

## M.TECH - THERMAL ENGINEERING

### First Year (First Semester):

| S. No.       | Course Code | Course Title                             | Periods   |          |          | Contact Hours | Credits   |
|--------------|-------------|------------------------------------------|-----------|----------|----------|---------------|-----------|
|              |             |                                          | L         | T        | P        |               |           |
| 1            | 15 ME 5109  | Numerical Methods in Thermal engineering | 3         | 2        | 0        | 4             | 4         |
| 2            | 15 ME 5110  | Advanced Thermodynamics                  | 3         | 2        | 0        | 4             | 4         |
| 3            | 15 ME 5111  | Design of Thermal Systems                | 3         | 2        | 0        | 4             | 4         |
| 4            | 15 ME 5112  | Advanced Heat and Mass Transfer          | 3         | 2        | 0        | 4             | 4         |
| 5            |             | Elective – 1                             | 3         | 0        | 0        | 3             | 3         |
| 6            |             | Elective - 2                             | 3         | 0        | 0        | 3             | 3         |
| 7            | 15 IE 5149  | Seminar                                  | 0         | 0        | 4        | 4             | 2         |
| <b>Total</b> |             |                                          | <b>18</b> | <b>4</b> | <b>8</b> | <b>30</b>     | <b>24</b> |

### First Year (Second Semester) :

| S. No.       | Course Code | Course Title                          | Periods   |          |          | Contact Hours | Credits   |
|--------------|-------------|---------------------------------------|-----------|----------|----------|---------------|-----------|
|              |             |                                       | L         | T        | P        |               |           |
| 1            | 15 ME 5213  | Incompressible and Compressible Flows | 3         | 2        | 0        | 4             | 4         |
| 2            | 15 ME 5214  | Computational Fluid Dynamics          | 3         | 0        | 2        | 5             | 4         |
| 3            | 15 ME5215   | Refrigeration and Cryogenics          | 3         | 2        | 0        | 4             | 4         |
| 4            | 15 ME 5216  | Measurements in Thermal Engineering   | 3         | 2        | 0        | 4             | 4         |
| 5            |             | Elective – 3                          | 3         | 0        | 0        | 3             | 3         |
| 6            |             | Elective - 4                          | 3         | 0        | 0        | 3             | 3         |
| 7            | 15 IE 5250  | Term Paper                            | 0         | 0        | 4        | 4             | 2         |
| <b>Total</b> |             |                                       | <b>18</b> | <b>4</b> | <b>8</b> | <b>30</b>     | <b>24</b> |

### Second Year (First & Second Semester) :

| S.No | Course code | Course Title | Periods |   |    | Credits |
|------|-------------|--------------|---------|---|----|---------|
|      |             |              | L       | T | P  |         |
| 1    | 15 IE 6050  | Dissertation | 0       | 0 | 72 | 36      |

## ELECTIVE COURSES

| S.No       | Course code | Course Title                            | Periods |   |   | Credits |
|------------|-------------|-----------------------------------------|---------|---|---|---------|
|            |             |                                         | L       | T | P |         |
| Elective-1 |             |                                         |         |   |   |         |
| 1          | 15 ME 51E1  | Heat Exchanger Design                   | 3       | 0 | 0 | 3       |
| 2          | 15 ME 51E2  | Convection and Two-Phase Flow           | 3       | 0 | 0 | 3       |
| 3          | 15 ME 51E3  | Compact Heat Exchangers                 | 3       | 0 | 0 | 3       |
| Elective-2 |             |                                         |         |   |   |         |
| 1          | 15 ME 51F1  | Engine Systems and Performance          | 3       | 0 | 0 | 3       |
| 2          | 15 ME 51F2  | IC Engine Combustion and Pollution      | 3       | 0 | 0 | 3       |
| 3          | 15 ME 51F3  | Alternative Fuels                       | 3       | 0 | 0 | 3       |
| Elective-3 |             |                                         |         |   |   |         |
| 1          | 15 ME 52G1  | Principles of Turbo-machinery           | 3       | 0 | 0 | 3       |
| 2          | 15 ME 52G2  | Gas Turbine Engineering                 | 3       | 0 | 0 | 3       |
| 3          | 15 ME 52G3  | Turbo-Compressors                       | 3       | 0 | 0 | 3       |
| Elective-4 |             |                                         |         |   |   |         |
| 1          | 15 ME 52H1  | Energy Conservation, Management & Audit | 3       | 0 | 0 | 3       |
| 2          | 15 ME 52H2  | Renewable Energy Technology             | 3       | 0 | 0 | 3       |
| 3          | 15 ME 52H3  | Solar Energy and Wind Energy            | 3       | 0 | 0 | 3       |