

## **MECHANICAL TRAINING SEMINARS**

### **M400 Achieving Excellence In Maintenance Management**

The purpose of this course is to present the maintenance professional with a solid resource of information that will enable him or her to better manage, maintain, and improve the operation of their maintenance department.

### **M401 Environmental Compliance**

This general course heading includes training ranging from Asbestos, and Lead, to OSHA regulations regarding Hazardous Waste.

### **M402 Confined Space Entry**

This course covers the OSHA guidelines for confined space entry safety.

### **M500 Basic Shop Math Refresher**

This course is designed to refresh the student's math skills so that they can perform calculations related to maintenance in industry.

### **M501 Mechanical Troubleshooting Techniques**

This course is designed to teach the student techniques to become a better troubleshooter. They learn the correct use of instruments and devices to diagnose problem areas.

### **M502 Bearings**

This course covers the various types of bearings and their applications. Reasons for bearing failure and how to apply the principles of preventive and predictive maintenance are discussed. The principles and techniques of bearing lubrication are also covered.

### **M503 Lubrication**

This course is intended to teach the student to distinguish between when it is appropriate to use grease and when it is appropriate to use oil when lubricating machinery. The different types of lubricants will be discussed. Several lubrication techniques will be covered.

### **M504 Mechanical Drives**

This course covers the different mechanical components that drive machinery. It includes gears, chain drives, v-belt drives, types of couplings, and their proper applications. Troubleshooting and preventive and predictive techniques are discussed. Sizing of drives, gear tooth forms, and speed ratios are also covered.

### **M505 Precision Alignment**

This course stresses the importance of shaft alignment. Students are taught how to use correct, accurate methods to achieve precision shaft alignment. This course includes how to use dial indicators with the rim and face technique and explains the reverse dial method. This is a hands-on course where the student actually aligns mock-up drives in the classroom.

### **M506 Centrifugal Pumps and Sealing Methods**

This course teaches the student the basic principles of centrifugal pumps. Theory is taught and then applied to troubleshooting by checking measurable parameters such as discharge pressure, suction pressure, and amperage. Sealing methods are covered. Packing and several types of mechanical seals are discussed.

### **M507 Fans and Blowers**

This course explains the basic operating principles of fans and blowers and how to apply them to troubleshooting and predictive maintenance techniques.

### **M508 Vibration Analysis**

This course teaches the student the importance of identifying the source and/or cause of vibration in machinery. Devices and techniques for performing vibration analysis are covered.

### **M509 Air Compressors**

This course covers the principles of air compressors. The different applications for air compressors are also discussed. Proper maintenance is stressed.

### **M510 Precision Measurement**

This course stresses the importance of precise measurements in the industrial environment. Students are taught how to use a variety of instruments and devices used in precision measurement applications.

### **M511 HVAC**

This course covers the principles and applications of heating, ventilating, and air conditioning. The methods of maintaining HVAC systems is also covered, as well as the environmental laws that control these methods.

### **M512 AC&R**

This course covers the principles and applications of air conditioning and refrigeration. The methods of maintaining AC&R systems is also covered, as well as the environmental laws that control these methods.

### **M513 EPA Preparatory/Certification Course**

This course is designed to prepare the student for their Type I, Type II, and/or Type III certification in refrigerant purchase and handling. Upon completion of the course work,, the student is offered the opportunity to sit for the EPA (Environmental Protection Agency) Exam administered by Industrial Trainers of America, Inc. Actual certification is granted by ESCO INSTITUTE.

### **M514 Boilers**

This course is designed to familiarize the student with the different types of steam boilers and systems. It covers the equipment and accessories, instruments, water treatment, operation and maintenance of boilers.

### **M515Welding**

This course is designed to familiarize the student with different types of welding, their processes, and safety issues regarding welding. The basics of metallurgy, welding and cutting processes, the physics of welding, variations of weld joints and positions, and welding safety will be covered.

### **M516Pneumatics**

This course is designed to familiarize maintenance personnel with pneumatics as they relate to industrial machinery. Students will learn how and why pneumatic components work and how to properly maintain pneumatic systems.

### **M517Hydraulics**

This course is designed to familiarize maintenance personnel with hydraulics as it relates to industrial machinery. Students will work with fluid power principles and experience the functional characteristics of hydraulic components. Proper maintenance and troubleshooting of hydraulic systems will be covered.

### **M518Pipefitting**

This course is designed to provide the maintenance mechanic with the information to safely complete the repair procedures on fuel gas, steam, condensate, stock, air, hydraulic, fire, city and mill water piping systems.