TECHNICAL EDUCATION ACADEMY

School of Engineering

COURSE PROGRAMME

000581

MECH023 - Flange Make Up and Bolting for Integrity

Flange Make Up and Bolting for Integrity training programme provides the trainee with the necessary underpinning knowledge and practical skills to make and break flanged joints with manual bolt-up methods.



Learn from the Best in the Business!

Course overview

Intermediate level

Why take this course

Flange Make Up and Bolting for Integrity training programme provides the trainee with the necessary underpinning knowledge and practical skills to make and break flanged joints with manual bolt-up methods. At the end of this course all participants will be competent in ensuring the integrity of flanges on pipework and vessels in process plants.

The aim of this course is to provide knowledge of the correct procedures for assembling the types of pipe flange connections found in the oil and gas processing industry, selection and use of the correct materials for gaskets & bolting, the methods of controlled bolting using a variety of torque & tensioning tools/equipment, and to assess delegates competence in practically applying these procedures.

Who it is for and how it helps

Engineers and technicians from a non-mechanical discipline requiring multi-skill or refresher training, mechanical engineers and technicians wishing to refresh or enhance existing skills in a practical yet non-production environment.

What you will learn

- Plan and prepare for the work
- Break flange in accordance with flange management procedure
- Inspect Flange and components
- Calculate hydraulic pressures required to achieve desired bolt tension
- Use hand spanners, torque wrenches, hydraulic torque, and tensioning equipment
- Make flange joint in accordance with flange management procedure
- Finish the job

Curriculum

Modules 01–06

01 Introduction to Flanged Joints and Standards

- Overview of flanged joints in the petrochemical industry
- Flange types, materials, sizes, and pressure/temperature ratings
- BS1560-3.1/ ANSI B16.5 standards

02 Gasket Fundamentals and Material Selection

- Gasket types, applications, and materials
- Gasket installation procedures and requirements
- Piping classification and material selection for design standards

03 Health, Safety, and Environment (HSE) Considerations

- HSE and industry initiatives for hydrocarbon leak reduction
- Staff training and competence development

04 Flange Inspection and Defect Management

- Flange inspection techniques and procedures
- Defect identification, rejection criteria, and repair methods

05 Flange Assembly and Bolt Tensioning Techniques

- Flange make-up procedures
- Bolt tensioning methods and management
- Use of hand spanners, torque wrenches, hydraulic torque, and tensioning equipment

06 Hydraulic Pressure Calculations

- Calculation of hydraulic pressures for desired bolt tension
- Worked examples and practical exercises

Participation and contacts

Joining the programme

Contact the Academy and quote course code 000581 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

The published programme does not specify any prerequisites. Contact us before enrolling to confirm how to prepare.

Discuss your training needs

mail@tecedu.org
www.tecedu.academy

Learn from the Best in the Business!