



جامعة تبوك
University of Tabuk

University of Tabuk
Faculty of Engineering

Industrial Engineering Department
Bachelor of Science in Industrial Engineering

Operation Plan

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Contents

1. Introduction.....	3
2. Development of the Operational Plan	3
3. Program Constituencies	4
4. Vision of the University of Tabuk, Faculty of Engineering, and BSc IEP	4
4.1 University of Tabuk Vision.....	4
4.2 Faculty of Engineering Vision	4
4.3 Department of Industrial Engineering (BSc IEP) Vision.....	5
5. Mission of the University of Tabuk, Faculty of Engineering, and BSc IEP	5
5.1 University of Tabuk Mission.....	5
5.2 Faculty of Engineering Mission.....	5
5.3 B.Sc. in Industrial Engineering Program (BSc IEP) Mission.....	5
5.4 Alignment of the Missions.....	5
6. Goals of the University, College, and Program	6
6.1 University Goals.....	6
6.2 Faculty of Engineering Goals	7
6.3 BSc IE Program Goals	7
6.4 Mapping the goals and the mission of BSc IEP	7
6.5 Mapping of the Program Goals with the Three Pillars	8
6.6 Alignment of Goals	8
7. The Operational Plan of the BSc IE Program.....	9
8. IE Program Goals, Initiative, Operational Goals and KPI.....	10
9. Tasks of Department Committees	14

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). By 2017, the first cohort of students graduated in the spring, followed by additional graduates in the summer. The BSc IE program maintains a duration of five years, culminating in the award of a Bachelor of Science in Industrial Engineering degree upon successful completion of program criteria and university requirements. The BSc program in Industrial Engineering is designed to align with the Kingdom of Saudi Arabia's development plan, preparing graduates for various job sectors. Its mission adheres to both international and national standards for education quality, in alignment with the university's vision. The BSc IEP holds accreditation from the Engineering Accreditation Commission of ABET.

ABET Web URL: <https://www.abet.org/>.

IE Department Web Link: <https://www.ut.edu.sa/en/Faculties/engineering/Industrial/Pages/default.aspx>

Motivated by its mission and goals, the BSc in Industrial Engineering program develops an annual operational plan to ensure the effective implementation and achievement of its objectives. This plan introduces a series of initiatives, measured by performance indicators, to drive the program toward its goals. It outlines targeted strategies focused on educational excellence, the promotion of ethical values, social responsibility, community engagement, and a strong commitment to contributing to the nation's economic growth.

2. Development of the Operational Plan

This operational plan is developed by the approved committee to identify and allocate the manpower, 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 BSc in IE program helps allocating resources, establishing timelines, setting goals, identifying the improvement area, and determining the necessary steps to achieve the goals through various initiatives. These initiatives are implemented and measured through various Key Performance Indicators (KPIs) to understand the achievements towards the mission to realize the long-term vision. This operational plan mainly focuses on improving the quality of education, research, and

community engagement by developing an attractive educational environment, and an 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 strategic plan of the Faculty of Engineering or the University of Tabuk, the operational plan is revised.

3. Program Constituencies

The program constituents are those who must be satisfied with the performance of the Industrial Engineering program. The significant groups of constituencies of the program are:

- **Faculty:** IE faculty members are involved, on a regular basis, in the assessment processes, advising, supervising, etc.
- **Students:** Current IE students are interested in whether the IE program adequately prepares them for future employment.
- **Alumni:** This group consists of recent graduates who have been graduated from the IE department with B.SC. degree. They should have the incentive to assess the quality of the program based on their career achievements.
- **Employers (government, industry and universities):** Employers' satisfaction with our students' education provides measure of the program success. Their satisfaction translates to employment opportunities for our students.
- **EAB (External Advisory Board):** These external members contribute to the program by providing recommendations for curriculum updates to align with labor market needs.

4. Vision of the University of Tabuk, Faculty of Engineering, and BSc IEP

4.1 University of Tabuk Vision

A university that is educationally and academically distinguished which cooperated in community service.

4.2 Faculty of Engineering Vision

A distinguished and pioneering college locally and internationally in the field of engineering education, innovative research, and building a knowledge society.

4.3 Department of Industrial Engineering (BSc IEP) Vision

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

5. Mission of the University of Tabuk, Faculty of Engineering, and BSc IEP

5.1 University of Tabuk Mission

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.

5.2 Faculty of Engineering Mission

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.

5.3 B.Sc. in Industrial Engineering Program (BSc IEP) Mission

Providing high-quality education in Industrial Engineering and preparing qualified engineers and providing services to local societies through scientific research and partnership with industrial sectors in the region.

5.4 Alignment of the Missions

Table 1 gives the alignment of the missions by mapping the keywords of the University of Tabuk with the Faculty of Engineering and BSc IEP.

Table 1 Alignment of the mission by mapping the keywords of the University of Tabuk with the Faculty of Engineering and BSc IEP

Keywords	University of Tabuk	Faculty of Engineering	BSc IEP
Needs of society	To offer a distinguished university education that meets the needs of society	To graduate qualified engineers in accordance with the International Academic Standards and prepare them to meet the changing needs of society .	Providing high-quality education in Industrial Engineering and preparing qualified engineers and providing services to local societies
Excellent education	and the job market through an attractive educational , administrative, and technical environment that supports research and innovation.	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.	through scientific research and partnership with industrial sectors in the region.
Research			

6. Goals of the University, College, and Program

6.1 University Goals

UG1: To provide a distinguished university education that meets the needs of the labor market.

UG2: To support innovative research to contribute to building a knowledge economy.

UG3: To promote social responsibility and community partnership.

UG4: Sustainability of infrastructure and technology for an attractive educational environment.

UG5: Effective governance and management.

UG6: Diversify innovative financing sources and achieve expenditure efficiency.

6.2 Faculty of Engineering Goals

- CG1:** To deliver distinguished academic education that meets the needs of the labor market.
- CG2:** Providing creative research to contribute to building the knowledge economy of society.
- CG3:** Effective contribution to sustainable development and community service.
- CG4:** Offer a stimulating and attractive learning environment.
- CG5:** Develop an effective administrative and organizational environment in the college.
- CG6:** Providing innovative financing sources.

6.3 BSc IE Program Goals

- **PG1:** Educating students in the field of Industrial Engineering and prepare them to be successful professional
- **PG2:** Offering a stimulating and supportive environment for students to continually learn and grow through a lifelong professional career.
- **PG3:** Effective contribution to the development of the social and economic environments of their communities
- **PG4:** Developing communication with local industry to improve student opportunities for training and employability
- **PG 5:** To promote the cutting-edge research for solving local and global problems

6.4 Mapping the goals and the mission of BSc IEP

The goals of the BSc IEP are formulated based on its mission, and the alignment between the program objectives and the mission is outlined in Table 2.

Table 2: Alignment between the program objectives and the mission

Program Goals	Alignment with Program Mission
PG1: Educating students in the field of Industrial Engineering and prepare them to be successful professional	Aligns with the mission's emphasis on providing high-quality education to the students to become successful professional
PG2: Offering a stimulating and supportive environment for students to continually learn and grow through a lifelong professional career.	Aligns with the mission's focus on preparing qualified engineers through supportive environment and high-quality education.
PG3: Effective contribution to the development of the social and economic environments of their communities	Synchronize with the mission's objective of student's engagement in services to local societies.
PG4: Developing communication with local industry to improve student opportunities for training and employability	Aligns with the mission's intention to develop the partnership with industrial sectors.

PG5: To promote the cutting-edge research for solving local and global problems	Directly aligns with the mission's focus on conducting the scientific research to serve local societies
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6.5 Mapping of the Program Goals with the Three Pillars

Program Goals	Education	Community Services	Research
PG1: Educating students in the field of Industrial Engineering and prepare them to be successful professional	✓		
PG2: Offering a stimulating and supportive environment for students to continually learn and grow through a lifelong professional career.	✓	✓	
PG3: Effective contribution to the development of the social and economic environments of their communities		✓	
PG4: Developing communication with local industry to improve student opportunities for training and employability	✓	✓	
PG5: To promote the cutting-edge research for solving local and global problems			✓

6.6 Alignment of Goals

Table 4 gives the alignment of the goals of the University of Tabuk with the Faculty of Engineering and BSc IEP.

Table 4: 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		✓				✓		✓				✓

7. The Operational Plan of the BSc IE Program

This section outlines a series of initiatives aligned with the program objectives of the B.Sc. in Industrial Engineering program. These initiatives are designed to establish a structured and actionable framework for achieving program goals by breaking down initiatives into operational goals. The operational plan acts as a roadmap, providing a systematic and measurable approach to reaching program goals, supporting student success, and contributing to community and national development. To track progress effectively, we have utilized 23 Key Performance Indicators (KPIs) specific to this operational plan, serving as measurable targets, shown in Table 5. Among them, 11 KPIs are established by the NCAAA (program level) and are directly relevant for evaluating the operational goals, labeled in yellow. The remaining 12 KPIs (i.e. additional KPIs) provide a more comprehensive assessment of progress toward achieving these program goals. This integrated approach strengthens the program's ability to measure success and effectiveness by incorporating both NCAAA KPIs (program level) and additional KPIs. Regular monitoring of these KPIs is essential for assessing the program's overall effectiveness, ensuring alignment with its mission, and allowing for necessary refinement. Our dedication to continuous improvement and academic excellence is reflected in the initiatives, operational goals, and KPIs outlined for IE program objective, as detailed in Table 5.

8. IE Program Goals, Initiative, Operational Goals and KPI

Table 5: IE Program Goals, Initiative, Operational Goals and KPI

Goal	Initiatives	Operational Goal	KPI	Target	Responsibility	Implementation Period
PG1: Educating students in the field of Industrial Engineering and prepare them to be successful professional	Improve Curriculum Plan and the Learning Outcomes that meet the labor market	Review program curriculum plan and learning outcomes that meets the labor market	Scale of Evaluation of the Program Curriculum and Learning outcomes by the stakeholders Survey 1(Q16-Q24) (KPI-A-01)	4.00/5	Program and study plan committee	Annual
	Providing support for students to prepare and participate in professional and/or national examinations	Student performance in professional and/or national examination	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-05)	75%	Academic Advising Committee	Annual
		Employers' evaluation of the program graduate's proficiency	Employers' evaluation of the program graduate's proficiency (KPI-P-07)	4.00/5	Development and Quality Committee	Annual
PG2: Offering a stimulating and supportive environment for students to	Enhance student learning experience	Students' Evaluation of quality of learning experience in the program	Scale of Students' Evaluation of quality of learning experience in the program (KPI- P-01)	4.00/5	Program and study plan committee	Annual

Goal	Initiatives	Operational Goal	KPI	Target	Responsibility	Implementation Period
continually learn and grow through a lifelong professional career.		Students' evaluation of the quality of the courses	Scale of Students' evaluation of the quality of the course (KPI-P-02)	4.00/5	Faculty Member	Annual
		Students' satisfaction rate with the offered services	Students' satisfaction rate with the offered services (KPI-A-02)	4.00/5	IE Department Chair	Annual
		Average number of students in the class	Average number of students in the class (KPI-A-03)	27	IE Department Chair	Annual
		Satisfaction of beneficiaries with the learning resources	Scale of Satisfaction of beneficiaries with the learning resources (KPI-A-04)	4.00/5	IE Department Chair	Annual
Provide supportive environment		students to teaching staff	Ratio of students to teaching staff (KPI-P-08)	18:01	IE Department Chair	Annual
		Student completion rate	Student Completion rate (KPI-P-03)	65%	Academic Affairs Committee	Annual
		First-year students retention rate	First-year students retention rate (KPI-P-04)	100%	Academic Affairs Committee	Annual
		Faculty retention	Percentage of teaching staff leaving the program (KPI-A-05)	0%	IE Department Chair	Annual

Goal	Initiatives	Operational Goal	KPI	Target	Responsibility	Implementation Period
PG3: Effective contribution to the development of the social and economic environments of their communities	Participation in community service	Students participated in community service or related projects	Percentage of students participated in community service or related projects (KPI-A-06)	50%	Industry & Community Engagement Committee	Annual
		Full-time teaching and other staff actively engaged in community service activities	Proportion of full-time teaching and other staff actively engaged in community service activities (KPI-A-07)	55%	Industry & Community Engagement Committee	Annual
	Organize training programs by student chapters	Trainings programs by student chapters	Number of training programs by student chapter (KPI-A-08)	5	Industry & Community Engagement Committee	Annual
PG4: Developing communication with local industry to improve student opportunities for training and employability	Enhance student Employability	Graduates' employability and enrolment in postgraduate programs	Number of Graduates' employability and enrolment in postgraduate programs (KPI-P-06)	55%	Academic Affairs Committee	Annual
	Enhance student Training	Students have training certificate	Percentage of students have training certificate (KPI-A-09)	60%	Academic Affairs Committee	Annual
PG 5: To promote the cutting-edge research for solving local	Encouraging faculty to apply for research projects and grants	Research projects and grants applied by the program in a calendar year	No. of research projects and grants applied by the program in a calendar year (KPI-A-10)	3	Scientific Committee	Annual

Goal	Initiatives	Operational Goal	KPI	Target	Responsibility	Implementation Period
and global problems	Encouraging faculty for research collaborations and publications	Publications of faculty members	Percentage of publications of faculty members (KPI-P-09)	65%	Scientific Committee	Annual
		Published research per faculty member	Rate of published research per faculty member (KPI-P-10)	2	Scientific Committee	Annual
		Full-time faculty members who jointly published articles during the year to total faculty members in the program	Percentage of full-time faculty members who jointly published articles during the year to total faculty members in the program (KPI-A-11)	50%	Scientific Committee	Annual
	Encouraging faculty to research for faculty rank promotion	Teaching staff distribution	Percentage of teaching staff distribution (KPI-A-12)	90%	IE Department Chair	Annual
	Encouraging faculty to publicize their published research on open-source research platforms	Improve the citations rate in referred journals	Citations rate in referred journals per faculty member (KPI-P-11)	15	Scientific Committee	Annual

9. Tasks of Department Committees

I. Academic Advising Committee

1. Supervise the process of providing comprehensive academic, professional, psychological, and social guidance and counselling services to students through qualified and adequate staff.
2. Supervise and monitor the performance of academic advisors, develop an annual academic guidance plan, and address academic issues raised by advisors in coordination with department administration.
3. Implement mechanisms to identify and support gifted, creative, talented, and underachieving students within the program, offering tailored programs to nurture each group.
4. Build a database of talented and struggling students in the department and develop specialized programs for them.
5. Monitor student absences in the department and identify students with high absenteeism in coordination with academic advisors.
6. Integrate students with special needs into activities and provide appropriate support in coordination with specialized faculty units.
7. Supervise the process of providing comprehensive academic, professional, psychological, and social guidance and counseling services to students through qualified and adequate staff.

II. Development and Quality Committee

1. Supervise the implementation of quality assurance measures and ensure compliance with institutional policies.
2. Monitor alignment with NCAAA standards, the National Qualifications Framework, and accreditation requirements.
3. Oversee the preparation and submission of accreditation documents, including self-study reports.
4. Define, align, and regularly update program learning outcomes (PLOs) and course learning outcomes (CLOs).
5. Develop and implement mechanisms for assessing learning outcomes and verifying achievement against benchmarks.
6. Identify areas for improvement based on assessment results, stakeholder feedback, and accreditation requirements.
7. Develop, implement, and monitor comprehensive improvement plans based on key performance indicators and assessments.
8. Manage data collection, analysis, and reporting to ensure continuous improvement and informed decision-making.
9. Prepare and present reports, including the Annual Program Report and survey report, to department leadership and stakeholders.
10. Develop and maintain the BSc Industrial Engineering program operational plan outlining strategic initiatives, operational goals, and Key Performance Indicators (KPIs) closely aligned with each program goal.

11. Ensure program alignment with the institution's mission, conduct periodic evaluations, and track improvement initiatives.
12. Prepare follow-up reports on the implementation of actions derived from survey findings and other data analyses, ensuring accountability and effectiveness in addressing identified areas for improvement.

III. Scientific Committee

1. Participate in the preparation, implementation, tracking, and monitoring of operational plan initiatives for the program, focusing specifically on scientific research.
2. Promotes scientific integrity by ensuring adherence to values such as intellectual property rights, ethical practices, and proper conduct in research activities.
3. Encourages teaching staff to participate efficiently in academic, research, and scientific production activities.
4. Oversees teaching staff participation in professional and academic development programs, aligning these with staff needs and performance development.
5. Ensures compliance with regulations and guidelines related to research activities within the department.
6. Assesses faculty research output and provides feedback to enhance the quality and impact of their work.
7. Promotes collaboration between faculty members, external research institutions, and industry partners.
8. Reviews promotion requests from faculty members according to university scientific Council rules.
9. Evaluates faculty requests to attend scientific seminars and conferences based on scientific Council rules.
10. Identifies needs for faculty and similar positions, considering applicants for departmental roles in collaboration with relevant committees, using performance indicators.
11. Creates and updates a database of research groups, published research, projects, and scientific supervision by faculty members.
12. Organizes and coordinates conferences, workshops, seminars, scientific and cultural events, and scientific competitions within the department, overseeing their execution.

IV. Academic Affairs Committee

1. Participate in the preparation, implementation, tracking, and monitoring of operational plan initiatives for the program, focusing particularly on introducing necessary workshops for students.
2. Ensure the program has enough qualified staff to perform its administrative, professional, and technical tasks, with defined tasks and authorities.
3. Implement clear and publicized procedures to verify the quality and validity of assessment methods and ensure the level of student achievement.
4. Implement effective procedures to ensure academic integrity at the program level, verifying the authenticity of students' work and assignments.
5. Supervise the process of providing comprehensive information to students at the beginning of each course, including learning outcomes, teaching and learning

strategies, assessment methods and dates, and expectations for student performance, with continuous feedback throughout the course.

6. Offer extracurricular activities across various fields to enhance students' abilities, skills, and encourage their active participation and development.
7. Provide students with regular education and training on academic integrity, including workshops, seminars, and resources on how to avoid plagiarism and uphold ethical standards.
8. Supervise the process of preparing and reviewing academic schedules, identifying course and section needs, managing student registration and add-drop procedures, and overseeing the examination process, including handling excuses and developing invigilation schedules.
9. Implement mechanisms to identify and support gifted, creative, talented, and underachieving students within the program, offering tailored programs to nurture each group.
10. Implement effective mechanisms to evaluate the adequacy and quality of services provided to students and measure their satisfaction, using the results for continuous improvement.
11. Develops mechanisms to support excellence in teaching, encouraging creativity and innovation among teaching staff.

V. Program and study plan committee

1. Make sure about the application of the systems, regulations, and procedures approved by the institution/college, including those related to grievances, complaints, and disciplinary cases.
2. Develop the curriculum for programs in the department in accordance with the standards set by both the University and the Faculty of Engineering.
3. Conduct periodic evaluations of study plans, gathering comprehensive feedback and recommendations from stakeholders and reviewers. Implement appropriate suggestions and actions to ensure alignment with program goals, learning outcomes, and advancements in the field of specialization, encompassing educational, scientific, technical, and professional developments.
4. Review and update program and course specifications when necessary.
5. Review and update the course learning outcomes when necessary.
6. Develop and implement a clear and approved teaching, learning, and evaluation strategy that reflects the program's educational philosophy and ensures achievement of intended learning outcomes.
7. Establish and maintain a matrix for aligning learning outcomes of courses with program learning outcomes to ensure consistency and coherence across the curriculum.
8. Adapt teaching and learning strategies, as well as assessment methods, to the nature and level of the program, ensuring alignment with program learning outcomes and fostering effective learning experiences.
9. Monitor the commitment of the teaching staff to learning and teaching strategies and assessment methods included in the program and course specifications through specific mechanisms.

10. Implement and maintain a clear and approved teaching, learning, and evaluation strategy that reflects the program's educational philosophy and ensures the achievement of intended learning outcomes.

VI. Industry & Community Engagement Committee

1. Collaborate with industry partners to identify and secure training opportunities and placements for students and ensuring a match with their academic and career interests.
2. Organize orientation sessions to prepare students for field training, covering expectations, responsibilities, and professional conduct.
3. Provide continuous supervision and support to students during their field training, addressing any issues or concerns that may arise.
4. Develop and implement assessment tools to evaluate student performance during field training, including feedback from employers.
5. Collect, analyze, and evaluate feedback from students and industry partners, gathered through both discussions and surveys, to monitor, evaluate, and improve the effectiveness of field training and supervision..
6. Prepare comprehensive reports on field training activities, outcomes, and areas for improvement, and present these to the department council.
7. Organize workshops and seminars to enhance students' skills and readiness for field training.
8. Ensure that students are aware of and adhere to safety protocols and ethical standards during their field training.
9. Regularly review and update the field training program to reflect changes in industry practices and feedback from stakeholders.
10. Preparing a comprehensive field training guide, including course binders and student feedback surveys.
11. Participate in the preparation, implementation, tracking, and monitoring of operational plan initiatives for the program, focusing particularly on engaging students in Community Services.
12. Establish and maintain effective communication channels with alumni, involving them in program events and activities, seeking their feedback, and leveraging their expertise and support. Maintain updated and comprehensive databases about alumni. In other words (Actively engage with the alumni and develop an effective mechanism to benefit from their expertise.)
13. Facilitate interactions with the advisory board, including organizing meetings, setting agendas, preparing meeting minutes, and compiling a list of recommendations based on the advisory board's expertise to advise on program improvements and alignment with industry needs.
14. Organize and facilitate community partnership activities for teaching staff, integrating these engagements into their professional development and evaluation processes.