



Consulting and Training | Reach New Heights

Course Name

Material Engineering Fundamentals Program

Sector Name

Mechanical Engineering

Document Type

Generated by Boostlab

[Click Here To Visit Course](#)

ABU DHABI: +971 2 449 6000

ABU DHABI: +971 50 412 3294

DUBAI: +971 4 888 6787

KSA: +966 56 416 0617

EGYPT: +20 127 111 1770

Material Engineering Fundamentals Program

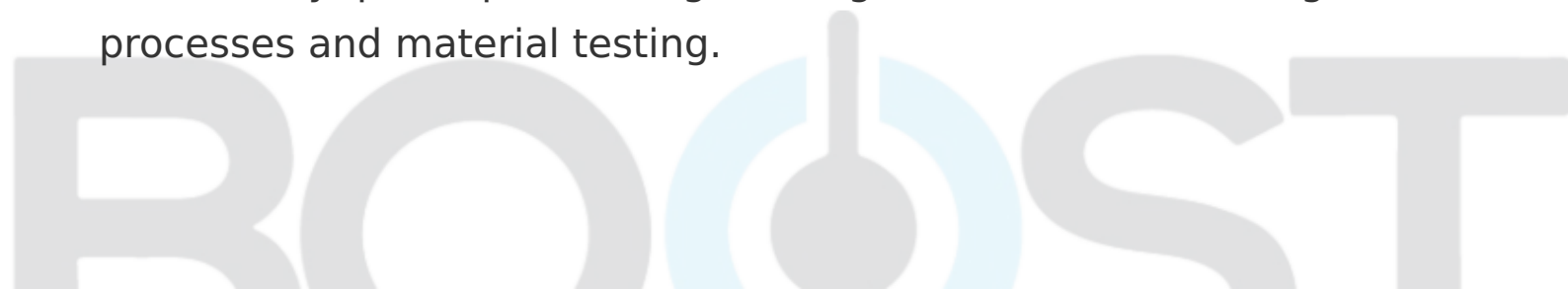
Course Introduction

Material engineering is a crucial discipline in the development and optimization of products across various industries. The selection and design of materials directly affect the performance, reliability, and cost-effectiveness of mechanical systems, electronics, and other engineering applications. A strong understanding of material properties, processing techniques, and applications is essential for engineers to create safe, efficient, and sustainable solutions.

Material engineers must be able to assess, choose, and manipulate materials to meet the specific requirements of different engineering projects. This program aims to provide participants with the foundational knowledge they need to work effectively with materials in engineering design.

This program covers key topics such as material properties, material selection, structure-property relationships, and processing methods. Participants will learn about metals, polymers, ceramics, and composites, and how to choose the best material for various applications. The course will focus on understanding mechanical, thermal, electrical, and chemical properties of materials.

Additionally, participants will gain insights into manufacturing processes and material testing.



ABU DHABI: +971 2 449 6000
ABU DHABI: +971 50 412 3294
DUBAI: +971 4 888 6787
KSA: +966 56 416 0617
EGYPT: +20 127 111 1770

[Click Here To Visit Course](#)

BOOST

Material Engineering Fundamentals Program

Target Audience

This course is designed for engineers, materials scientists, and professionals involved in material selection, design, and development in various industries.

ABU DHABI: +971 2 449 6000

ABU DHABI: +971 50 412 3294

DUBAI: +971 4 888 6787

KSA: +966 56 416 0617

EGYPT: +20 127 111 1770

[Click Here To Visit Course](#)



Material Engineering Fundamentals Program

Learning Objectives

- ✓ Understand the fundamental properties of materials and how they influence engineering design.
- ✓ Learn the different types of materials (metals, polymers, ceramics, composites) and their applications in various industries.
- ✓ Gain knowledge of material processing techniques and how they affect material performance.
- ✓ Develop skills in selecting the right materials based on specific design requirements and performance criteria.
- ✓ Explore material failure analysis, testing methods, and best practices for ensuring material integrity in engineering applications.

ABU DHABI: +971 2 449 6000

ABU DHABI: +971 50 412 3294

DUBAI: +971 4 888 6787

KSA: +966 56 416 0617

EGYPT: +20 127 111 1770

[Click Here To Visit Course](#)



Material Engineering Fundamentals Program

Course Outline

✓ 01 DAY ONE

Introduction to Materials Engineering and Material Properties

- ✓ Overview of material engineering and its importance in product design
- ✓ Types of materials: metals, polymers, ceramics, and composites
- ✓ Fundamental material properties: mechanical, thermal, electrical, and chemical
- ✓ Relationship between material structure and properties
- ✓ How to select materials based on performance requirements
- ✓ Introduction to material testing methods (tensile, hardness, impact tests)
- ✓ The role of material engineers in sustainability and innovation

ABU DHABI: +971 2 449 6000

ABU DHABI: +971 50 412 3294

DUBAI: +971 4 888 6787

KSA: +966 56 416 0617

EGYPT: +20 127 111 1770

[Click Here To visit Course](#)



Material Engineering Fundamentals Program

Course Outline

✓ 02 DAY TWO

Metals and Alloys: Properties, Processing, and Applications

- ✓ Types of metals and their properties (ferrous vs. non-ferrous metals)
- ✓ The role of alloys in improving material properties
- ✓ Heat treatment processes (annealing, quenching, tempering) and their effects
- ✓ Manufacturing methods for metals (casting, forging, welding)
- ✓ Applications of metals in mechanical systems, construction, and aerospace
- ✓ Corrosion resistance and coating techniques for metals

ABU DHABI: +971 2 449 6000
ABU DHABI: +971 50 412 3294
DUBAI: +971 4 888 6787
KSA: +966 56 416 0617
EGYPT: +20 127 111 1770

[Click Here To visit Course](#)



Material Engineering Fundamentals Program

Course Outline

✓ 03 DAY THREE

Polymers and Composites: Properties, Processing, and Applications

- ✓ Basic properties of polymers (thermoplastics, thermosets, elastomers)
- ✓ Polymerization processes and their impact on material properties
- ✓ Composite materials: types and benefits of fiber-reinforced composites
- ✓ Manufacturing methods for polymers and composites (injection molding, filament winding)
- ✓ Applications of polymers in automotive, medical devices, and electronics
- ✓ Environmental impact and recycling considerations for polymers

ABU DHABI: +971 2 449 6000
ABU DHABI: +971 50 412 3294
DUBAI: +971 4 888 6787
KSA: +966 56 416 0617
EGYPT: +20 127 111 1770

[Click Here To vist Course](#)



Material Engineering Fundamentals Program

Course Outline

✓ **04 DAY FOUR**

Ceramics and Advanced Materials: Properties and Applications

- ✓ Overview of ceramics and their properties (hardness, brittleness, heat resistance)
- ✓ Types of ceramics: traditional ceramics, advanced ceramics, and glasses
- ✓ Manufacturing methods for ceramics (sintering, extrusion, slip casting)
- ✓ Applications of ceramics in electronics, aerospace, and medical fields
- ✓ Introduction to advanced materials (nano-materials, smart materials, biomaterials)
- ✓ Material innovations in energy storage, sensors, and biomaterials

ABU DHABI: +971 2 449 6000

ABU DHABI: +971 50 412 3294

DUBAI: +971 4 888 6787

KSA: +966 56 416 0617

EGYPT: +20 127 111 1770

[Click Here To vist Course](#)



Material Engineering Fundamentals Program

Course Outline

✓ 05 DAY FIVE

Material Selection, Processing, and Failure Analysis

- ✓ Methods for material selection in engineering design (Ashby charts, cost-performance analysis)
- ✓ Overview of the material processing chain (from raw materials to final products)
- ✓ Understanding failure mechanisms: fatigue, creep, fracture, and wear
- ✓ Techniques for material failure analysis (fractography, microscopy, x-ray diffraction)
- ✓ The role of testing and quality control in ensuring material integrity
- ✓ Life cycle analysis and sustainable material design

ABU DHABI: +971 2 449 6000

ABU DHABI: +971 50 412 3294

DUBAI: +971 4 888 6787

KSA: +966 56 416 0617

EGYPT: +20 127 111 1770

[Click Here To vist Course](#)



Material Engineering Fundamentals Program

Confirmed Sessions

FROM	TO	DURATION	FEES	LOCATION
March 14, 2027	March 18, 2027	5 days	4250.00 \$	KSA , Riyadh
July 5, 2027	July 9, 2027	5 days	4950.00 \$	England , London
Sept. 14, 2026	Sept. 18, 2026	5 days	4250.00 \$	UAE , Dubai
Dec. 28, 2026	Jan. 1, 2027	5 days	4250.00 \$	UAE , Abu Dhabi

ABU DHABI: +971 2 449 6000
ABU DHABI: +971 50 412 3294
DUBAI: +971 4 888 6787
KSA: +966 56 416 0617
EGYPT: +20 127 111 1770

[Click Here To vist Course](#)

info@boostuae.com info@boostorg.com

Generated by BoostLab •

