



## Professional Occupations

- Design Engineer
- Production Engineer
- Manufacturing Engineer
- Fabrication Engineer
- Research & Development Engineer
- Tooling Engineer
- Maintenance Engineer
- Process Engineer
- Quality Engineer
- Mechanical Engineer
- Power Engineer
- Consulting Engineer
- Test Engineer
- Sales Engineer
- Analytical Engineer

**Smart, desirable, feasible,  
marketable innovation to make  
the world better is what we do.  
IT'S WHAT YOU'LL DO.**

Be.  
Belong.  
Become.

# Alfaisal University Bachelor of Mechanical Engineering

## Program Overview

Mechanical Engineering is concerned with the Design, Development and Manufacturing of machines/mechanical parts and components, based on the principles of engineering, physics and material science. It is one of the oldest and the broadest of the engineering disciplines. Subjects in mechanical engineering overlap with various other engineering branches such as aerospace, architecture, biomedical, civil, chemical, computer, electrical, electronics and communications, industrial, instrumentation, materials, metallurgical, nuclear and petroleum engineering to varying amounts. The engineering field requires an understanding of core concepts including mechanics, kinematics, thermodynamics, material science, structural analysis and power. Mechanical engineers use these core principles along with tools like computer aided engineering and product life cycle management to design and analyse manufacturing plants, industrial equipment and machinery, heating and cooling systems, transport systems, aircraft, watercraft, robotics, medical devices, military equipment and others.

## Competitive Edge

The Mechanical Engineering program at Alfaisal university is concerned with upto- date technology, applications, and current industrial needs. The program focuses on producing high quality graduates and prepare them to the current tough conditions in the field and challenges in the industry. The ME program focuses on three major disciplines; Power, Manufacturing, and Design. These three disciplines (based on the principles of engineering, physics and material science) cover energy conversion, power plant technology, air conditioning, renewable energy systems, energy efficiency, development and manufacturing of machines and components, and materials. Our faculty possess strong educational and research backgrounds, with the majority of them graduating from well-renowned western universities. We have a small student-to-faculty ratio, which allows professors to dedicate enough attention to students on individual basis.

# Curriculum

Year	Term	Course-Title	CRHs
1st Year	Fall	Freshman English I	3
		Calculus I	3
		Mechanics and Waves for Engineers	3
		Mechanics and Waves for Engineers Lab	1
		Programming for Engineers	3
	Spring	Programming for Engineers Lab	1
		Introduction to Chemistry	3
		Introduction to Chemistry Lab	1
		<b>Total</b>	<b>18</b>
		Engineering Ethics	3
2nd Year	Fall	Freshman English II	3
		Calculus II	3
		Electromagnetism and Waves for Engineers	3
		Electromagnetism and Waves for Engineers Lab	1
		Materials Science and Engineering	3
	Spring	Materials Science and Engineering Lab	1
		<b>Total</b>	<b>17</b>
		Course-Title	CRHs
		Linear Algebra	3
		Calculus III	3
3rd Year	Fall	Foundations of Electrical Engineering	3
		Foundations of Electrical Engineering Lab.	1
		Differential Equations	3
		Applied Mechanics: Statics and Dynamics I	3
		<b>Total</b>	<b>16</b>
	Spring	Probability and Statistics for Engineers	3
		Manufacturing and Workshop Training	3
		Manufacturing and Workshop Training Lab	1
		Mechanics of Materials I	3
		Mechanics of Materials I Lab	1
4th Year	Fall	Introduction to Computer Aided Design	3
		Thermal Fluids Engineering I	3
		Thermal Fluids Engineering I Lab	1
		<b>Total</b>	<b>18</b>
		Arabic Language I	2
	Spring	Advanced Manufacturing Processes	3
		Advanced Manufacturing Processes Lab	1
		Instrumentation and Control Engineering	3
		Instrumentation and Control Engineering Lab	1
		Aircraft /Machine Design with Project	3
Summer	Aircraft /Machine Design with Project Lab	1	
	Numerical Methods	3	
	<b>Total</b>	<b>17</b>	
	Course-Title	CRHs	
	Mechanical Engineering Summer Internship	0	
<b>Total</b>	<b>0</b>		
4th Year	Fall	Course-Title	CRHs
		Islamic Studies II	2
		Technical Writing	3
		Finite Element Modelling for Dynamic and Structural Analysis (FEA Modelling)	3
		Finite Element Modelling for Dynamic and Structural Analysis (FEA Modelling) Lab	1
	Spring	Heating, Ventilation, and Air-Conditioning Engineering Safety and Risk Analysis	3
		<b>Total</b>	<b>15</b>
		Arabic Language II	2
		Vibration and Damping	3
		Engineering Economy and Cost Analysis	3
Summer	Technical Elective I	3	
	Technical Elective II	3	
	Mechanical Engineering Capstone Project	4	
	<b>Total</b>	<b>18</b>	

# College Collaboration



## Admissions Requirements

For admission criteria and how to apply, visit <http://admissions.alfaisal.edu>

For more information about Alfaisal's Mechanical Engineering, visit [http://coe.alfaisal.edu/departments/me\\_home](http://coe.alfaisal.edu/departments/me_home)

## Alumni Network

The College of Engineering has established strong strategic relations with various reputable institutions and organizations including:

- Advisory Committee consisting of senior faculty members of MIT and Cambridge
- BAE Systems
- Boeing
- KACST
- Lockheed Martin
- Raytheon
- Saudi Aramco
- SWCC (Saline Water Conservation Company)
- Thales
- ABB Saudi Arabia
- Shell Saudi Arabia
- Auburn University

### Alfaisal University

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