

# IMPROVEMENT PLAN INDUSTRIAL ENGINEERING

2024-2025

**Master of Science**  
**in**  
**Engineering Management**



## College of Engineering

### Improvement Plan 2024-2025

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## INTRODUCTION

This Improvement Plan has been developed as a direct, strategic response to the findings, data, and performance gaps highlighted in the Operational Plan Report for master of engineering management in the department of industrial Engineering. The operational report evaluated our progress against predetermined strategic goals, annual targets, and Key Performance Indicators (KPIs) set for the achievement.

The primary objective of this Improvement Plan is to systematically bridge the gaps identified and transforming recommended actions into measurable milestones. This document serves as a roadmap to embed quality into day-to-day educational, research, and administrative operations. Building an Improvement Plan based directly on an Operational Plan Report requires bridging the gap between what actually happened (the performance data, KPIs, and targets missed or achieved in the report) and what needs to happen next to get back on track. An operational plan report looks backward at performance; the improvement plan looks forward to course-correct.

## Master of Science in Engineering Management

Master of Science in Engineering Management at Industrial Engineering department is a graduate program that combine technical engineering depth with managerial, analytical, and leadership skills. It prepares students to move from purely technical roles into positions where they manage people, systems, and large-scale operations. The program focuses on developing the ability to optimize processes, make data-driven decisions, and lead engineering-driven organizations effectively through courses such as operations management, project management, and engineering economics.

Within the Industrial Engineering department, the program gains its foundation from IE's core mission: improving efficiency, integrate technology for and sustainable systems performance. The focus of program allows students to understand both the technical and organizational sides of engineering systems, making them capable of managing complex operations and technological change.

Graduates of this program are equipped to take on roles such as project manager, operations manager, quality manager, and supply chain manager across industries like manufacturing, logistics, energy, and construction. In regions undergoing rapid industrial growth this program is valuable because it develops professionals who can lead modernization, improve operational performance, and manage large-scale engineering initiatives.

### Mission

“To cultivate ethically grounded professionals who master the synergy of engineering and management. We prepare our graduates to solve complex industrial challenges, lead diverse teams, and pioneer sustainable solutions for the evolving global economy.”

### Objectives

- ❖ **PO1: Developing competition skills:** Provide quality teaching in engineering management that builds up graduates' technical, analytical, and professional competencies based on modern developments and made possible through local and global collaborations.
- ❖ **PO2: Innovation and Scientific Research:** Perform innovations and applications of research in engineering management that align with national strategies, industry requirements, and sustainable economic development.
- ❖ **PO3: Responsibility and community participation:** Strengthening the responsibility and community participation.

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## Improvement Plan based on Operational Plan (2023–2024)

Based on the operational plan excerpt, only **KPI-9** has **not achieved the target**: **KPI-9**: Increasing percentage of registered students in continuous learning programs, where Target: 30%, Current Achievement: 20%

### Improvement Plan for KPI-9 for Academic Year 2024–2025

Objective	Action Plan	Timeline	Responsibility
Increase the percentage of registered students in continuous learning programs from 20% to 30%	Conduct awareness campaigns on the benefits of continuous learning programs through orientation sessions, emails, social media, and student meetings.	Aug 24 – Aug 25	Quality and Research Unit, Student Affairs Department
Improve student participation in continuous learning programs	Introduce a structured annual calendar of workshops, certification courses, webinars, and skill development programs aligned with student interests and industry needs.	Aug 24 – Aug 25	Academic Departments, Quality and Research Unit
Enhance accessibility and convenience of learning programs	Increase the number of online and blended learning opportunities and provide flexible schedules for participation.	Aug 24 – Aug 25	IT Unit, Academic Departments
Strengthen student engagement and motivation	Establish a recognition system including certificates, digital badges, awards, and co-curricular credits for active participants.	Aug 24 – Aug 25	Student Affairs Department, Quality and Research Unit
Monitor enrollment and participation trends	Conduct quarterly reviews of registration data and identify departments with low participation for targeted interventions.	Aug 24 – Aug 25	Quality and Research Unit
Increase faculty involvement in promoting programs	Require faculty advisors to encourage students to enroll and track participation during advising sessions.	Aug 24 – Aug 25	Heads of Departments, Faculty Advisors

## Improvement Plan based on KPI Parameters (2023–2024)

Based on the KPI Analysis for **Academic Year 2023–2024**, the following KPIs **did not achieve the target benchmark**:

KPI	Target	Actual	Status
Students' satisfaction with services provided	4.0	3.95	Not Achieved
Percentage of students who published research in refereed journals	20%	0%	Not Achieved
Percentage of students who presented papers at conferences	20%	0%	Not Achieved
Number of patents and innovative products	1	0	Not Achieved
Number of national/international excellence awards obtained annually by students and staff	1	0	Not Achieved

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Improvement Plan for Academic Year 2024–2025

Objective	Action Plan	Timeline (Aug 2024 – Aug 2025)	Responsibility
Improve students' satisfaction with services provided from 3.95 to $\geq 4.2$	Conduct student satisfaction surveys every semester; establish a student grievance redressal committee; improve academic advising, library, laboratory and administrative services; conduct periodic review meetings and implement corrective actions based on student feedback.	Aug 24 – Aug 25	Academic Development and Quality Committee, Department Chairperson
Achieve at least 20% student publications in refereed journals	Organize research methodology and scientific writing workshops; assign faculty mentors to final-year projects; identify suitable journals; provide publication incentives and proofreading support.	Aug 24 – Aug 25	Committee of the Scientific Research, Innovation and Graduate Studies
Achieve at least 20% student participation in conference presentations	Conduct awareness sessions on conferences; allocate travel and registration support; encourage project-based paper development; organize departmental research symposiums before external conferences.	Aug 24 – Aug 25	Committee of the Scientific Research, Innovation and Graduate Studies
Obtain at least one patent or innovative product	Identify innovative projects with commercialization potential; conduct workshops on intellectual property rights (IPR); establish an innovation review panel; facilitate patent drafting and filing support.	Aug 24 – Aug 25	Committee of the Scientific Research, Innovation and Graduate Studies
Secure at least one national or international excellence award	Identify relevant student and faculty awards; nominate eligible candidates; provide coaching and portfolio preparation support; recognize achievements through departmental initiatives.	Aug 24 – Aug 25	Academic Development and Quality Committee

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## Improvement Plan based on Stakeholder Survey (2023-24)

### Improvement Plan for Academic Year IT facilities and Infrastructure

(Based on stakeholder survey results for parameters below the target score of 4.00)

Objective	Action Plan	Timeline (Aug–Aug)	Responsibility
Improve software and updates (Q6)	Install licensed and updated software regularly; establish quarterly software audit and update mechanism	Aug 24 – Aug 25	Academic Advising and Student Affairs Committee
Upgrade age of hardware (Q7)	Replace outdated computers and peripherals in phases; procure systems with higher configurations	Aug 24 – Aug 25	Committee of Plan and Curricula
Improve hardware and software facilities (Q10)	Increase availability of lab systems and educational software; improve maintenance support	Aug 24 – Aug 25	Committee of Plan and Curricula
Enhance accessibility of e-resources (Q11)	Improve internet bandwidth, remote access, and user-friendly access to digital resources	Aug 24 – Aug 25	Academic Advising and Student Affairs Committee
Strengthen support systems (Q5)	Create IT helpdesk support mechanism and grievance response tracking system	Aug 24 – Aug 25	Academic Advising and Student Affairs Committee

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**Improvement Plan Based on Stakeholder Survey for Satisfaction of Quality of Orientation**

Objective	Action Plan	Timeline	Responsibility
Improve student satisfaction regarding university life and orientation support	Conduct comprehensive student orientation programs including campus facilities, student services, extracurricular activities, and counseling support	Aug 24 – Aug 25	Orientation Committee, Student Affairs Unit
Enhance academic and career counseling quality	Arrange periodic academic advising sessions and career guidance workshops for students	Aug 24 – Aug 25	Academic Advising and Student Affairs Committee
Improve students' educational experience satisfaction	Introduce interactive learning sessions, mentoring programs, and orientation on academic expectations	Aug 24 – Aug 25	Academic Advising and Student Affairs Committee
Increase students' willingness to recommend the university	Strengthen student engagement through feedback meetings, cultural activities, and communication channels	Aug 24 – Aug 25	Academic Development and Quality Committee
Enhance awareness about university support services	Disseminate orientation manuals, online guidance materials, and helpdesk support	Aug 24 – Aug 25	Committee of Plan and Curricula
Improve stakeholder participation in orientation evaluation	Conduct periodic surveys and feedback collection after orientation activities	Aug 24 – Aug 25	Academic Development and Quality Committee

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Improvement Plan Based on Stakeholder Survey for Evaluation of Faculty Advisor

Objective	Action Plan	Timeline	Responsibility
Improve effectiveness of academic advising	Conduct regular advisor-student meetings to discuss academic progress and challenges	Aug 24 – Aug 25	Department Steering Committee
Enhance communication between faculty advisors and students	Establish structured communication channels through email, LMS, and counseling hours	Aug 24 – Aug 25	Academic Development and Quality Committee
Improve guidance regarding academic regulations and course selection	Organize orientation sessions on curriculum, credit requirements, and academic policies	Aug 24 – Aug 25	Academic Development and Quality Committee
Strengthen student support and mentoring activities	Implement mentoring programs focusing on student motivation and personal development	Aug 24 – Aug 25	Academic Advising and Student Affairs Committee
Increase responsiveness to student concerns	Introduce periodic feedback collection and follow-up mechanisms	Aug 24 – Aug 25	Academic Development and Quality Committee
Improve documentation and monitoring of advising activities	Maintain advising records and meeting reports for continuous monitoring	Aug 24 – Aug 25	Department Steering Committee

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Improvement Plan Based on Stakeholder Survey for Evaluation of Career Counselling Services

Objective	Action Plan	Timeline	Responsibility
Improve awareness of career counselling services among students	Conduct orientation programs and awareness campaigns about available career guidance services	Aug 24 – Aug 25	Program Coordinator
Enhance effectiveness of career guidance sessions	Organize regular workshops on career planning, resume writing, and interview preparation	Aug 24 – Aug 25	Program Coordinator
Improve student readiness for employment opportunities	Arrange training sessions on communication skills, soft skills, and professional development	Aug 24 – Aug 25	Program Coordinator
Strengthen industry exposure for students	Invite industry experts and alumni for seminars, webinars, and interaction sessions	Aug 24 – Aug 25	Department Head
Improve accessibility of career counselling support	Establish fixed counselling hours and online consultation facilities	Aug 24 – Aug 25	Program Coordinator
Enhance monitoring and evaluation of career counselling activities	Conduct periodic student feedback surveys and analyze satisfaction levels	Aug 24 – Aug 25	Academic Advising and Student Affairs Committee

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Improvement Plan Based on Stakeholder Survey for Evaluation of Learning Resources and Materials

Objective	Action Plan	Timeline	Responsibility
Improve availability of learning resources and reference materials	Procure updated textbooks, journals, and reference materials for all departments	Aug 24 – Aug 25	Department Head
Enhance accessibility of digital learning materials	Expand access to e-books, online journals, and digital databases	Aug 24 – Aug 25	Faculty Members, Academic Departments
Improve quality of teaching and learning materials	Encourage faculty members to prepare updated lecture notes, presentations, and course materials	Aug 24 – Aug 25	Faculty Members, Academic Departments
Strengthen utilization of library and e-learning resources	Conduct awareness programs and training sessions on the effective use of library and online resources	Aug 24 – Aug 25	Faculty Members, Academic Departments
Improve infrastructure supporting learning resources	Upgrade internet facilities, computer systems, and multimedia learning tools	Aug 24 – Aug 25	Faculty Members, Academic Departments
Enhance monitoring and feedback on learning resources	Conduct periodic student feedback surveys regarding adequacy and quality of learning materials	Aug 24 – Aug 25	Academic Development and Quality Committee

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**Improvement Plan Based on Stakeholder Survey for Evaluation of Adequacy and Quality of Services**

Objective	Action Plan	Timeline	Responsibility
Improve overall quality of student support services	Conduct regular review meetings to identify and address student service issues	Aug 24 – Aug 25	Academic Advising and Student Affairs Committee
Enhance efficiency of administrative services	Simplify administrative procedures and improve response time for student requests	Aug 24 – Aug 25	Chairman
Improve accessibility of institutional services	Introduce online support systems and helpdesk facilities for students and staff	Aug 24 – Aug 25	Academic Development and Quality Committee
Strengthen maintenance and campus facilities services	Conduct periodic maintenance of classrooms, laboratories, and common facilities	Aug 24 – Aug 25	Academic Development and Quality Committee
Improve communication regarding institutional services	Share timely notifications and updates through email, website, and notice boards	Aug 24 – Aug 25	Academic Development and Quality Committee
Enhance stakeholder feedback and service monitoring	Conduct periodic satisfaction surveys and analyze feedback for corrective actions	Aug 24 – Aug 25	Department Steering Committee

## Improvement Plan Based on Direct Analysis of PLOs (2023–2024)

From the PLO Assessment for Academic Year 2023–2024, the target achievement level for all PLOs is 4.0.

### PLO Achievement Summary

PLO	Actual Achievement	Target	Status
K1	4.315	4.0	Achieved
K2	4.410	4.0	Achieved
K3	4.580	4.0	Achieved
K4	4.440	4.0	Achieved
<b>S1</b>	<b>3.530</b>	<b>4.0</b>	<b>Not Achieved</b>
S2	4.377	4.0	Achieved
S3	4.600	4.0	Achieved
S4	4.180	4.0	Achieved
V1	4.600	4.0	Achieved
V2	4.265	4.0	Achieved
V3	4.592	4.0	Achieved

Therefore, S1 is the only PLO that failed to achieve the target benchmark and requires an improvement plan.

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Improvement Plan to be implemented Year 2024–2025

Objective	Action Plan	Timeline	Responsibility
Improve PLO-S1 achievement from 3.53 to at least 4.0	Review assessment results and identify specific weaknesses contributing to low S1 attainment. Map S1 more effectively with course learning outcomes and assessment methods.	Aug 24 – Aug 25	Department Chairperson, Program Coordinator
Strengthen students' competency related to PLO-S1 through curriculum enhancement	Revise course activities, assignments, case studies, and practical exercises to ensure adequate coverage of S1-related skills.	Aug 24 – Aug 25	Academic Advising and Student Affairs Committee
Enhance student learning through targeted support activities	Conduct workshops, tutorials, remedial classes, and problem-solving sessions focused on S1 competencies.	Aug 24 – Aug 25	Course Instructors
Improve teaching and assessment strategies	Introduce active learning methods, project-based learning, and continuous formative assessments aligned with S1 outcomes.	Aug 24 – Aug 25	Faculty Members
Monitor student progress and provide early intervention	Analyze mid-semester assessment results, identify at-risk students, and implement corrective measures.	Aug 24 – Aug 25	Academic Advising and Student Affairs Committee
Increase practical exposure and application of S1 skills	Organize seminars, industrial case studies, laboratory activities, and collaborative projects to strengthen attainment.	Aug 24 – Aug 25	Faculty Members, Program Coordinator
Evaluate effectiveness of improvement initiatives	Conduct attainment analysis, compare with previous year results, and document evidence of improvement for quality assurance purposes.	Aug 24 – Aug 25	Program Coordinator
Achieve and sustain target attainment level of 4.0 or above for PLO-S1	Review final attainment results and establish continuous improvement actions for the next academic cycle.	Aug 24 – Aug 25	Department Chairperson,

This improvement plan focuses on the **only underachieved PLO (S1)** and provides a structured continuous improvement cycle from **August 2024 to August 2025**.

## Approval

Position	Name
Academic Development and Quality Committee Coordinator	Dr. Osama Moshebah 



Council / Committee	Academic Development and Quality Committee
Reference No.	QADC-MScEM-1-461
Date	Sept 3, 2024