



London TDM

# Engineering and Technical Skills Training Courses

**Course Venue:** United Arab Emirates - Dubai

**Course Date:** From 29 March 2026 To 02 April 2026

**Course Place:** Downtown Dubai

**Course Fees:** 5,000 USD

## Introduction

This comprehensive 5-day professional course is designed to equip participants with in-depth knowledge and hands-on experience in CNC machining and modern manufacturing processes. The course covers the fundamentals of CNC technology, programming, operation, and process optimization, ensuring participants gain the skills necessary to improve efficiency and precision in manufacturing settings.

### Objectives

- Understand the fundamentals of CNC machining and its applications in manufacturing.
- Develop proficiency in CNC programming and machine operation.
- Explore various manufacturing processes and their integration with CNC technology.
- Learn to troubleshoot and maintain CNC equipment effectively.
- Enhance productivity and precision in manufacturing through optimization techniques.

## Course Outlines

### Day 1: Introduction to CNC Machining

- Overview of CNC Machining Principles
- History and Evolution of CNC Technology
- Components and Configurations of CNC Machines
- Basics of CNC Coding and Programming Languages
- Safety Protocols and Procedures in CNC Operations

### Day 2: CNC Programming and Simulation

- Introduction to G-code and M-code
- Hands-on CNC Programming Exercises
- Utilizing Simulation Software for CNC Program Verification
- Optimizing CNC Program for Efficiency
- Workshop: Creating a Basic CNC Program

### Day 3: CNC Machine Operation

- Setting Up CNC Machines for Production
- Understanding Tooling and Workholding Devices
- Loading and Running CNC Programs
- Monitoring and Adjusting Machining Operations
- Precision Measurement and Quality Control Techniques

### Day 4: Advanced Manufacturing Processes

- Introduction to Additive Manufacturing and 3D Printing
- Integrating CNC and Automation Technologies
- Exploring Various Cutting Technologies (Laser, Waterjet, Plasma)
- Lean Manufacturing and Workflow Optimization
- Case Studies: Innovative Applications of CNC in Industry

## **Day 5: Troubleshooting and Maintenance**

- Common CNC Machine Issues and Resolutions
- Routine Maintenance Practices for CNC Equipment
- Troubleshooting Electronics and Mechanical Failures
- Predictive Maintenance and Condition Monitoring
- Final Project: Optimizing a CNC Machining Process