



OFFICE OF CONSULTATION & TRAINING
College of Engineering and Petroleum

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



ME003- Subtractive Manufacturing for Oil & Gas Innovation (Short Course)

Contact

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Course objectives

This hands-on course provides comprehensive training on subtractive manufacturing technologies for prototyping and precision part production. Participants will learn CAD/CAM workflows and gain practical experience with water jet cutting, and laser cutting.

Training course duration:

Three days

Timing:

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

Course outline :

Day one topics:

CAD Foundations & 2D Profile Design

- Overview of subtractive manufacturing processes and applications
- CAD strategies for 2D cutting vs 3D machining
- Design for manufacturing principles and material considerations
- Nesting optimization and material utilization
- Hands-on: Create multi-process designs requiring various cutting methods

Day two topics:

Water Jet Cutting Systems

- Water jet cutting principles, abrasive selection, and pierce dynamics
- Plasma cutting fundamentals and gas selection criteria



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- Material compatibility and thickness limitations
- Kerf compensation and edge quality optimization
- Hands-on: Cut metal brackets using both water jet and plasma systems

Day three topics:

Laser Processing

- Laser cutting physics and power density calculations
- Material interactions: cutting, engraving, and marking parameters
- Ventilation requirements and safety protocols
- Advanced techniques for living hinges and press-fit assemblies
- Hands-on: Create an interlocking assembly.

Fees:

KD 3,000

Instructor:

Dr. Ali AlSaibie

*Mechanical Engineer, College of Engineering & Petroleum,
Kuwait University*

Dr. Abdulaziz Alawadhi

*Mechanical Engineer, College of Engineering & Petroleum,
Kuwait University*

Eng. Saleh Aljemaz

*Mechatronics Engineer, College of Engineering & Petroleum,
Kuwait University*