vehicles)** |
| MEL603MD Design for manufacturing assembly (3-0-2) | MEL601-TH Computational Fluid Dynamics and Heat Transfer (3-0-2) | MEL617-IP Manufacturing Economics and Costing (3-0-2) | AEL531 Energy Storage, BMS & BTMS  (3-0-2) 4 |
| MEL607-MD Advanced Mechanics of Solids (3-0-2) | MEL609-TH Modern Power Plants (3-0-2) | MEL603-MD Design for manufacturing & Assembly (3-0-2) | AEL533 Advanced Vehicle Powertrain (3-0-2) 4 |
| MEL617-MD Composite Materials (3-0-2) | MEL611-TH Renewable Energy Systems (3-0-2) | MEL609-IP Concurrent Engineering (3-0-2) | AEL532 Advanced Automotive Electronics (3-0-2) 4 |
| AEL534 Advanced Vehicle Dynamics (3-0-2) 4 |
| MEL625-MD Vibration & Noise Engineering (3-0-2) | MEL621-TH Analysis of IC Engine systems (3-0-2) | MEL677-IP Optimization Techniques (3-0-2) | AEL631 Advanced Quality, Reliability and maintenance Engineering (3-0-2) 4 |
| AEL633 Smart Mobility and Data Analytics (3-0-2)4 |
| MEL627-MD Mechatronics (3-0-2) | MEL520-Advanced Thermodynamics (3-0-2) | MEL611-IP Product Life cycle Management (3-0-2) | AEL635 Advanced Charging Infrastructure for EV (3-0-2) 4 |