



Bachelor of Industrial Engineering – Program Guide

Prepared by

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Introduction

The Industrial Engineering program at Umm Al-Qura University prepares students to become leaders in designing, optimizing, and managing complex systems that integrate people, materials, equipment, and information. Our program combines theoretical knowledge with practical applications, preparing graduates for the challenges of modern industry and technology.

Program Vision

To be a leading program in Industrial Engineering education, recognized for excellence in teaching, research, and industrial collaboration.

Program Mission

To prepare highly qualified industrial engineers capable of addressing complex industrial challenges through innovative solutions while maintaining professional ethics and contributing to national development.

1. Admissions Policies

1.1 Entry Requirements

The admission requirements for the IE program are as follows:

1. Applicants must be Saudi citizens or born to a Saudi mother
2. Applicants must hold a secondary school certificate (or its equivalent) from Saudi Arabia or abroad
3. The secondary school certificate, or its equivalent, must have been obtained within the last five years
4. Applicants are required to pass the necessary admission tests, including: - General Aptitude Test (GAT) - Summative Assessment - Additional department requirements
5. Applicants must pass any additional exams or interviews required by the college
6. Applicants must not have been dismissed from Umm Al-Qura University or any other university for disciplinary reasons

1.2 Application Process

1. Applications are accepted once before the beginning of the academic year
2. Apply via the Unified Admission Portal at Umm Al-Qura University website
3. Preference is given to applicants who meet stated conditions and standards
4. Admission confirmation required after results announcement



5. University number issued after admission confirmation

2. Program Structure

2.1 Program Overview

- Degree: Bachelor of Science in Industrial Engineering
- Duration: 5 years (10 levels)
- Total Credit Hours: 160
- Language of Instruction: English

2.2 Credit Hour Distribution

- University Requirements: 20 credit hours
- College Requirements: 65 credit hours
- Department Requirements: 75 credit hours

Note: For detailed curriculum map and course descriptions, please visit the Curriculum section of our website.

2.3 Major Areas of Study

1. Operations Research
 - Linear Programming
 - Integer Programming
 - Dynamic Programming
 - Queuing Theory
 - Simulation Modeling
2. Engineering Economy
 - Cost Analysis
 - Economic Evaluation
 - Investment Analysis
 - Risk Assessment
 - Project Economic Analysis
3. Ergonomics and Work Design
 - Human Factors Engineering
 - Workplace Design
 - Safety Engineering
 - Work Measurement
 - Motion Study
4. Operations Engineering and Management
 - Production Planning
 - Inventory Control
 - Supply Chain Management
 - Quality Control
 - Project Management



5. Facilities Engineering
 - Plant Layout
 - Material Handling
 - Warehousing Systems
 - Facility Location
 - Logistics Systems Design
6. Quality Engineering
 - Statistical Process Control
 - Design of Experiments
 - Reliability Engineering
 - Six Sigma Methodology
 - Quality Management Systems
7. Manufacturing
 - Manufacturing Processes
 - Computer-Integrated Manufacturing
 - Automation
 - Lean Manufacturing
 - Industry 4.0 Technologies

3. Grading System

3.1 Course Evaluation

- Course performance evaluated based on coursework and final examination grades
- Total points per course: 100
- Coursework: 40-70% of total grade
- Final examination: Remaining percentage
- Minimum passing score: 60%

3.2 Grade Scale

Letter Grade	Points	GPA (out of 4)
A+	95-100	4.00
A	90-94	3.75
B+	85-89	3.50
B	80-84	3.00
C+	75-79	2.50
C	70-74	2.00
D+	65-69	1.50
D	60-64	1.00
F	<60	0.00



3.3 Academic Standing

Cumulative GPA Classification:

- 3.50 or above: Excellent
- 2.75 to <3.50: Very Good
- 1.75 to <2.75: Good
- 1.00 to <1.75: Pass

3.4 Honors System

- First Class Honors: CGPA ≥ 3.75
- Second Class Honors: CGPA 3.25-3.75

Honors Requirements:

1. No failed courses at any institution
2. Completion within standard program duration
3. Minimum 60% of courses completed at Umm Al-Qura University

4. Practical Components

4.1 Cooperative Training

- Credit Hours: 6
- Prerequisites: Minimum 100 credit hours completed
- Duration: Minimum 2 months
- Evaluation based on:
 - Company supervisor assessment
 - Academic supervisor assessment
 - Final report and presentation

4.2 Graduation Project

The final graduation project focuses on solving real-world industrial problems or developing new systems. Project areas include:

1. Process Improvement
 - Workflow optimization
 - Waste reduction
 - Lean Manufacturing implementation



2. Data Analysis
 - Production efficiency analysis
 - Cost optimization
 - Quality improvement
3. Quality Management
 - Quality system development
 - Process control implementation
 - Standards compliance
4. Industrial Design
 - Product optimization
 - Equipment modification
 - Facility layout
5. Logistics and Supply Chain
 - Supply chain optimization
 - Inventory management
 - Distribution planning

5. Program Learning Outcomes

Knowledge and Understanding

K1: Demonstrate a sound and broad knowledge of concepts, principles, theories, and procedures related to industrial engineering

* Assessment Methods:

- Exams (mid-term/final)
- End-of-course surveys
- Assignments
- Alumni surveys
- Capstone project

K2: Apply fundamental theories and principles of physics, statistics, mathematics, and engineering to solve complex industrial engineering problems

* Assessment Methods:

- Mathematical modeling assignments
- Lab assessments
- Exit surveys
- Employer feedback



- Simulation exercises (MATLAB, Arena)

Skills

S1: Identify, formulate, and solve complex industrial engineering problems by applying engineering and scientific principles

* Assessment Methods:

- Problem-solving assignments
- Employer surveys
- Case study analysis
- Alumni feedback
- Capstone project

S2: Apply industrial engineering design to meet specified needs, considering health, safety, societal, environmental, and economic factors

* Assessment Methods:

- Design-based projects
- Employer surveys
- Capstone project
- Internship reports
- Safety and ethics-focused assignments

S3: Develop and conduct experiments, analyze and interpret data, and provide valid conclusions

* Assessment Methods:

- - Lab experiments
- - Internship feedback
- - Data analysis reports
- - Student course evaluations
- - Simulation projects

S4: Select and apply appropriate techniques, tools, and modern engineering practices, including modeling and simulation



* Assessment Methods:

- Simulation exercises
- Employer feedback
- Lab-based assessments
- Alumni surveys
- Hands-on assessments

S5: Demonstrate effective communication through oral and written forms on complex engineering activities

* Assessment Methods:

- Presentations
- Peer evaluations
- Written reports
- Self-assessment surveys
- Group presentations

Values, Autonomy, and Responsibility

V1: Adopt ethical principles and commit to professional ethics and responsibilities

* Assessment Methods:

- Capstone project evaluations with ethical component
- Employer feedback on ethics
- Case study analysis on ethics
- Alumni surveys

V2: Apply engineering and management principles to work as a team member and leader

* Assessment Methods:

- Group projects
- Peer evaluations
- Employer feedback
- Collaborative assignments



V3: Recognize the importance of and pursue lifelong learning in the context of innovation and technology

* Assessment Methods:

- Reflection reports
- Alumni surveys
- Research projects
- Self-assessment surveys
- Independent studies

V4: Recognize the impact of engineering solutions in global, economic, environmental, and societal contexts

* Assessment Methods:

- Case study analysis on global impact
- Alumni feedback
- Capstone projects
- Focus groups with industry professionals

6. Career Opportunities

6.1 Industry Sectors

- Manufacturing Industries
- Healthcare Systems
- Logistics and Supply Chain
- Consulting Firms
- Technology Companies
- Government Agencies
- Educational Institutions

6.2 Job Roles

- Industrial Engineer
- Process Engineer
- Quality Engineer
- Operations Manager
- Supply Chain Analyst
- Project Manager
- Systems Engineer
- Management Consultant



6.3 Professional Development

- Professional Certifications
- Continuing Education
- Professional Society Memberships

8. Additional Resources

- Detailed Curriculum Map: [[Link to Curriculum Section](#)]
- Student Handbook: [[Link](#)]
- Academic Calendar: [[Link](#)]
- Laboratory Facilities: [[Link](#)]