

Program Assessment and Evaluation Matrix and Plan (IQ-10)

PO Code	PO Statement	Performance Indicators (PI)	Codes of Key Course(s) for the PI(s)	Assessment Methods			Evaluation Method(s)	Standards
				A1	A2	A3		
a	An ability to apply knowledge of mathematics, physical and information sciences, and engineering sciences to the practice of industrial engineering.	1. Choose the appropriate mathematical, science, and engineering principles in solving problems in engineering.	M-01 to 09, S-01 to 03, E-01-10, L01-04, P-01 to P-04, P-06 to P-42	Locally developed examination	See template for direct assessment of program outcome Rubric (a)		Meeting and Consultation with the committee and Stakeholders	60% of the students get a rating of 70%
		2. Examine different approaches in solving problems in engineering and choose the most effective approach.						
		3. Apply the appropriate mathematical, science, and engineering principles to arrive at a solution						
b	An ability to design and conduct experiments, as well as to analyze and interpret data.	1. Conduct experiments in accordance with good and safe laboratory practice.	L-01 to L-14, P-27, E-01 to 03	Laboratory Exercises	Laboratory Exercises Rubric		Meeting and Consultation with the committee	60% of the students get a rating of 70%
		2. Operate equipment and instruments with ease						
		3. Analyze data, validate experimental values against theoretical values to determine possible experimental errors, and provide valid conclusions.						
c	An ability to design, build, improve, and install systems or processes which are efficient, effective, as well as robust to meet desired needs within identified constraints.	1. Consideration of economic constraints	E-10, A-05, L-04, P-03, P-04	Culminating Design Project	Culminating Design Project Rubric		Meeting and Consultation with the committee	60% of the students get a rating of 70%
		2. Manufacturability and sustainability in accordance with standards						
		3. Consideration of health and safety/environmental constraints						
d	An ability to work effectively in multi-disciplinary and multi-cultural teams.	1. Take responsibility as an individual or as a team member fulfilling appropriate roles to assure team success.	E-08, E-09, E-10, A-05, P-13 to P-26	Group Project	Rubric for Individual and Team Work		Meeting and Consultation with the committee	60% of the students get a rating of 70%
		2. Contribute useful inputs in relation to the team's objective.						
		3. Communicate freely to teammates, give and provide feedback and suggestion to improve team outputs.						
e	An ability to recognize, formulate, and solve engineering problems.	1. Ability to identify an engineering problem (Statement of the Problem)	P-28, P-29, P-30, P-31, P-32, P-33, P-34, P-35, P-36, P-37	Engineering Research Project	Rubric for Company Study		Meeting and Consultation with the committee	60% of the students get a rating of 70%
		2. Ability to formulate engineering solutions to a given problem(Design/Research Methodology)						
		3. Ability to apply the best solution to an engineering problem(Summary and Conclusion)						
f	A recognition of professional, social, and ethical responsibility.	1. Understand the code of ethics relevant to the practice of the profession	P-28, P-29, P-30, P-31, P-32, P-33, P-34, P-35, P-36, P-37	Case Problem	Culminating Design Project	Rubric for Ethics	Meeting and Consultation with the committee	60% of the students get a rating of 70%
		2. Evaluate the ethical extent of a discipline-related problem						
		3. Apply relevant principles of ethics						

g	An ability to effectively communicate orally and in writing using the English language.	1. Express ideas clearly in English language 2. Effectively communicate with diverse audiences 3. Effectively communicate in a variety of ways	M-01 to 09, S-01 to 03, E-01-10, L01-03, P-28, P-29, P-30, P-31, P-32, P-33, P-34, P-35, P-36, P-37	Culminating Design Project	Oral and Written Report	Rubric for Effective communication	Meeting and Consultation with the committee	60% of the students get a rating of 70%
h	An understanding of the effects of engineering solutions in a comprehensive context.	1. Recognize the current effects of engineering solutions in a comprehensive context (e.g., new technologies, new regulations, environmental and energy issues, etc.) 2. Apply appropriate engineering solutions to address the effect of current critical issues.	E-07, E-09, E-10, A-07, P-04, L-06 TO L-09, P-06 TO P-23, P-25, P-27, P-29, P-30, P-32, P-34, P-36-39	Culminating Design Project	Rubric for Solutions with Multiple Constraints and Standards		Meeting and Consultation with the committee	60% of the students get a rating of 70%
i	An ability to engage in life-long learning and an understanding of the need to keep current of the developments in the specific field of specialization.	1. Learn independently 2. Acquire relevant knowledge from outside sources to solve problems 3. Recognize one's weaknesses or mistakes as learning opportunities	M-01 TO M-09, S-01 TO S-03, L-01 TO L-09, E-01 TO E-10, A-01 TO A-07, P-01 TO P-43	On the job training	Rubric for Life Long Learning		Meeting and Consultation with the committee	60% of the students get a rating of 70%
j	An ability to use the techniques, skills, and engineering tools necessary for engineering and business practice.	1. Apply appropriate techniques, skills, and modern tools to perform a discipline-specific engineering task. 2. Demonstrate skills in applying different techniques and modern tools to solve engineering problems. 3. Recognize the benefits and constraints of modern engineering tools.	E-07, E-08, A-01 TO A-03, A-06, P-01 TO P-17, P-21 TO P-43	Engineering Software based tools applied to design course	Rubric for Modern Tool Usage		Meeting and Consultation with the committee	60% of the students get a rating of 70%
k	An ability to perform services in the form of analysis, design, preparation of plans, specifications, estimates, and implementation of work standards, statistical process control systems, production planning and materials control systems, manufacturing and service facilities operations.	1. Ability to identify an engineering problem (Statement of the Problem) 2. Ability to formulate engineering solutions to a given problem(Analysis and Formulation of Alternative Courses of Action) 3. Ability to apply the best solution to an engineering problem(Conclusion and Recommendations)	P-28, P-29, P-30, P-31, P-32, P-33, P-34, P-35, P-36, P-37	Group Project	Rubric for Company Study		Meeting and Consultation with the committee	60% of the students get a rating of 70%
l	Understand the impact of professional engineering solutions in societal and environmental contexts, demonstrate knowledge of, and need for sustainable development.	1. Identify the effect of professional engineering solutions to society and the environment. 2. Select appropriate professional engineering solutions to address social and environmental problems. 3. Apply professional engineering solutions in solving societal issues towards sustainable development.	E-09, L-09, P-18	Locally developed examination	Rubric for Environment and Sustainability		Meeting and Consultation with the committee	60% of the students get a rating of 70%
	Demonstrate knowledge and understanding of engineering and management principles and apply	1. Understands engineering and management principles	L-07, P-08, P-34	Group Project	Rubric for Project Management		Meeting and Consultation with the committee	60% of the students get a rating of 70%

m	these to one's work, as a member and leader in a team, to manage projects and in multi-disciplinary environments.	2. Applies engineering and management principles to an assigned task and in multidisciplinary environments						
		3. Manages assigned projects in multidisciplinary environments						
n	Demonstrate knowledge and understanding of engineering and management principles that address national and local issues.	1. Ability to identify an engineering problem that will deal with pressing local and national issue.	P-01 to P-13, P-15 to P-19	Culminating Design Project	Oral and Written Report	Rubric for Patriotism	Meeting and Consultation with the	60% of the students get a rating of 70%
		2. Ability to formulate engineering solutions that will deal with pressing local and national issue.						
		3. Ability to apply the best solution that will deal with pressing national and local issue.						
o	Integrate creative, effective, and implement Christian-like concepts in managing projects.	1. Responsible and Honest in doing activities	P-01 to P08, P-10 to P13, P-13 to P19, A-07	Culminating Design Project	Oral and Written Report	Rubric for God-loving	Meeting and Consultation with the committee	60% of the students get a rating of 70%
		2. Personal Trait/Character						
		3. Courtesy in Written Calculations						