



CONTINUOUS
IMPROVEMENT



INDUSTRIAL ENGINEERING

OPERATIONAL PLAN

FACULTY OF ENGINEERING, UNIVERSITY OF TABUK

Tabuk City , Saudi Arabia







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1. Introduction

The Department of Industrial Engineering (IE) was established in 2010, and enrollment in the preparatory year started in the academic year 2011-2012. The study is of 5 years' duration, including the preparatory year (15 semesters). Figure 1 illustrates the program timeline including future plan.

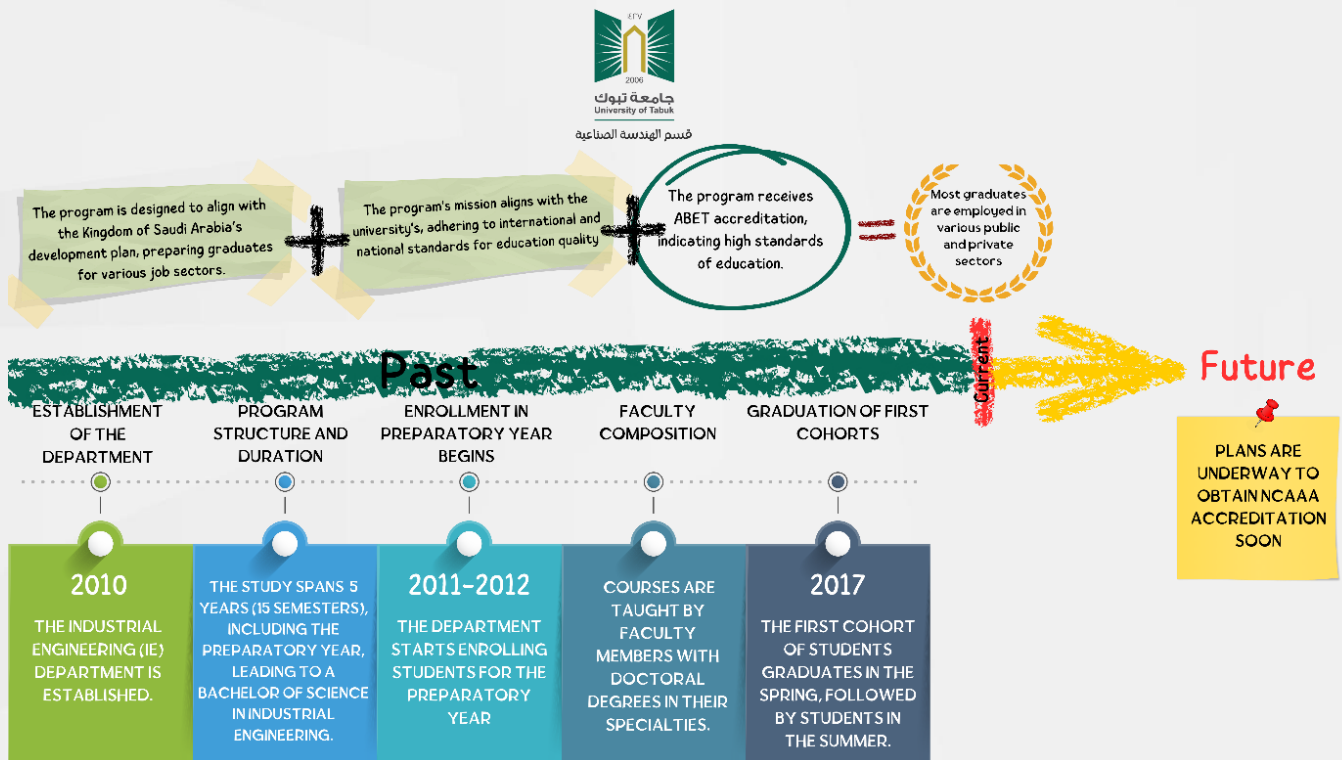


Figure 1: The IE Program Timeline

2. Development of the Operational Plan

This operational plan is developed by the approved committee to identify and allocate the man power, the financial and physical resources to achieve the strategic goals of the Tabuk university. Each strategic goals of the university are made to satisfy the strategic themes through various initiatives by the college or program. The operation plan for Bachelor in Industrial engineering program helps allocating resources, establishing timelines, setting its goals, identifying the risks, and determining the necessary steps to achieve the goals through various initiatives. These initiatives are implemented and measured through various Key Performance Indicators (KPI) (institutional or programmatic) in order to understand the achievements towards the mission to realize the long-term vision. The plan mainly focuses on

improving the quality of education, research, and community engagement by developing an attractive educational environment, and effective administrative and organizational environment for a period of five years. However, based on the changes in the program mission or goals, the changes in the and strategic plan of the Faculty of Engineering or the University of Tabuk, the operational plan is revised

3. Vision and Mission for University, Faculty of Engineering, and Department of Industrial Engineering

Figure 2 illustrates the vision and mission of the University of Tabuk, Faculty of Engineering, the Department of Industrial Engineering and their Alignment.

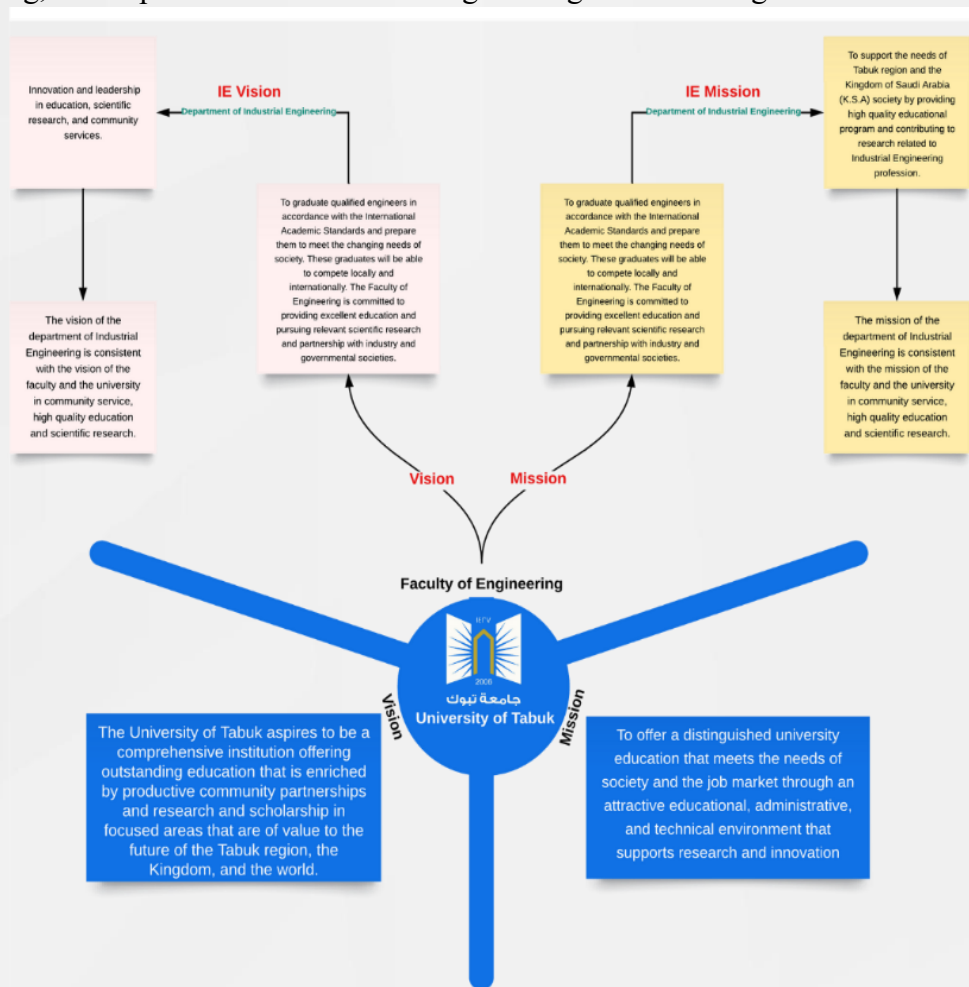


Figure 2: The vision and mission of the University of Tabuk, Faculty of Engineering, and the Department of Industrial Engineering

In addition to figure 2 above table 1 and 2 below gives the alignment of the Visions and Missions by mapping the keywords of the University of Tabuk with the Faculty of Engineering and BSc IEP

Table 1: Gives the alignment of the Visions by mapping the keywords of the University of Tabuk with the Faculty of Engineering and BSc IEP

Keywords	University of Tabuk	Faculty of Engineering	Department of Industrial Engineering
Institution	A university that is educationally and academically distinguished which cooperated in community service	A distinguished and pioneering college locally and internationally in the field of engineering education , innovative research, and building a knowledge society	Towards innovation and excellence in industrial engineering education , conducting research work in collaboration with the local industry and stand by our community by providing helpful services and contribute to their activities
Distinguished			
Education			
Community			

Table 2: Gives the alignment of the Missions by mapping the keywords of the University of Tabuk with the Faculty of Engineering and BSc IEP

Keywords	University of Tabuk	Faculty of Engineering	Department of Industrial Engineering
Needs of society	To offer a distinguished university education that meets the needs of society and the job market through an attractive educational , administrative, and technical environment that supports research and innovation.	To graduate qualified engineers in accordance with the International Academic Standards and prepare them to meet the changing needs of society . These graduates will be able to compete locally and internationally. The Faculty of Engineering is committed to providing excellent education and pursuing relevant scientific research and partnership with industry and governmental societies.	Providing high-quality education in Industrial Engineering and prepare qualified engineers, and providing services to local societies through scientific research and partnership with industrial sectors in the region.
Excellent education			
Research			

4. Goals of University, Faculty of Engineering, and Department of Industrial Engineering

Developing the vision, mission, goals, and educational objectives for a Bachelor of Science in Industrial Engineering Program is an important process that requires careful consideration of various stakeholders' perspectives. The following figure 3 shows the goals of university, faculty of engineering, and department of industrial engineering

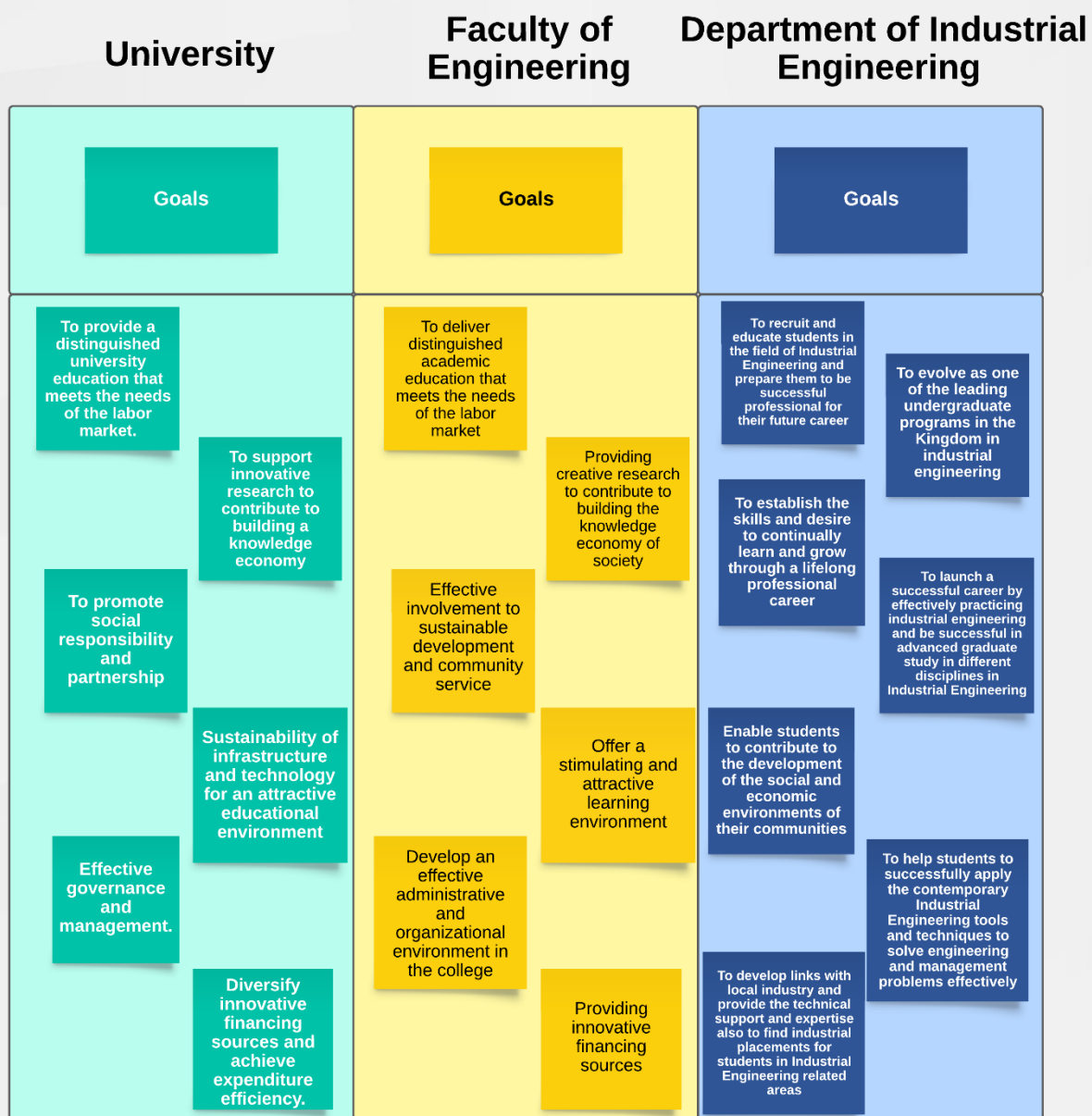


Figure 3: The goals of university, faculty of engineering, and department of industrial engineering



The following table 3 gives the alignment of the goals of the University of Tabuk with the Faculty of Engineering and BSc IEP.

Table 3: Gives the alignment of the goals of the University of Tabuk with the Faculty of Engineering and BSc IEP.

Program Goals	Faculty of Engineering Goals						University of Tabuk Goals					
	CG1	CG2	CG3	CG4	CG5	CG6	UG1	UG2	UG3	UG4	UG5	UG6
PG1	✓						✓					
PG2	✓			✓			✓		✓			
PG3			✓						✓			
PG4			✓						✓			
PG5			✓						✓			
PG6		✓						✓				
PG7			✓						✓			

5. The Operational Plan of the Program

The operational plan of the Department of Industrial Engineering consists of seven goals that are associated with 17 initiatives to ensure satisfying all the IEP goals. Figure 4 shows the IEP goals and related initiatives.

Department of Industrial Engineering Goals and Initiatives



Figure 4: The goals of university, faculty of engineering, and department of industrial engineering

Table 4 below shows Each Goal with its initiative, activity, KPI, Target, Responsibility, and Implementation Period.

Table 4: Each Goal with its initiative, activity, KPI, Target, Responsibility, and Implementation Period.

Goal	Initiatives	Activities	KPI	Target	Responsibility	Implementation Period
PG1: To recruit and educate students in the field of Industrial Engineering and prepare them to be successful professional for their future career	Develop the Curriculum Plan and the Learning Outcomes to meet the need of the job market	Involvement of the stakeholders (Alumni and Employers) in the development of curriculum and learning outcomes	Evaluation of the Program Curriculum and Learning outcomes by the stakeholders Survey 1 (Q16-Q24)	3.75/5	Curriculum Committee & Quality Committee	Annual
	Encouraging students to prepare and participate in professional and/or national examinations	Students' performance in the professional and/or national examinations.	Percentage of students or graduates who were successful in the professional and / or national examinations, or their score average and median (if any) (KPI-P-06)	75%	Course Instructors	
	Improving the employability of graduates	Graduates' employability and enrolment in postgraduate programs	Percentage of graduates from the program who within a year of graduation were: a) employed b) enrolled in postgraduate program. (During the first year of their graduation to the total number of graduates in the same year (KPI-P-07))	Joint Target of a+b = 50%	Training Unit	

		Professional Trainings to improve the communication skills and proficiency of students	Employers' evaluation of the program graduate's proficiency (KPI-P-09)	3.75/5	Course Instructors / Training Unit
PG2: To evolve as one of the leading undergraduate programs in the Kingdom in industrial engineering	Provide attractive and adequate learning environment, facilities, and resources to the students	Students' Evaluation of quality of learning experience in the program	Average of overall rating of final year students for the quality of learning experience in the program on a five-point scale in an annual survey (KPI-P-02)	3.75/5	Department Council
		Students' evaluation of the quality of the courses	Average students overall rating for the quality of courses on a five-point scale in an annual survey.(KPI-P-03)	3.75/5	
		Average number of students in the class	Average number of students per class (in each teaching session/activity: lecture, small group, tutorial, laboratory, or clinical session) (KPI-P-08)	25	
		Students' satisfaction with the offered services	Average of students' satisfaction rate with the various services offered by the program (restaurants, transportation, sports facilities, academic advising, ...) on a five-point scale in an annual survey. (KPI-P-10)	3.75/5	
PG3: To establish the skills and desire to continually learn and grow through a lifelong professional career.	Involvement of stakeholders in community services	Involvement of stakeholders in community service	Proportion of full-time teaching and other staff actively engaged in community service activities	3.75/5	Training Unit
				50%	

		Orientation of students to take up graduation projects based on the need of society	Percentage of students participated in community service or related projects			
	Encouraging students to prepare and participate in professional and/or national examinations	Students' performance in the professional and/or national examinations.	Percentage of students or graduates who were successful in the professional and / or national examinations, or their score average and median (if any) (KPI-P-06)	75%	Course Instructors	Semester
PG4: To launch a successful career by effectively practicing industrial engineering and be successful in advanced graduate study in different disciplines in Industrial Engineering.	Establishing partnership with local, regional, and international societies	Establishing student chapters of international societies	Number of trainings programs by student chapters to the total training programs	50%	Training Unit	Annual
		Increasing the research projects in collaboration with other colleges/universities	Percentage of full-time faculty members who jointly published articles during the year to total faculty members in the program	60%	Research unit	
	Enhancing the education process and scientific research	Students Completion Rate	Proportion of undergraduate students who completed the program in minimum time in each cohort.(KPI-P-04)	60%	Department Council	
		First-year students retention rate	Percentage of first-year undergraduate students who continue at the program the next year to the total number of first-year students in the same year.(KPI-P-05)	100%	Program Chair	
PG5: Enable students to contribute to the development of the social and economic environments of their communities	Contribute to the development of the social and economic environments of their communities	Involvement of stakeholders in community services	Proportion of full-time teaching and other staff actively engaged in community service activities	3.75/5	Training Unit	
		Orientation of students to take up graduation projects based on the need of society	Percentage of students participated in community service or related projects	50%		
PG6: To help students to successfully apply the contemporary Industrial Engineering tools and techniques to solve engineering and management problems effectively.	Encouraging faculty for joint research collaborations and publications	Encouraging faculty for research collaborations and publications	Percentage of full-time faculty members who published at least one research during the year to total faculty members in the program. (KPI-P-14)	80%	Research unit	
			Rate of published research per faculty member (KPI-P-15)	1		
	Encouraging faculty to publicize their	Encouraging faculty to publicize their published research platforms such as	Citations rate in refereed journals per faculty member (KPI-P-16)	5		

	published research on open-source research platforms	google scholar and ResearchGate				
	Encouraging faculty for submitting patent applications	Encouraging faculty for submitting patent applications	No. of patent proposal and applications submitted by the program in a calendar year	2		
	Encouraging faculty to apply for research projects and grants	Encouraging faculty to apply for research projects and grants	No. of research projects and grants applied by the program in a calendar year	2		
PG7: To develop links with local industry and provide the technical support and expertise also to find industrial placements for students in Industrial Engineering related areas.	Encouraging faculty for joint research collaborations and publications	Encouraging faculty for research collaborations and publications	Percentage of full-time faculty members who published at least one research during the year to total faculty members in the program. (KPI-P-14)	80%	Research unit	
			Rate of published research per faculty member (KPI-P-15)	1		
	Encouraging faculty to publicize their published research on open-source research platforms	Encouraging faculty to publicize their published research platforms such as google scholar and ResearchGate	Citations rate in refereed journals per faculty member (KPI-P-16)	5		
	Encouraging faculty for submitting patent applications	Encouraging faculty for submitting patent applications	No. of patent proposal and applications submitted by the program in a calendar year	2		
	Improving the employability of graduates	Graduates' employability and enrolment in postgraduate programs	Percentage of graduates from the program who within a year of graduation were: a) employed b) enrolled in postgraduate program. (During the first year of their graduation to the total number of graduates in the same year (KPI-P-07))	Joint Target of a+b = 50%		Training Unit
		Professional Trainings to improve the communication skills and proficiency of students	Employers' evaluation of the program graduate's proficiency (KPI-P-09)	3.75/5		Course Instructors / Training Unit

6. Analysis of the Operational Plan Indicators

The bachelor of Industrial Engineering program is committed for keeping all records to understand the extent to which the goals are achieved. The Industrial engineering program annually measures the KPIs and is recorded in annual report (APR). Five program goals have been identified and assessed through various Key Performance Indicators (KPIs) specific to the program. The program has developed specific KPIs and used NCAAA KPIs for the quality assessment of the following:

- Educational excellence
- Research productivity
- Community engagement

The quality assessment will be through direct and indirect measurements. The plan will be regularly reviewed and updated to ensure the department maintain the quality and continues to improve over time. This way this operational plan represents a comprehensive and integrated strategy to understand the achievement of the strategic goals of university of Tabuk.

7. Action Plan for Improvement

The BSc IEP identifies the actions to be taken to improve in the subsequent year in the following table 5.

Table 5: Action Plan for Improvement

One Year Action Plan for Improvement				
Source: Analysis of Operational Plan KPIs				
Action	Responsibility	Time frame		Notes
		Start	Complete	
1.				
2.				
3.				
4.				
5.				

The action plan for improvement is added to the program development plan in the APR.

8. Follow-up Plan to Monitor the Progress of Action Plan

The BSc IEP follows up the implementation of the action plan and the effectiveness of the actions by a follow-up plan given in the following table 6.

Table 6: Follow-up Plan to monitor the Progress towards Actions Taken

Follow-up Plan to monitor the Progress towards Actions Taken				
Reference: Action Plan for Improvement Based on the Analysis of Operational Plan KPIs				
Actions to Be reviewed	Responsibility to Follow-up	Time frame		Notes
		Start	Complete	
1.				
2.				
3.				
4.				
5.				

The follow-up is done by the department council in its meetings under the guidance of the program chair. The resources required for the implementation of the action plan for improvement are provided and hence the quality Loop is closed to achieving the program goals and mission and progress towards continuous improvement.

9. Approval of the Operational Plan

	Prepared by	Approved by
Date: 31.08.22	Accreditation Committee	Department Council
Reference No.:	--	1/1/44