



**B.Tech. – III Year I Semester**

**B.Tech. – III Year I Semester**

| S.No. | Category   | Title  | L  | T | P  | Credits   |
|-------|--|--|----|---|----|-----------|
| 1     | PC   | Machine Tools and Metrology  | 3  | 0 | 0  | 3         |
| 2     | PC   | Thermal Engineering  | 3  | 0 | 0  | 3         |
| 3     | PC   | Theory of Machines   | 3  | 1 | 0  | 3         |
| 4     | PCE-1  | Professional Elective – I  | 3  | 0 | 0  | 3         |
| 5     | OE-1   | 1. Sustainable Energy Technologies<br>2. Applied operation Research<br>3. Industrial safety<br>4. Energy Conservation Management | 3  | 0 | 0  | 3         |
| 6     | PC Lab-1   | Thermal Engineering Lab  | 0  | 0 | 3  | 1.5       |
| 7     | PC Lab-2   | Theory of Machines Lab   | 0  | 0 | 3  | 1.5       |
| 8     | SEC  | Machine Tools & Metrology Lab<br>Mechatronics Lab  | 0  | 0 | 4  | 2         |
| 9     | ES   | Computational Fluid Dynamics Lab   | 0  | 0 | 2  | 1.0       |
| 10    | Evaluation of<br>Community<br>Service Internship | Community Service Internship   | -  | - | -  | 2         |
| Total |  |  | 15 | 0 | 12 | <b>23</b> |

**Professional Elective - I**

1. Instrumentation & Control Systems
2. Nano Technology
3. Design for manufacturing
4. Thermal management of Electronic Systems
5. Joining Processes





**B.Tech. – III Year II Semester**

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| S.No.   | Category     | Title   | L         | T         | P         | Credits   |
|---|--------------|---|-----------|-----------|-----------|-----------|
| 1   | PC           | Heat Transfer   | 3         | 0         | 0         | 3         |
| 2   | PC           | Artificial Intelligence and Machine Learning  | 3         | 0         | 0         | 3         |
| 3   | PC           | Finite Element Methods  | 3         | 0         | 0         | 3         |
| 4   | PE - II      | Professional Elective-II  | 3         | 0         | 0         | 3         |
| 5   | PE - III     | Professional Elective-III   | 3         | 0         | 0         | 3         |
| 6   | OE - II      | 1. Electrical vehicles<br>2. Supply chain management<br>3. Design of Experiments<br>4. Total Quality Management<br>5. Industrial robotics | 3         | 0         | 0         | 3         |
| 7   | PC Lab-1     | Heat Transfer Lab   | 0         | 0         | 3         | 1.5       |
| 8   | PC Lab-2     | Artificial Intelligence and Machine Learning Lab  | 0         | 0         | 3         | 1.5       |
| 9   | SEC          | Computer Aided Manufacturing Lab<br>Robotics and Drone Technology   | 0         | 1         | 2         | 2         |
| 10  | Audit Course | Technical paper writing and IPR   | 2         | 0         | 0         | -         |
| <b>Total</b>  |              |   | <b>20</b> | <b>01</b> | <b>08</b> | <b>23</b> |
| Mandatory Industry Internship of 08 weeks duration during summer vacation |              |   |           |           |           |           |

**Professional Elective-II**

1. Industrial robotics
2. Supply chain management
3. Additive manufacturing
4. UnConventional Machining Processes
5. Refrigeration and Air conditioning

**Professional Elective-III**

1. Automobile Engineering
2. Computer Integrated Manufacturing
3. Smart manufacturing
4. Mechanical Vibrations
5. Composite materials



**B.Tech. – IV Year I Semester**

| S.No.        | Category                 | Title  | L         | T         | P         | Credits   |
|--------------|--------------------------|--|-----------|-----------|-----------|-----------|
| 1            | PC                       | CAD/CAM  | 3         | 0         | 0         | 3         |
| 2            | Management Course- II    | Operations Research  | 2         | 0         | 0         | 2         |
| 3            | PE – IV                  | Professional Elective-IV   | 3         | 0         | 0         | 3         |
| 4            | PE - V                   | Professional Elective-V  | 3         | 0         | 0         | 3         |
| 5            | OE - III                 | 1. Digital marketing management<br>2. Product design and development<br>3. Introduction to Mechatronics<br>4. Condition Monitoring<br>5. Operations Management | 3         | 0         | 0         | 3         |
| 6            | OE - IV                  | 1. Statistical Quality Control<br>2. Nano Materials<br>3. Entrepreneurship<br>4. Product Design & Development<br>5. Optimization Techniques                    | 3         | 0         | 0         | 3         |
| 7            | Skill Enhancement Course | Renewable Energy<br>Simulation Lab<br>Instrumentation and control systems lab  | 0         | 1         | 2         | 2         |
| 8            | Audit Course             | Constitution of India  | 2         | 0         | 0         | -         |
| 9            | Internship               | Evaluation of Industry Internship  | -         | -         | -         | 2         |
| <b>Total</b> |                          |  | <b>19</b> | <b>01</b> | <b>02</b> | <b>21</b> |

**Professional Elective-IV**

1. Production Planning & Control
2. Nondestructive evaluation
3. Smart materials
4. Hydrogen and fuel cell technology
5. Power Plant Engineering

**Professional Elective-V**

1. Electric and Hybrid vehicles
2. Cryogenics
3. Automation in Manufacturing
4. Industrial Hydraulics and Pneumatics
5. Noise Control