TECHNICAL EDUCATION ACADEMY

School of Engineering

COURSE PROGRAMME

000651

MECH064 - Mechanical Integrity

Mechanical integrity is essential for maintaining the safety, reliability, and efficiency of industrial operations, particularly in the oil, gas, and energy sectors.



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Course overview

Intermediate level

Why take this course

Mechanical integrity is essential for maintaining the safety, reliability, and efficiency of industrial operations, particularly in the oil, gas, and energy sectors. This training programme covers the key elements of designing, developing, and implementing a mechanical integrity program, focusing on regulatory compliance, continual improvement, and integration with reliability programs.

The course is divided into sections that cover the goals of mechanical integrity, including motivations, regulatory standards, and the relationship with reliability programs. It also highlights the roles and responsibilities of personnel and the importance of key performance indicators (KPIs) for continual improvement.

Participants will learn how to design a program tailored to their organization's needs, whether for minimal compliance or full integration with reliability systems. The development process includes identifying critical equipment, selecting appropriate tasks, determining task frequency, and addressing personnel training, quality assurance, and equipment deficiency resolution. The course also covers root cause analysis and management of change (MOC) procedures.

The final section focuses on implementing the program using a detailed checklist, ensuring proper documentation, data management, and the use of computer systems for tracking and analysis. This training prepares participants to establish a mechanical integrity program that enhances both safety and operational reliability.

Recommended prerequisites: Participants should have practical, technical experience in maintenance of complex systems.

Who it is for and how it helps

Employees responsible for designing, developing, and implementing a PSM based MI program, mechanical and plant engineers, plant manager, maintenance and production managers and supervisors, process safety coordinators.

What you will learn

- Learn up-to-date mechanical isolation (MI) strategies and techniques for effectively building and implementing a comprehensive MI program that addresses process safety management requirements and/or reliability and other concerns as defined through company, industry, and regulatory requirements
- Learn how to develop, implement, and maintain an efficient MI program. Through thorough, step by step instruction the experienced instructor guides you through building your own MI program regardless of the age, size, or complexity of the facility
- Learn how to expand this program to encompass reliability and quality goals
- Learn how to define and assign roles and responsibilities

Course overview — continued

- Learn how to integrate your new or revised MI program with existing MI activities
- Develop an inspection and testing plan using your own equipment list or generic examples
- Apply quality assurance methods for identifying and resolving equipment deficiencies
- Learn how to develop maintenance procedures and training programs for maintenance personnel

Curriculum

Modules 01–04

01 Goals for mechanical integrity

- Motivations for mechanical integrity
- Regulations, standards, and interpretations
- Relationship to Reliability programs
- Roles and Responsibilities for mechanical integrity
- Key performance indicators for mechanical integrity
- Continual improvement of a mechanical integrity program

02 Designing a mechanical integrity program

- Minimal mechanical integrity program only for compliance?
- Fully integrated reliability program?
- Something in-between?

03 Developing a mechanical integrity program

- Equipment identification and related issues
- List of critical equipment
- Types of mechanical integrity activities (reactive, proactive, preventive, predictive)
- Choosing the right task type and choosing the specific task
- Determining the right frequency for the task (condition or time dependent)
- Personnel focus
- Procedures
- Training
- Management systems required and related issues
- Quality assurance
- Equipment deficiency resolution
- Root cause analysis
- Management of change

04 Implementing a mechanical integrity program

- Review of detailed checklist for implementing a mechanical integrity /reliability system
- Documenting and managing data/results, computer systems and other equipment files

Curriculum

Pre-course requirements

- Участники должны иметь практический технический опыт в обслуживании сложных систем

Joining the programme

Contact the Academy and quote course code 000651 to confirm dates, delivery format, prices and enrolment terms.

Training for your team

Tell us your business goals, the roles and number of participants, and your preferred dates and location. This will help us discuss the right training option.

Preparing for the programme

Read the pre-course requirements in this programme before enrolling.

Discuss your training needs

mail@tecedu.org
www.tecedu.academy

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