Justification of CO-PO Mapping:

NOTE: Enter correlation levels 1, 2 or 3 as defined as 1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

If there is no correlation, put "-"

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PSO 1	PSO 2	PSO 3
CO	**Basic and Discipline specific knowledge:** Apply knowledge of basic mathematics, science and engineering fundamentals and engineering specialization to solve the engineering problems.	**Problem analysis:** Identify and analyze well-defined engineering problems using codified standard methods.	**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.	**Engineering Tools, Experimentation and Testing:** Apply modern engineering tools and appropriate technique to conduct standard tests and measurements.	**Engineering practices for society, sustainability, and environment:** Apply appropriate technology in context of society, sustainability, environment and ethical practices.	**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.	**Life-long learning:** Ability to analyze individual needs and engage in updating in the context of technological changes.	**Modern Software Usage:** Apply the latest mechanical engineering software tools for simple design, drafting, manufacturing, maintenance, and documentation of mechanical components and processes.	**PSO2: Maintenance and selection of machines, equipment, instruments:** Select and maintain appropriate machines, equipment, and instruments relevant to various domains of Mechanical Engineering.	**PSO3: Manage Mechanical Process:** Efficiently manage mechanical processes by selecting and scheduling suitable machinery, equipment, materials, quality control techniques, operational parameters, and software to ensure economical and effective operations.

C314340-1	3: Basic and Discipline specific knowledge: Strong knowledge of CNC machines, programming and machining fundamentals is required.			Engineering Tools, Experimentation and Testing:			2: Life Long Learning:	-	3: PSO2 – Maintenance and selection of machines:.	3: PSO3 – Manage Mechanical Process:
C314340-2	3: Basic and Discipline Specific Knowledge: Strongly required as understanding of milling processes, cutters and machine operations is necessary to produce the component.	2: Problem Analysis: Moderately required to analyze cutting conditions, feed rate and tool selection during milling operation.	2: Design/ Development of Solutions: Moderately required while selecting the proper machining sequence and setup for milling the component.	2: Engineering Tools: Moderately required as students use milling machines and measuring tools for producing the job.	-	2: Project Management: Moderately required for managing time, resources and teamwork during workshop practice.	2: Life Long Learning: Moderately required to enhance knowledge of modern machining practices.	-	3: PSO2 – Maintenance and selection of machines: Strongly required for proper machine and tool selection.	3: PSO3 – Manage Mechanical Process: Strongly required for effective machining process management.

C314340- 3	3: Basic and Discipline Specific Knowledge: Strongly required as knowledge of casting principles, moulding materials and pattern design is essential.	2: Problem Analysis: Moderately required to analyze casting defects and select proper moulding techniques.	2: Design/ Development of Solutions: Moderately required for designing mould cavity and selecting appropriate casting method.	2: Engineering Tools: Moderately required while preparing moulds and performing casting operations. .	-	2: Project Management: Moderately required in planning casting operations and coordinating activities	2: Life Long Learning: Moderately required to update knowledge about modern casting methods.	-	3: PSO2 – Maintenance and selection of machines: Strongly required for selecting casting equipment and materials.	3: PSO3 – Manage Mechanical Process: Strongly required for managing casting operations effectively.
C314340-4	3: Basic and Discipline Specific Knowledge: Strongly required as knowledge of metal forming processes like forging, rolling and pressing is necessary.	2: Problem Analysis: Moderately required to analyze deformation conditions and material behavior.	2: Design/ Development of Solutions: Moderately required while selecting suitable forming process for manufacturing component.	2: Engineering Tools: Moderately required to use forming machines and tools.	-	2: Project Management: Moderately required for handling equipment and managing forming operations.	2: Life Long Learning: Moderately required for learning advanced forming techniques	-	3: PSO2 – Maintenance and selection of machines: Strongly required to select appropriate forming machines and equipment.	3: PSO3 – Manage Mechanical Process: Strongly required to manage forming operations efficiently.

C314340-5	3: Basic and Discipline Specific Knowledge: Strongly required as understanding of welding, brazing and soldering processes is necessary.	2: Problem Analysis: Moderately required to analyze joint strength, defects and process parameters.	2: Design/ Development of Solutions: Moderately required for selecting suitable joining method for the given application.	2: Engineering Tools: Moderately required while using welding equipment and inspection tools.	-	2: Project Management: Moderately required while performing joining operations safely and efficiently.	2: Life Long Learning: Moderately required to upgrade knowledge about modern joining technologies.	-	3: PSO2 – Maintenance and selection of machines: Strongly required for selecting welding machines and equipment.	3: PSO3 – Manage Mechanical Process: Strongly required for managing joining operations effectively.

Course Co-ordinator **HOD**