MAESTRO CONSULTANTS

MACHINERYFAILURE ANALYSIS,PREDICTIVE MAINTENANCE & PROBLEM SOLVING

COURSE OUTLINE 2020

TRAINING TITLE

MACHINERY FAILURE ANALYSIS, PREDICTIVE MAINTENANCE & PROBLEM SOLVING

VENUE

Dubai, UAE

DURATION

5 Days

DATES

30 August - 03 September 2020

PRICE

US$4,000 per attendee including training material/handouts, morning/afternoon coffee breaks and Lunch buffet daily.

TRAINING INTRODUCTION

The course presents understanding of equipment failure characteristics. To achieve an optimal maintenance program that meets specified safety, environmental, and economic goals. Participants will learn to preserve equipment functions by identifying appropriate predictive maintenance (PdM) tasks, failure finding tasks and other actions that protect against failure or mitigate the consequences of failure

This course presents a systematic approach to fault diagnosis and failure prevention in a broad range of machinery used in many industries. The key routes to preventive maintenance are demonstrated through both overview and the study of examples in different failure analysis and a sequential approach to machinery troubleshooting and problem solving

Failure analysis, Troubleshooting and Predictive & Planned Maintenance techniques, including vibration analysis, oil analysis, and other techniques are discussed in the course with a view to optimising the maintenance engineering effort while maximising production

This course provides the fundamentals of PdM and condition monitoring applicable to plants, facilities and manufacturing lines. Predictive Maintenance & Condition Monitoring will provide Participants with a framework to make the right decisions on what equipment needs condition monitoring, what technologies to use to meet their needs and how to measure the effectiveness of their decisions

TRAINING OBJECTIVES

Participants will learn how to collect, analyze and interpret failure statistics and will also gain an understanding of FMECA. Participants will be instructed in condition monitoring methods and will be taught how vibration analysis can be used to detect, locate, severity assess and diagnose a range of common faults in machines

Upon the successful completion of this course the participant shall be able to:

➢ understand the principles of failure analysis in process plant
➢ An understanding of Machine Failure Analysis and Troubleshooting techniques
➢ learn about machinery troubleshooting in pumps, centrifugal compressors, gas turbines and electric motors
➢ Describe the Benefits of a PdM & Condition Monitoring Program
➢ Identify What Equipment to Monitor
➢ Predict What Maintenance Needs to be done and When
➢ An understanding of a range of Planned & Predictive Maintenance Technologies
➢ Knowledge of the potential contribution of each these technologies to maintenance efficiency
➢ Guidelines indicating how these technologies can interact with and support each other

TRAINING AUDIENCE

This seminar is directed towards Supervisors, Team Leaders and Managers in Maintenance, Engineering and Production. The seminar will also benefit anyone who wishes to update themselves on Predictive Maintenance Technologies and Failure Analysis techniques, as well as those who have to judge the suitability of these technologies for their needs, and learn how to implement them for the benefit of their organizations

COURSE OUTLINE

Module 1

Failure Analysis techniques

Equipment failure

Six patterns of component failure rate over life

Oil Analysis

Motor Circuit

Surface Flaw Detection

Liquid Penetration

Magnetic Particle

Sub-Surface Flaw Detection

Ultrasonic Thickness (Auto/Manual)

Eddy Current

Radiography

Endscope (Borescope) inspection

Module 5

Vibration analysis

Introduction

Data acquisition

Data interpretation

Vibration due to plane (journal) bearings

Vibration due to resonance

Turbomachinery problems

Vibration problems with specific machinery types

Gearbox vibration

Condition Monitoring

Condition Monitoring

The machine life cycle

Standards Organizations

List of BS/ ISO condition monitoring standard

BS ISO 17359

Computer application in machine condition monitoring

TRAINING CERTIFICATE

MAESTRO CONSULTANTS Certificate of Completion for delegates who attend and complete the training course

METHODOLOGY

Our courses are highly interactive, typically taking a case study approach that we have found to be an effective method of fostering discussions and transferring knowledge. Participants will learn by active participation during the program through the use of individual exercises, questionnaires, team exercises, training videos and discussions of "real life" issues in their organizations. The material has been designed to enable delegates to apply all of the material with immediate effect back in the workplace.