PROJACS ACADEMY
by egis

# Mechanical Installation Techniques, Testing, Handover, Operation and Maintenance

# تقنيات التركيبات الميكانيكية، والاختبار، والتسليم والتشغيل والصيانة

**11 – 15 December 2023**

**Dubai / UAE**

## Introduction

This course has been designed to benefit engineers and technicians who are involved in the commissioning, operation, and maintenance of any industrial unit. It covers all the fundamentals of Maintenance as well as the advanced techniques of maintenance planning, scheduling & monitoring as well as the technical steps required to develop and raise the maintenance efficiency of any running project.

## Objectives

Upon completion of this course, participants will have a thorough understanding of the fundamental concepts of Mechanical systems testing, handover, operation, and maintenance. Participants will have in-depth knowledge of HVAC, Fire fighting and fire alarm systems, Pumps, Drainage system, Heating system , isolation materials inside the buildings, equipment selection, proper operation, trouble shooting through presentation of actual case studies.

## Who Should Attend?

**This course is targeted for:**

- Maintenance Engineers
- Operation Engineers.
- Maintenance Technicians
- Operation Technicians
- Maintenance Supervisors
- Operation Supervisors

## Course Outline

### Day 1: Main Mechanical Systems

**1.1 HVAC Systems**
- The Major HVAC system Types
- Cooling Towers
- Secondary system components
- Central Systems
- All-Air systems

**1.2 Basic of Plumbing Systems**
- Common Plumbing Processes
- Cold Water Supply
- Hot Water Supply

**1.3 Fire Protection**
- Water-Based Suppression
- Fire Suppression without Water

**1.4 Auxiliaries**
- Pumps
- Fans
- Compressors

### Day 2: Testing and Handover

- Defining the equipment which will be tested
- Defining the testing requirement from the standards/regulations/specifications
- Checking the equipment
- Testing the equipment
- Checking the system
- Training the owner technicians/engineers
- Handover

### Day 3: Operation

- Defining the equipment which will be operated
- Defining the pre-starting preparations
- Defining the starting preparations
- Defining the shutdown preparations
- Defining the readings to be taken during the running time
- Analyzing the readings and defining the predictive maintenance tasks

## Days 4 & 5 Maintenance

### 4.1 Types of Maintenance

Reactive maintenance
Time based maintenance
Condition based maintenance
Proactive maintenance

### 4.2 The Failure Analysis and Troubleshooting System

Causes of Machinery Failures.
Root Causes of Machinery Failure.
Methods of fault analysis

### 4.3 Inspection and Predictive Approach

Basics of NDT
Applying the predictive approach
Surviving the maintenance shutdown
Decision Making.
Planning for Change.

### 4.4 Build a preventive maintenance program

Perform maintenance planning and scheduling
Manage maintenance spare parts
Building PM program

## Training Method

- Pre-assessment
- Live group instruction
- Use of real-world examples, case studies and exercises
- Interactive participation and discussion
- Power point presentation, LCD and flip chart
- Group activities and tests
- Each participant receives a 7" Tablet containing a copy of the presentation, slides and handouts
- Post-assessment

## Program Support

This program is supported by interactive discussions, role-play, case studies and highlight the techniques available to the participants.

## Schedule

**The course agenda will be as follows**:

- Technical Session 08.30-10.00 am
- Coffee Break 10.00-10.15 am
- Technical Session 10.15-12.15 noon
- Coffee Break 12.15-12.45 pm
- Technical Session 12.45-02.30 pm
- Course Ends 02.30 pm

## Course Fees*

- **3,200 USD**
  **VAT is Excluded If Applicable*

## المقدمة

تم تصميم هذه الدورة لإفادة المهندسين والفنيين الذين يشاركون في تشغيل وتشغيل وصيانة أي وحدة صناعية. يغطي جميع أساسيات الصيانة وكذلك التقنيات المتقدمة لتخطيط الصيانة وجدولتها ومراقبتها بالإضافة إلى الخطوات الفنية المطلوبة لتطوير ورفع كفاءة الصيانة لأي مشروع قيد التشغيل.

## الاهداف

عند الانتهاء من هذه الدورة ، سيكون لدى المشاركين فهم شامل للمفاهيم الأساسية لاختبار الأنظمة الميكانيكية وتسليمها وتشغيلها وصيانتها. سيكون لدى المشاركين معرفة متعمقة بأنظمة التدفئة والتهوية وتكييف الهواء ومكافحة الحرائق وإنذار الحريق والمضخات ونظام الصرف الصحي ونظام التدفئة ومواد العزل داخل المباني واختيار المعدات والتشغيل السليم وحل المشكلات من خلال عرض دراسات الحالة الفعلية.

## الحضور

**تستهدف هذه الدورة ما يلي:**

- مهندسو الصيانة
- مهندسو العمليات
- فنيو الصيانة
- فنيو التشغيل
- مشرفو الصيانة
- مشرفو العمليات