OFFICE OF CONSULTATION & TRAINING
College of Engineering and Petroleum

Kuwait University- College of Engineering & Petroleum - Mechanical Engineering – OCT

ME0020- Basics of Nanotechnology

جامعة الكويت
KUWAIT UNIVERSITY

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Course objectives

• Introduction to nanotechnology.
• To illustrate the types and properties of nanomaterials.
• To illustrate the types of nanofabrication techniques.
• To illustrate the methods for characterization of Nanomaterials.
• Overview of nanotechnology applications

Training course duration:

Five Days

Timing:

8 a.m. - 2 p.m. Daily

Course outline :

Day one topics:

• History and development of nanotechnology
• Nanoscale phenomena and quantum effects
• Importance and applications of nanotechnology

Day two topics:

• Types of nanomaterials
• Synthesis methods: Top-down and bottom-up approaches
• Properties of nanomaterials

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Day three topics:

Nanofabrication Techniques
Photolithography and electron beam lithography
Chemical vapor deposition (CVD) and physical vapor deposition (PVD)
Self-assembly and molecular engineering

Day Four topics:

• Characterization of Nanomaterials
Experimental study of scanning electron microscopy (SEM)
Experimental study of atomic force microscopy (AFM)

Day Five topics:

• Applications of Nanotechnology
Nanofluid
Nanocoating
Energy storage and conversion
Environmental remediation
• Discussion and closing remarks

Instructor:

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