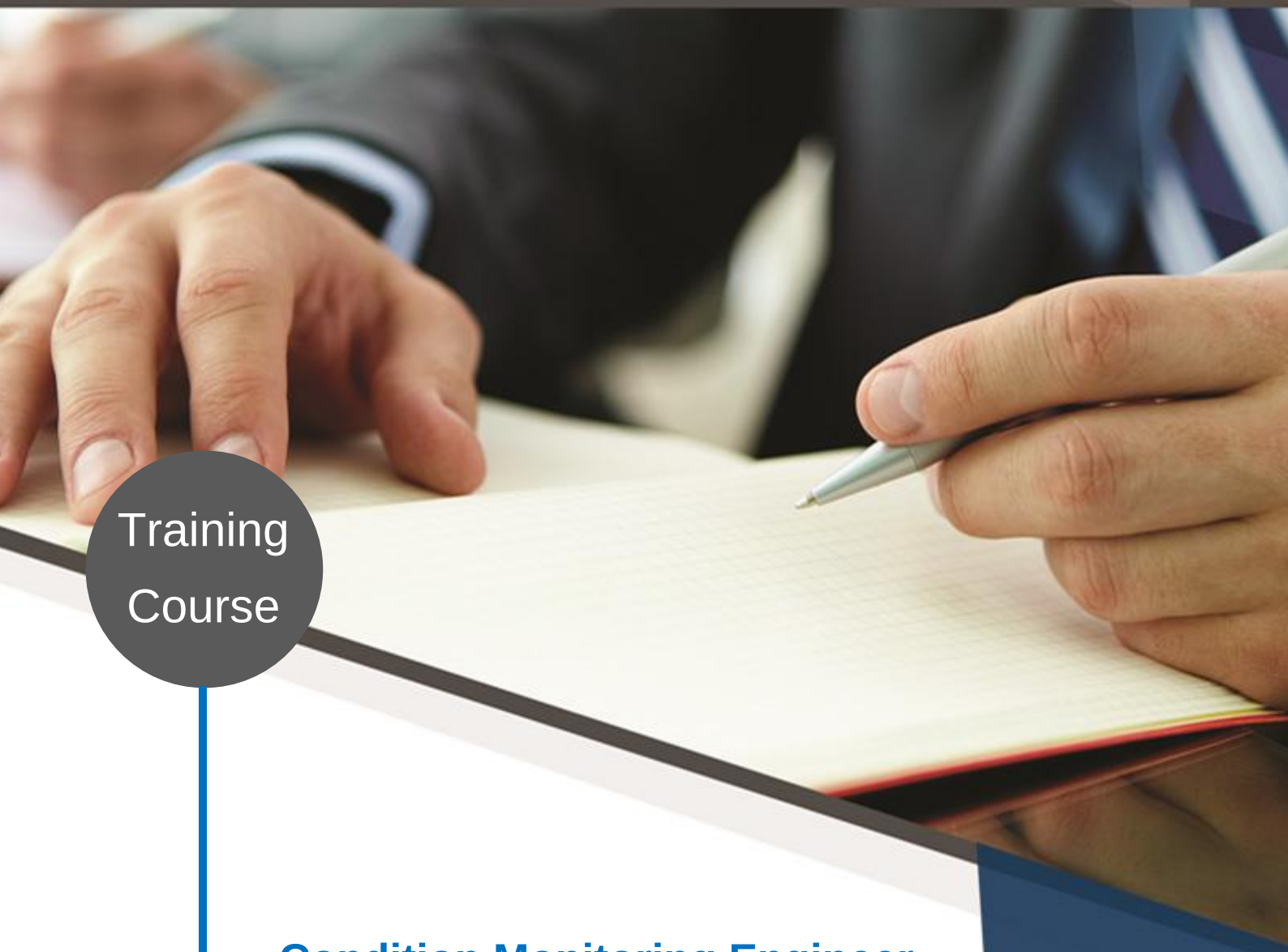
Skills International for Training & Consulting



Training Course

Condition Monitoring Engineer

Equipment Monitoring & Performance Analysis

Skills International for Training & Consulting

سكلز الدولية للتدريب والإستشارات

Course Plan

Introduction

This training course is designed to equip engineers and technical professionals with the knowledge and skills needed to effectively monitor equipment conditions and analyze performance data. Through a combination of theoretical concepts and practical applications, participants will learn to identify early signs of equipment failure, optimize maintenance strategies, and enhance operational reliability using modern condition monitoring techniques.

Course Objectives:

- ✓ Understand the principles of condition monitoring and its importance in maintenance strategies.
- ✓ Identify key monitoring techniques used for rotating and static equipment.
- ✓ Analyze vibration, temperature, lubrication, and other diagnostic signals.
- ✓ Apply data collection and analysis tools to assess equipment performance.
- ✓ Interpret condition monitoring results to make informed maintenance decisions.
- ✓ Integrate condition monitoring into predictive maintenance programs.
- ✓ Improve equipment reliability, availability, and lifecycle through performance analysis.

Who Should Attend?

- Condition Monitoring Engineers
- Maintenance and Reliability Engineers
- Mechanical and Electrical Engineers
- Asset Management Professionals
- Technical Supervisors and Planners
- Anyone involved in equipment diagnostics or maintenance planning

Training Methods:

- ✓ Online Video material.
- ✓ Presentation.
- ✓ Live Interactive sessions.
- ✓ Course presenter will make extensive use of all tools that will be needed for the virtual environment.
- ✓ Questions & Answers

Course Outline:

Day One

- Introduction to Condition Monitoring and Reliability-Centered Maintenance (RCM)
- Types of Maintenance: Reactive, Preventive, Predictive, and Proactive
- Condition Monitoring Techniques Overview
- Vibration Analysis Principles and Applications
- Thermal Imaging and Infrared Thermography

Day Two

- Oil and Lubricant Analysis for Wear Detection
- Acoustic Emission Monitoring
- Ultrasound Testing in Predictive Maintenance
- Motor Current Signature Analysis (MCSA)
- Basics of Root Cause Failure Analysis (RCFA)

Day Three

- Data Acquisition Tools and Sensors
- Interpreting Time Waveform and Frequency Spectrum
- Setting Alarm Thresholds and Condition-Based Alerts
- Signal Processing and Filtering Techniques
- Condition Monitoring for Rotating Equipment (e.g., pumps, motors, fans)

Day Four

- Monitoring Static Equipment (e.g., heat exchangers, tanks, piping)
- Integration of Condition Monitoring into CMMS systems
- Use of AI and Machine Learning in Equipment Monitoring
- Creating Performance Dashboards and Reports
- Key Performance Indicators (KPIs) for Equipment Reliability

Day Five

- Cost-Benefit Analysis of Predictive Maintenance
- Health and Safety Considerations in Monitoring Activities
- Remote Monitoring and IoT in Industrial Applications
- Case Studies: Diagnosing Real Equipment Failures
- Hands-On Sessions: Vibration Measurement, Data Analysis, and Fault Simulation

Training Details

Course Duration	5 Days
Pre-Schedule	25 – 29 Aug 2025
Venue	Kaiserin Elisabeth – Hotel - Vienna
Training Fees Per Person	KWD 1800 (One Thousand Eight Hundred Only)
Course Fees Include	✓ Tuition documentation ✓ Curriculum and Training Handout ✓ Five star Lunch ✓ Completion Certificates ✓ Lunch Included