



**SCANDINAVIAN ACADEMY**  
For Training and Development

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# Course: Steel Welding & Installation

Code	City	Hotel	Start	End	Price	Language - Hours
CM-890	Madrid (Spain)	Hotel Meeting Room	2027-02-22	2027-02-26	5950 €	En - 25

## Course Introduction:

Steel welding and installation are critical disciplines in modern construction, manufacturing, and infrastructure development. As steel structures grow in scale and complexity, professionals must master not only the core welding techniques but also the standards, safety practices, and quality control methods essential for durable and reliable installations. This course delivers an in-depth, practice-oriented experience designed to equip participants with the knowledge and skills required to meet today's industrial demands in steel welding and structural assembly.

## General Objective:

To provide participants with advanced knowledge and practical understanding of steel welding and installation techniques, with emphasis on industrial applications, global standards, quality inspection, and ensuring structural safety.

## Objectives:

- Understand the fundamentals of steel welding processes and joint types.
- Apply global welding standards such as ASME, AWS D1.1, and ISO 3834.
- Detect and address welding defects in steel.
- Read and interpret technical drawings and welding symbols.
- Perform destructive and non-destructive testing (DT & NDT).
- Understand procedures for steel structure installation in industrial settings.
- Analyze steel behavior under heat, stress, and corrosion.
- Enhance safety and quality assurance in welding and installation operations.



## Target Audience:

- Welding engineers and technicians.
- Site supervisors and steel installation project managers.
- Professionals in construction, oil & gas, infrastructure, and energy sectors.
- QA/QC engineers and technical inspectors.

## Course Outline:

### Day One: Introduction & Steel Weld Joint Design

- Fundamentals of steel welding.
- Joint types (Butt, T, Corner, Lap...)
- Load performance and joint strength.
- Design standards: AWS D1.1 & ISO 5817.
- Case studies of design and installation failures.

### Day Two: Steel Welding Processes

- Welding processes: SMAW, TIG, MIG for steel.
- Steel welding parameters: temperature, speed, metallurgy.
- Pre-weld and post-weld heat treatment (PWHT).
- Electrode and flux selection for carbon and alloy steels.

### Day Three: Welding Defects & Quality Control

- Common steel welding defects: cracks, porosity, lack of fusion.
- Causes, prevention, and implications.
- Evaluation against ASME Section IX, ISO 6520.
- Welding inspection planning and documentation.

### Day Four: Welding Symbols & Steel Installation

- Reading welding drawings (AWS A2.4 symbols).



- Interpreting shop and site drawings.
- Steps in steel structure installation.
- Equipment used: cranes, lifting points, safety measures.

### **Day Five: Testing & Practical Applications**

- Destructive testing (tensile, bend, impact tests).
- Non-destructive testing (X-ray, ultrasonic, magnetic, dye penetrant).
- Testing procedures and ISO 9712 compliance.
- Workshop: video-based simulations and scenario analysis.



The Scandinavian Academy for Training and Development adopts the latest scientific and professional methodologies in training and human resource development, aiming to enhance the efficiency of individuals and organizations. Training programs are delivered through a comprehensive approach that includes:

- Theoretical lectures supported by PowerPoint presentations and visual materials (videos and short films).
- Scientific evaluation of participants before and after the program to measure progress and knowledge acquisition.
- Brainstorming sessions and practical role-playing to simulate real-life scenarios.
- Case studies tailored to align with the training content and participants work nature.
- Assessment tests conducted at the end of the program to evaluate the achievement of training objectives.

Each participant receives the training material (both theoretical and practical) in printed form and saved on a CD or flash drive. Detailed reports, including attendance records, final results, and overall program evaluations, are also provided.

Training materials are prepared professionally by a team of experts and specialists in various fields. At the end of the program, participants are awarded a professional attendance certificate, signed and accredited by the Scandinavian Academy for Training and Development.

### **Program Timings:**

- 9:00 AM to 2:00 PM in Arab cities.
- 10:00 AM to 3:00 PM in European and Asian cities.

### **The program includes:**

- A daily Coffee Break provided during the sessions to ensure participants comfort.