

IMPROVEMENT PLAN

INDUSTRIAL ENGINEERING

2025-2026



**Master of Science in
Engineering Management**

College of Engineering

Improvement Plan 2025-2026

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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.

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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: Excellence in Teaching and Learning**
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: Contribution to Research and Innovation**
Perform innovations and applications of research in engineering management that align with national strategies, industry requirements, and sustainable economic development.

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- **PO3: Ethical Responsibility, Professional Competency and University Life**
Equip graduates with excellent communication, teamwork, and leadership skills necessary for commitment to societal impact of technology through ethical professional conduct.
- **PO4: Excellence, Sustainability, and Lifelong Development**
Ensure efficient and resourcefulness of program to encourage lifelong learning and support emerging sustainable economy.

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Improvement Plan Based on Operational Plan 2024–25

- **KPI-9:** Percentage of Publications of Faculty Members (50% vs Target 70%)
- **KPI-12:** Percentage of Students' Publications (0% vs Target 20%)
- **KPI-13:** Number of Patents, Innovative Products, and Awards of Excellence (0 vs Target ≥ 2)
- **KPI-7:** Students' Satisfaction with the Service Provided (3.98 vs Target ≥ 4.0)

KPI-9: Percentage of Publications of Faculty Members

Objective	Action Plan	Timeline	Responsibility
Increase faculty publication percentage from 50% to 70%	Set annual publication targets for each faculty member and monitor quarterly progress	Aug2025– Aug 2026	Department Steering Committee
Enhance research and publication skills	Conduct workshops on research methodology, academic writing, and publication in indexed journals	Aug2025–Aug 2026	Academic Development and Quality Committee
Strengthen research support	Establish internal peer-review and manuscript editing support	Aug2025–Aug 2026	Committee of the Scientific Research, Innovation and Graduate Studies
Promote collaborative research	Encourage joint research projects with national and international institutions	Aug2025–Aug 2026	Department Steering Committee
Motivate faculty research output	Introduce publication incentives, awards, and conference support	Aug2025–Aug 2026	Academic Advising and Student Affairs Committee

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KPI-12: Percentage of Students' Publications

Objective	Action Plan	Timeline	Responsibility
Increase student publication rate from 0% to 20%	Integrate research and publication requirements into final-year projects	Aug2025–Aug 2026	Program Coordinators
Develop student research competencies	Conduct workshops on research writing, referencing, and publication procedures	Aug2025–Aug 2026	Academic Development and Quality Committee
Establish faculty mentoring for student research	Assign faculty mentors to guide students in publishing research papers	Aug2025–Aug 2026	Department Steering Committee
Create publication opportunities	Organize student research conferences and student research journals	Aug2025–Aug 2026	Committee of the Scientific Research, Innovation and Graduate Studies
Monitor research output	Review publication progress every semester and provide corrective support	Aug2025–Aug 2026	Academic Development and Quality Committee

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KPI-13: Number of Patents, Innovative Products, and Awards of Excellence

Objective	Action Plan	Timeline (Aug 2025 – Aug 2026)	Responsibility
Achieve at least two patents, innovations, or awards	Identify faculty and student projects with patent or commercialization potential	Aug2025–Aug 2026	Committee of the Scientific Research, Innovation and Graduate Studies
Promote innovation culture	Conduct awareness programs on innovation, entrepreneurship, and intellectual property rights	Aug2025–Aug 2026	Academic Development and Quality Committee
Establish innovation support mechanisms	Form an Innovation and Intellectual Property Cell	Aug2025–Aug 2026	Committee of the Scientific Research, Innovation and Graduate Studies
Facilitate patent filing and product development	Provide technical and financial assistance for patent applications and prototype development	Aug2025–Aug 2026	Committee of the Scientific Research, Innovation and Graduate Studies
Increase participation in competitions and awards	Encourage and support submissions to national and international innovation competitions	Aug2025–Aug 2026	Committee of the Scientific Research, Innovation and Graduate Studies

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KPI-7: Students' Satisfaction with the Service Provided

Objective	Action Plan	Timeline (Aug 2025 – Aug 2026)	Responsibility
Increase student satisfaction score from 3.98 to ≥ 4.0	Conduct detailed service satisfaction surveys to identify improvement areas	Aug2025–Aug 2026	Academic Development and Quality Committee
Improve efficiency of student services	Establish service standards and response-time monitoring mechanisms	Aug2025–Aug 2026	Academic Advising and Student Affairs Committee
Enhance communication and accessibility	Implement an online helpdesk and student feedback tracking system	Aug2025–Aug 2026	Academic Advising and Student Affairs Committee
Improve service quality and professionalism	Conduct customer-service and student-engagement training for staff	Aug2025–Aug 2026	Academic Development and Quality Committee
Continuously monitor satisfaction levels	Conduct mid-year and annual satisfaction surveys and implement corrective actions	Aug2025–Aug 2026	Academic Development and Quality Committee

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Improvement Plan Based on KPI Parameters 2024–2025

Improvement Plan for Academic Year 2025–2026

Objective	Action Plan	Timeline (Aug 2025 – Aug 2026)	Responsibility
Increase students' satisfaction with services from 3.98 to 4	Conduct service quality surveys, identify service gaps, improve administrative response time, enhance student support services and establish a complaint resolution mechanism.	Aug25–Aug 26	Academic Advising and Student Affairs Committee
Increase faculty publication percentage from 50% to 70%	Develop annual research plans, provide publication support, encourage collaborative research, organize research writing workshops and monitor publication progress quarterly.	Aug25–Aug 26	Committee of the Scientific Research, Innovation and Graduate Studies
Achieve 20% student publications in refereed journals	Assign faculty research mentors, integrate publication-oriented research projects, conduct scientific writing workshops and provide incentives for publication.	Aug25–Aug 26	Committee of the Scientific Research, Innovation and Graduate Studies
Obtain at least one patent or innovative product	Identify innovative research outcomes, conduct intellectual property awareness workshops, support prototype development and facilitate patent filing procedures.	Aug25–Aug 26	Committee of the Scientific Research, Innovation and Graduate Studies
Obtain at least one national or international excellence award	Identify award opportunities, nominate qualified students and faculty, provide mentoring and prepare strong award applications and portfolios.	Aug25–Aug 26	Department Steering Committee
Strengthen stakeholder engagement to support quality enhancement and program recognition	Organize community engagement activities, industry collaborations and outreach programs that contribute to institutional visibility and student development.	Aug25–Aug 26	Community Service Committee

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Improvement Plan based on Stakeholder Survey 2024–25

Improvement Plan for IT infrastructure for Academic Year 2025–2026

Objective	Action Plan	Timeline	Responsibility
Improve software updates and system maintenance (Q6)	Implement centralized software update policy and annual AMC for systems	Aug25–Aug 26	Academic Development and Quality Committee
Upgrade outdated hardware (Q7)	Procure new desktops, networking devices, and replace obsolete systems in laboratories	Aug25–Aug 26	Committee of Plan and Curricula
Improve hardware and software availability (Q10)	Expand computer laboratory capacity and install updated academic software packages	Aug25–Aug 26	Academic Development and Quality Committee
Enhance accessibility and usability of e- resources (Q11)	Improve Wi-Fi connectivity and optimize digital library access systems	Aug25–Aug 26	Department Steering Committee

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Improvement Plan Based for Satisfaction of Quality of Orientation for Academic Year 2025–2026

Objective	Action Plan	Timeline	Responsibility
Improve satisfaction with university life and campus experience	Organize student wellness programs, peer-support activities, and orientation follow-up sessions	Aug25–Aug 26	Academic Advising and Student Affairs Committee
Strengthen academic and career counseling services	Conduct monthly counseling sessions and invite industry experts for career awareness programs	Aug25–Aug 26	Academic Advising and Student Affairs Committee
Improve quality of educational orientation and student adaptation	Develop orientation videos, academic handbooks, and online orientation modules	Aug25–Aug 26	Department Steering Committee
Improve recommendation rate of the university among students	Encourage student participation in university events and academic competitions	Aug25–Aug 26	Academic Advising and Student Affairs Committee
Increase student confidence in choosing the university again	Improve responsiveness to student concerns through structured grievance and support systems	Aug25–Aug 26	Department Steering Committee
Enhance continuous quality monitoring of orientation activities	Conduct semester-wise stakeholder satisfaction analysis and corrective action reviews	Aug25–Aug 26	Academic Advising and Student Affairs Committee

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Improvement Plan for Evaluation of Faculty Advisor for Academic Year 2025–2026

Objective	Action Plan	Timeline	Responsibility
Improve quality of academic and personal guidance provided by faculty advisors	Conduct advisor training workshops on counseling and student support strategies	Aug25– Aug 26	Academic Advising and Student Affairs Committee
Enhance student satisfaction with faculty advisor accessibility	Allocate fixed weekly advising hours and provide online consultation options	Aug25– Aug 26	Academic Advising and Student Affairs Committee
Strengthen academic progress monitoring	Implement periodic academic performance review meetings for at-risk students	Aug25– Aug 26	Academic Advising and Student Affairs Committee
Improve career and future planning guidance	Organize career awareness and higher education guidance sessions	Aug25– Aug 26	Academic Advising and Student Affairs Committee
Increase student participation in advising feedback processes	Conduct semester-wise advisor evaluation surveys and corrective action reviews	Aug25–Aug 26	Academic Development and Quality Committee
Improve coordination between advisors and departments	Schedule regular coordination meetings to discuss student issues and improvement strategies	Aug25–Aug 26	Department Steering Committee

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Improvement Plan for Survey for Evaluation of Career Counselling for Academic Year 2025–2026

Objective	Action Plan	Timeline	Responsibility
Improve quality and relevance of career counselling services	Update counselling materials and career resources according to current industry trends	Aug25– Aug 26	Academic Advising and Student Affairs Committee
Strengthen career planning support for students	Conduct individual career assessment and guidance sessions for students	Aug25– Aug 26	Academic Advising and Student Affairs Committee
Increase collaboration with industries and organizations	Establish partnerships with companies for internships, seminars, and recruitment drives	Aug25– Aug 26	Academic Advising and Student Affairs Committee
Improve digital access to career counselling services	Develop online portals and communication platforms for career resources and counselling appointments	Aug25–Aug 26	Department Steering Committee
Strengthen continuous evaluation of counselling effectiveness	Conduct semester-wise stakeholder feedback analysis and corrective action reviews	Aug25–Aug 26	Academic Advising and Student Affairs Committee

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Improvement Plan for Survey for Evaluation of Learning Resources and Materials for Academic Year 2025–2026

Objective	Action Plan	Timeline	Responsibility
Improve adequacy and relevance of learning resources	Review and update library resources according to curriculum requirements and student feedback	Aug25– Aug 26	Academic Advising and Student Affairs Committee
Enhance digital learning support systems	Introduce additional online databases, e-learning platforms, and multimedia educational content	Aug25– Aug 26	Academic Advising and Student Affairs Committee
Improve student engagement with learning resources	Conduct workshops on research skills, academic writing, and use of online databases	Aug25– Aug 26	Committee of the Scientific Research, Innovation and Graduate Studies
Enhance classroom learning facilities	Upgrade smart classroom technologies and audiovisual teaching aids	Aug25–Aug 26	Department Steering Committee
Strengthen quality monitoring of learning resources	Analyze stakeholder feedback periodically and implement corrective improvement measures	Aug25–Aug 26	Academic Development and Quality Committee

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Improvement Plan for Survey for Adequacy and Quality of Services for Academic Year 2025–2026

Objective	Action Plan	Timeline	Responsibility
Improve quality and reliability of institutional services	Establish service standards and monitoring mechanisms for all support units	Aug25– Aug 26	Committee of the Scientific Research, Innovation and Graduate Studies
Enhance effectiveness of student support systems	Expand counselling, grievance handling, and student assistance services	Aug25– Aug 26	Department Steering Committee
Improve infrastructure and facility management	Upgrade classroom facilities, internet services, and campus amenities	Aug25– Aug 26	Academic Development and Quality Committee
Strengthen digitalization of institutional services	Implement online applications, complaint tracking, and information systems	Aug25–Aug 26	Committee of the Scientific Research, Innovation and Graduate Studies

Improvement Plan Based on PLO Analysis 2024–25

The Program Learning Outcomes (PLO) Analysis for the academic year 2024–25 was conducted to evaluate the extent to which students have achieved the intended learning outcomes of the program. The analysis covered all relevant PLOs and assessed student attainment levels through direct and indirect assessment methods in accordance with the institutional quality assurance framework.

The results of the analysis indicate that all Program Learning Outcomes have met or exceeded the established attainment targets. The attainment levels achieved across the various PLOs demonstrate that students have successfully acquired the required knowledge, skills, competencies, and professional attributes expected upon completion of the program. The findings further confirm the effectiveness of the curriculum design, teaching and learning strategies, assessment methods, academic supervision, and student support mechanisms implemented throughout the academic year.

Since all PLO attainment targets have been successfully achieved, no significant gaps or deficiencies have been identified that would require a formal improvement plan or corrective action. The achievement of the targeted attainment levels indicates that the existing academic and quality assurance processes are functioning effectively and contributing positively to student learning and program outcomes.


Although no specific improvement plan is required, the program remains committed to the principle of continuous quality enhancement. The department will continue to monitor PLO attainment on a regular basis through systematic assessment, stakeholder feedback, ongoing monitoring mechanisms will ensure that the attained standards are maintained and that opportunities for further enhancement are identified proactively.

The department will also continue to support innovative teaching methodologies, effective assessment practices, faculty development initiatives, and student-centered learning approaches to sustain the current level of achievement. Periodic reviews by the Program Committee and Quality Assurance Committee will be undertaken to ensure continued alignment with institutional goals, accreditation requirements, and evolving stakeholder expectations.

In conclusion, based on the PLO Analysis for the academic year 2024–25, all Program Learning Outcomes have achieved the prescribed attainment targets. Therefore, no specific improvement plan is required at this stage. The program will focus on sustaining the achieved performance

levels through continuous monitoring, quality assurance practices, and ongoing academic enhancement initiatives to ensure continued excellence in student learning outcomes.

Approval

Position	Name	Signature
Academic Development and Quality Committee Coordinator	Dr. Raafat Elshaer	



Council / Committee	Academic Development and Quality Committee
Reference No.	QADC-MScEM-1-471
Date	Sept 2, 2025