# Proposed Course Structure
# of
# B.Tech-Mechanical Engineering
# 2024-25



Rajiv Gandhi Institute of Petroleum Technology

(Institution of National Importance)  Jais, Amethi-229304, Uttar Pradesh

# Course: B.Tech in Mechanical Engineering

| SEMESTER-I | | | |
|---|---|---|---|
| **Course Code** | **Course** | **Credit system** | **Total credit** |
| PY111 | Classical Physics (IS) | 3-1-0 | 11 |
| CY111 | Organic & Hydrocarbon Synthesis (IS) | 3-1-0 | 11 |
| MA123 | Applied Mathematics – I (IS) | 3-1-0 | 11 |
| CH161 | Engineering Thermodynamics (IE) | 3-1-0 | 11 |
| ME131 | Workshop (EP) | 0-0-3 | 3 |
| PY101L | Physics Lab (IS) | 0-0-2/2 | 1 |
| CY101L | Chemistry Lab (IS) | 0-0-2/2 | 1 |
| | **Total Credits** | | **49** |
| LM101 | Basic English (LM) | 1-2-0 | 7 |
| HU101 | Universal Human Value (HU) | 1-1-0 | 5 |

| SEMESTER-II | | | |
|---|---|---|---|
| **Course Code** | **Course** | **Credit system** | **Total credit** |
| PY121 | Modern Physics (IS) | 2-1-0 | 8 |
| MA124 | Applied Mathematics – II (IS) | 3-1-0 | 11 |
| CY121 | Inorganic & Physical Chemistry (IS) | 3-1-0 | 9 |
| CS101 | Computer Programming (IE) | 3-1-0 | 11 |
| CH121 | Fluid Mechanics (IE) | 3-1-0 | 11 |
| PE101 | Mechanical Engg. Practices (EP) | 1-0-2 | 5 |
| PY121L | Physics Lab (IS) | 0-0-2/2 | 1 |
| CY121L | Chemistry Lab (IS) | 0-0-2/2 | 1 |
| ME121 | Engineering Graphics (EP) | 0-0-3 | 3 |
| CS101L | Computer Programming Lab (IE) | 0-0-2 | 2 |
| | **Total Credits** | | **62** |
| HU102 | Community Internship (HU) | 1-1-0 | 5 |

| SEMESTER-III | | |
|---|---|---|
| **Course** | **Credit system** | **Total credit** |
| Fluid Machinery (DC) | 3-0-0 | 9 |
| Engineering Mechanics (DC) | 3-1-0 | 11 |
| Applied Mathematics – III (IS) | 3-1-0 | 11 |
| Applied Thermodynamics (DC) | 3-1-0 | 11 |
| Fundamentals of Electrical & Electronics Engineering (IE) | 3-1-0 | 11 |
| Fundamentals of Electrical & Electronics Engineering Lab (IE) | 0-0-2 | 2 |
| Mechanical Engineering Lab (DC) | 0-0-2 | 2 |
| Fluid Machinery lab (DC) | 0-0-2 | 2 |
| **Total Credits** | | **59** |

| SEMESTER-IV | | |
|---|---|---|
| **Course** | **Credit system** | **Total credit** |
| Heat and Mass Transfer (IE) | 3-1-0 | 11 |
| Drilling Technology (DC) | 3-0-0 | 9 |
| Theory of Machines (DC) | 3-0-0 | 9 |
| Numerical Methods (IS) | 2-1-0 | 8 |
| Material Science and SOM (IE) | 3-0-0 | 9 |
| Professional Communications (LM) | 2-1-0 | 8 |
| Theory of Machines Lab (DC) | 0-0-2 | 2 |
| Heat Transfer Lab (DC) | 0-0-2 | 2 |
| Strength of Material lab (DC) | 0-0-2 | 2 |
| **Total Credits** | | **60** |
| Group Discussion (EP) | 0-0-2 | 2 |

| SEMESTER-V | | |
|---|---|---|
| **Course** | **Credit system** | **Total credit** |
| Design of Machine Elements (DC) | 3-0-0 | 9 |
| IC Engine (DC) | 2-1-0 | 8 |
| Manufacturing Process – I (DC) | 2-1-0 | 8 |
| Refrigeration and Air Conditioning (DC) | 2-1-0 | 8 |
| Measurement, Metrology, and Control (DC) | 3-0-0 | 9 |
| Strength of Materials-II (DC) | 3-0-0 | 9 |
| Mechanical Engineering lab -I (IC & RAC) (DC) | 0-0-2 | 2 |
| Machine Drawing (EP) | 0-0-2 | 2 |
| B.Tech Project (DP) | 0-0-5 | 5 |
| **Total Credits** | | **60** |
| Seminar (EP) | 0-0-2 | 2 |

| SEMESTER-VI | | |
|---|---|---|
| **Course** | **Credit system** | **Total credit** |
| Vibrations and Equipment design (DC) | 3-1-0 | 11 |
| Industrial Engineering & Operation Research (DC) | 3-0-0 | 9 |
| Power Plant Engineering (DC) | 3-1-0 | 11 |
| Corrosion Engineering (DC) | 2-1-0 | 8 |
| Production Planning and Control (DC) | 2-1-0 | 8 |
| Mechanical engineering Lab-II (Production) (DC) | 0-0-2 | 2 |
| B.Tech Project (DP) | 0-0-5 | 5 |
| Summer Internship (DP) | 0-0-5 | 10 |
| **Total Credits** | | **57** |

| SEMESTER-VII | | |
|---|---|---|
| **Course** | **Credit system** | **Total credit** |
| Automobile engineering (DC) | 2-0-0 | 6 |
| CAD & CAM (DC) | 2-0-0 | 6 |
| DE 1 | 3-0-0 | 9 |
| DE 2 | 3-0-0 | 9 |
| Digital Technology (OE) | 3-0-0 | 9 |
| Foundations of Management (LM) | 3-0-0 | 9 |
| Sociology of Industry and Work Culture (HU) | 2-0-0 | 6 |
| CAD/CAM Lab (DC) | 0-0-2 | 2 |
| **Total Credits** | | **56** |

| SEMESTER-VIII | | |
|---|---|---|
| **Course** | **Credit system** | **Total credit** |
| Finite Element Analysis (DC) | 3-0-0 | 9 |
| Industrial Pollution and Control (DC) | 2-0-2 | 8 |
| DE 3 | 3-0-0 | 9 |
| DE 4 | 3-0-0 | 9 |
| Sustainability & Climate Change (OE) | 3-0-0 | 9 |
| Principle of Economics (LM) | 3-0-0 | 9 |
| Organizational Psychology (HU) | 2-0-0 | 6 |
| **Total Credits** | | **59** |

| DEPARTMENT ELECTIVES OFFERED | | | |
|---|---|---|---|
| **Stream** | **Thermal Engineering** | **Drilling Engineering** | **Manufacturing Engineering** |
| DE1 (2-0-0) | Turbo Machinery | Drilling vibrations and telemetry | Manufacturing Processes – II |
| DE2 (2-0-0) | Thermal Environment Control | Advanced drilling engineering | Additive manufacturing |
| DE3 (3-0-0) | CAD of thermal system | Drilling system design | Micro-manufacturing process/Total quality management |
| DE4 (3-0-0) | Computational Fluid Dynamics | Computational Fluid Dynamics/Pipeline transportation of oil & gas | Computer Integrated Manufacturing |