

Shielded Metal Arc Welding NC I

Course Description

This course is designed to enhance the knowledge, desirable attitudes and skills of a WELDER in accordance with industry standards. It covers core competencies such as: weld carbon steel plates using SMAW. This includes common competencies: apply safety practices, interpret drawing and sketches, perform industry calculations, contribute to quality system, use hand tools, prepare weld materials, setup welding equipment, fit up weld materials and repair welds. It also includes competencies such as, receive and respond to workplace communications, work with others, demonstrate work values and practice basic housekeeping procedure.

Nominal Duration

- Basic Competencies 28 hrs.
- Common Competencies 56 hrs.
- Core Competencies 184 hrs.

TOTAL 268 hrs.

A person who has achieved this qualification is competent to be:
Plate Welder

TRAINEE ENTRY REQUIREMENTS:

- At least 15 years of age
- At least Junior High School (Grades 9 & 10) level or graduate
- Physically and mentally fit
- With good moral character
- Can communicate in English. Both Oral and Written
- Can perform basic mathematical computations
- Must undergo Career Profiling and Trainability Evaluation

TWC Training is guided by the ten (10) basic principles of Competency-Based Training (CBT) delivery.

1. The training is based on curriculum developed from the competency standards;
2. Learning is modular in its structure;
3. Training delivery is individualized and self-paced;
4. Training is based on work that must be performed;
5. Training materials are directly related to the competency standards and the curriculum modules;
6. Assessment is based in the collection of evidence of the performance of work to the industry required standard;
7. Training is based on both on and off-the-job components;

8. Allows for recognition of prior learning (RPL) or current competencies;
9. Training allows for multiple entry and exit; and
10. Approved training programs are Nationally Accredited

Course Structure

BASIC COMPETENCIES (SMAW NC I)

| Unit of Competency | Module Title | Learning Outcomes | Nominal Duration |
|--|--|---|------------------|
| • Receive and respond to workplace communication | • Receiving and respond to workplace communication | • Explain routine speaking and messages in a workplace. • Follow routine speaking and message. • Perform work duties following written notices. | 8 hrs |
| • Work with others | • Working with others | • Develop effective workplace relationship. • Contribute to work group activities. | 4 hrs |
| • Demonstrate work values | • Demonstrating work values | • Apply work values/ethics. • Deal with ethical problems. • Maintain integrity of conduct in the workplace. | 10 hrs |
| • Practice housekeeping procedures | • Practicing housekeeping procedures | • Maintain work areas, tools and equipment. • Follow standardize work process and procedures. | 6 hrs |

COMMON COMPETENCIES (SMAW NC I)

| Unit of Competency | Module Title | Learning Outcomes | Nominal Duration |
|----------------------------------|-------------------------------------|---|------------------|
| • Apply safety practices | • Applying safety practices | • Identify hazardous area. • Use personal protective clothing and devices. • Perform safe handling of tools, equipment and materials. • Perform first aid. • Use fire extinguisher. | 8 hrs |
| • Interpret drawing and sketches | • Interpreting drawing and sketches | • Identify standard alphabet of lines. • Identify orthographic/ isometric views. • Interpret standard drawing symbols, dimensional tolerances and notations. | 8 hrs |
| • Perform industry calculation | • Performing industry calculations | • Perform four fundamental operations. • Perform conversions of units. • Perform calculations on algebraic expressions. • Compute percentage and ratio. | 8 hrs |

Course Structure

| Unit of Competency | Module Title | Learning Outcomes | Nominal Duration |
|--------------------------------|----------------------------------|--|------------------|
| • Contribute to quality system | • Contributing to quality system | • Inspect work done. • Apply quality standards to work. • Protect company property and customer interests. | 4 hrs |
| • Use hand-tools | • Using hand-tools | • Select hand tools. • Use hand tools. • Maintain hand tools. | 4 hrs |
| • Prepare weld materials | • Preparing weld materials | • Set up cutting equipment. • Cut and prepare edge of materials. • Clean surfaces and edges. • Prepare welding consumables. • Prepare welding safety and protective equipment. | 8 hrs |
| • Set-up welding equipment | • Setting-up welding equipment | • Set up welding machine. • Set up welding accessories. • Set up welding positioners, jigs and fixtures. | 4 hrs |
| • Fit-up materials | • Fitting up materials | • Perform tack welding. • Check gap and alignment. | 4 hrs |
| • Repair weld | • Repairing weld | • Mark/locate weld defects. • Prepare tools and equipment. • Remove defects. • Perform re-welding | 8 hrs |

CORE COMPETENCIES (SMAW NC I)

| Unit of Competency | Module Title | Learning Outcomes | Nominal Duration |
|----------------------------|---|---|------------------|
| • Weld carbon steel plates | • Performing fillet welding on carbon steel plate | • Weld carbon steel plates in flat position (1F). • Weld carbon steel plates in horizontal position (2F). • Weld carbon steel plates in vertical position (3F). • Weld carbon steel plates in over-head position (3F). | 92 hrs |
| | • Performing groove welding on carbon steel plate | • Weld carbon steel plates in flat position (1G). • Weld carbon steel plates in horizontal position (2G). • Weld carbon steel plates in vertical position (3G). | 92 hrs |

Shielded Metal Arc Welding NC II

Course Description

This course is designed to enhance the knowledge, skills and attitudes of SMAW Welder in accordance with industry standards. It covers competencies such as Setting-up Welding Equipment, Preparing Weld Materials, Fitting up Weld Materials, Welding Carbon steel Plates Using SMAW, Welding Carbon Steel Plates and Pipes using SMAW and Repairing Welds.

Nominal Duration

- Basic Competencies 18 hrs.
- Common Competencies 56 hrs.
- Core Competencies 194 hrs.

TOTAL 268 hrs.

A person who has achieved this qualification is competent to be:
SMAW Welder

TRAINEE ENTRY REQUIREMENTS:

- Completed training in SMAW NC I or a holder of SMAW NC I certificate
- Physically and mentally fit;
- Can communicate in English, both oral and written; and
- Can perform basic mathematical operation.

BASIC COMPETENCIES

| Unit of Competency | Module Title | Learning Outcomes | Nominal Duration |
|---|---|--|------------------|
| • Participate in workplace communication | • Participating in workplace communication | • Obtain and convey workplace information. • Complete relevant work related documents. • Participate in workplace meeting and discussion. | 4 hrs |
| • Work in a team environment | • Working in a team environment | • Describe and identify team role and responsibility in a team. • Describe work as a team. | 4 hrs |
| • Practice career professionalism | • Practicing career professionalism | • Integrate personal objectives with organizational goals. • Set and meet work priorities. • Maintain professional growth and development. | 6 hrs |
| • Practice occupational health and safety | • Practicing occupational health and safety | • Identify hazards and risks. • Evaluate hazards and risks. • Control hazards and risks. • Maintain occupational health and safety awareness. | 4 hrs |

Course Structure

COMMON COMPETENCIES

| Unit of Competency | Module Title | Learning Outcomes | Nominal Duration |
|----------------------------------|-------------------------------------|---|------------------|
| • Apply safety practices | • Applying safety practices | • Identify hazardous area. • Use personal protective clothing and devices. • Perform safe handling of tools, equipment and materials. • Perform first aid. • Use fire extinguisher. | 8 hrs |
| • Interpret drawing and sketches | • Interpreting drawing and sketches | • Identify standard alphabet of lines. • Identify orthographic/ isometric views. • Interpret standard drawing symbols, dimensional tolerances and notations. | 8 hrs |
| • Perform industry calculation | • Performing industry calculation | • Perform four fundamental operations. • Perform conversion of units. • Perform calculations on algebraic expressions. • Compute percentage and ratio. | 8 hrs |
| • Contribute to quality system | • Contributing to quality system | • Inspect work done. • Apply quality standards to work. • Protect company property and customer interests. | 4 hrs |
| • Use handtools | • Using handtools | • Select hand tools. • Use hand tools. • Maintain hand tools. | 4 hrs |
| • Prepare weld materials | • Preparing weld materials | • Set up cutting equipment. • Cut and prepare edge of materials. • Clean surfaces and edges. • Prepare welding consumables. • Prepare welding safety and protective equipment. | 8 hrs |
| • Set-up welding equipment | • Setting-up welding equipment | • Set up welding machine. • Set up welding accessories. • Set up welding positioners, jigs and fixtures. | 4 hrs |
| • Fit-up materials | • Fitting up materials | • Perform tack welding. • Check gap and alignment. | 4 hrs |
| • Repair weld | • Repairing weld | • Mark/locate weld defects. • Prepare tools and equipment. • Remove defects. • Perform re-welding | 8 hrs |

CORE COMPETENCIES

| Unit of Competency | Module Title | Learning Outcomes | Nominal Duration |
|---|---|---|------------------|
| • Weld carbon steel plates and pipes using SMAW | • Performing groove welding on carbon steel plate | • Weld carbon steel plates in flat position (1G). • Weld carbon steel plates in horizontal position (2G). • Weld carbon steel plates in vertical position (3G). • Weld carbon steel plates in overhead position (4G) | 114 hrs |
| | • Performing groove welding on carbon steel pipe | • Weld carbon steel pipe in flat position (2G). • Weld carbon steel pipe in horizontal position (5G). • Weld carbon steel pipe in vertical position (6G) | 80 hrs |



TESDA Women's Center

VISION

"TESDA Women's Center is the lead TVET Institution of excellence in empowering Filipino women."

MISSION

"As the lead TVET Institution of excellence in women empowerment, TESDA Women's Center advocates and provides programs and services geared towards quality-assured, inclusive and gender-fair TVET."

SHIELDED METAL ARC WELDING (SMAW) NC I & II



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