

**b) Pemetaan PLO - IEG**

PLO	MQF 2.0 DOMAIN	PROGRAM LEARNING OUTCOMES, PLO	IEG ELEMENT	
PLO1	MQF 1: Knowledge and Understanding	Engineering Knowledge - Apply knowledge of mathematics, natural science, engineering fundamentals and an engineering specialization to the solution of complex chemical engineering problems.	IEG1	Thinking
PLO2	MQF 2: Cognitive Skills MQF 3e: Numeracy Skills	Problem Analysis - Identify, formulate, research literature and analyses complex chemical engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.	IEG1	Thinking
PLO3	MQF 2: Cognitive Skills MQF 3e: Numeracy Skills	Design/Development of Solutions - Design solutions for complex chemical engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.	EG1 EG2	Thinking Balanced
PLO4	MQF 2: Cognitive Skills MQF 3a: Practical Skills	Investigation - Conduct investigations of complex problems using research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions.	IEG1	Thinking
PLO5	MQF 3d: Digital Skills	Modern Tool Usage - Create, select and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, to complex chemical engineering problems, with an understanding of the limitations.	IEG1	Thinking
PLO6	MQF 5: Ethics and Professionalism	The Engineer and Society - Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice and solutions to complex chemical engineering problems.	EG1 EG2	Thinking Balanced
PLO7	MQF 3f: Leadership, Autonomy and Responsibility	Environment and Sustainability - Understand and evaluate the sustainability and impact of professional engineering work in the solution of complex chemical engineering problems in societal and environmental contexts.	EG1 EG2	Thinking Balanced

	MQF 5: Ethics and Professionalism			
PLO8	MQF 5: Ethics and Professionalism	Ethics - Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.	EG2	Balanced
PLO9	MQF 3b: Interpersonal Skills MQF 3f: Leadership, Autonomy and Responsibility	Individual and Team Work - Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings.	EG5	Holistic
PLO10	MQF 3c: Communication Skills	Communication - Communicate effectively on complex chemical engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.	EG4	Articulate
PLO11	MQF 4: Personal and Entrepreneurial Skills	Project Management and Finance - Demonstrate knowledge and understanding of engineering management principles and economic decision-making and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.	EG3	Entrepreneurial
PLO12	MQF 4: Personal and Entrepreneurial Skills	Life Long Learning - Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.	EG5	Holistic