

B.Tech in Mechanical Engineering with specialization in Mechatronics

I & II Semester



Physics Cycle

- Engineering Mathematics –I
- Physics
- Communicative English
- Problem Solving Through Programming
- Engineering Graphics
- Physics Lab
- Problem Solving Through Programming Lab
- Communicative English Lab

Chemistry Cycle

- Engineering Mathematics – II
- Chemistry
- Basics of Electrical Engineering
- Workshop Practice
- Sociology and Elements of Indian History for Engineers
- Chemistry Lab
- Electrical Engineering Lab

III Semester



- Mathematics for Civil & Mechanical Engineers
- Economics for Engineers
- Introduction to Material Science
- Engineering Mechanics
- Fluid Mechanics
- Materials Testing Lab
- Fluid Mechanics and Machinery Lab
- Mandatory course
- **Mandatory course**
 - Energy Studies

IV Semester



- Kinematics and Theory of Machines
- Basic Thermodynamics
- Manufacturing Processes-I
- Design of Machine Elements –I
- Machine Drawing
- Business Communication and Presentation skills
- Foundry Practice
- Workshop – II

V Semester



- Manufacturing Processes-II
- Applied Thermodynamics
- Design of Machine Elements – II
- Control Engineering
- CAD/CAM
- Metrology and Measurements
- Energy Conversion Lab
- Design and Metrology Lab

VI Semester



- Turbomachinery
- Finite Element Methods
- Heat and Mass Transfer
- Mechanical Vibrations
- Elective – I
 - Fundamentals of robotics
 - Digital and Power electronics
 - Electrical Machines and Drives
- Elective – II
 - Microprocessors and microcontrollers
 - Sensor and actuators
 - Solid-state devices and circuits
- Heat and Mass Transfer Lab
- Computer-Aided Simulation Lab

VII Semester



- Elective – III
 - Virtual Instrumentation
 - Design of Mechatronics systems
 - Digital Image Processing
- Elective – IV
 - Robotics and Machine Vision system
 - Optronics
 - Medical Mechatronics
- Elective – V
 - Process Automation
 - Electronic devices and circuits
 - Underwater robotics
- Elective – VI
 - Embedded systems
 - Artificial intelligence
 - Service and field robots
- Open Elective-I
 - Project Management
 - Non-Destructive Testing
 - Industrial Ergonomics
- Open Elective-II
 - Research methodology
 - Automobile Engineering
- Project Work –I

VIII Semester



- Open Elective-III
 - Total Quality Management
 - Intellectual Property Rights
- Open Elective-IV
 - Micro Electro Mechanical Systems
 - Supply Chain Management
- Internship/ Project work -II

