

Value Added Course Inspection of Welded Joints

Course Objective

- To make the students aware about welded joints, defects and their inspection techniques along with welding procedure specification and welder performance qualification

Contents

Introduction and classification: weld joints, weld defects, testing and inspection techniques of weldments (3 hrs)

Destructive Testing of weldments: hardness tests; tensile tests for groove and fillet welds-full section, reduced section and all-weld- metal tensile tests; root, face and side bend tests; fillet weld break tests; (4 hrs)

Non-Destructive Testing of Weldments: Visual inspection; Dye-penetrant inspection; Magnetic particle inspection; Ultrasonic Inspection; Radiographic Inspection, X-ray tubes, gamma-ray sources, defect discernibility; Eddy current inspection; Leak tests (7 hrs)

Welding Procedure Specification (WPS), Procedure Qualification Record (PQR), Welder Performance Qualification (WPQ) (4 hrs)

Practical training on following (through industrial visits and in-house facilities):

i. Preparation of weldment;	(4 hrs)
ii. Tensile testing;	(2 hrs)
iii. Hardness Testing;	(2 hrs)
iv. Free and guided bend test bend test;	(2 hrs)
v. Dye Penetrant test;	(2 hrs)
vi. Ultrasonic Inspection/Magnetic Particle Inspection	(6 hrs)

Duration

12 weeks

Faculty

Dr. Hari Om, Professor (Mechanical Engineering)

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Skill Set Gain / Employability Opportunity

- Students will be able to carry out destructive and non-destructive inspection of welded joint.
- The students will be acquainted with welding procedure specification and welder performance qualification



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