**Course Outcomes and Program Outcomes**

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| **Class & Semester:** TY & Sixth | **Program:** Mechanical Engineering |
| **Course:** Industrial Engineering and Quality Control  | **Course Code: 22657** |

**Program Outcome:**

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| --- | --- |
| PO1 | **Basic and Discipline specific knowledge:** Apply knowledge of basic mathematics, science and engineering fundamentals and engineering specialization to solve the engineering problems. |
| PO2 | **Problem analysis:** Identify and analyse well-defined engineering problems using codified standard methods. |
| PO3 | **Design/ development of solutions :** Design solutions for well-defined technical problems and assist with the design of systems components or processes to meet specified needs. |
| PO4 | **Engineering Tools, Experimentation and Testing**: Apply modern engineering tools and appropriate technique to conduct standard tests and measurements. |
| PO5 |  **Engineering practices for society, sustainability and environment:** Apply appropriate technology in context of society, sustainability, environment and ethical practices |
| PO6 | **Project Management**: Use engineering management principles individually, as a team member or a leader to manage projects and effectively communicate about well-defined engineering activities. |
| PO7 | **Life-long learning**: Ability to analyse individual needs and engage in updating in the context of technological changes. |

**Program Specific Outcomes:**

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| --- | --- |
| PSO1 | **Modern Software Usage:** Use latest Mechanical engineering related softwares for simple design, drafting, manufacturing, maintenance and documentation of mechanical engineering components and processes. |
| PSO2 | **Equipment and Instruments:** Maintain equipment and instruments related to Mechanical Engineering. |
| PSO3 | **Mechanical Engineering Processes:** Manage Mechanical engineering processes by selecting and scheduling relevant equipment, substrates, quality control techniques, and operational parameters. |

**CO Statements:**

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| **CO - ID** | **After successful completion of this course the student will be able to:** | **Level** | **Content** |
| M22657\_a | Apply work study techniques to optimize manufacturing processes. | 3 Applying | Topic-1 |
| M22657\_b | Prepare detailed sequence of operations for manufacturing of components. | 3 Applying | Topic-2 |
| M22657\_c | Apply ergonomics principle for designing simple mechanical components. | 3 Applying | Topic-3 |
| M22657\_d | Interpret the data obtained from the different quality processes. | 3 Applying | Topic-4 |
| M22657\_e | Interpret control charts for variable and attribute data. | 3 Applying | Topic-5 |

**CO-PO Mapping:**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO 1** | **PO 2** | **PO 3** | **PO 4** | **PO 5** | **PO 6** | **PO 7** | **PSO 1** | **PSO 2** | **PSO 3** |
| **M22445\_a** | **3** | **2** |  | **2** |  | **1** |  |  | **2** | **2** |
| **M22445\_b** | **3** | **2** | **2** | **2** | **1** | **1** | **1** |  | **2** | **2** |
| **M22445\_c** | **2** | **2** | **2** | **2** | **2** | **1** | **2** |  | **2** | **2** |
| **M22445\_d** | **2** | **2** | **2** |  | **2** | **1** | **2** |  | **2** | **2** |
| **M22445\_e** | **2** | **2** | **2** |  | **2** | **1** | **2** |  | **2** | **2** |

**NOTE**: Enter correlation levels 1, 2 or 3 as defined below:

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)*If there is no correlation, put “-”*

Course Incharge Academic Coordinator HOD