



WORKFORCE & COMMUNITY DEVELOPMENT NASHVILLE STATE COMMUNITY COLLEGE

Introduction to Welding Processes:

**Recommended course length 48 clock hours –12 Hours
theory 36 hours lab**

Each Lesson Approximately 16 Hours



1. Lesson 1 – Units 1, 2 Welding Safety Fundamentals of Welding – GMAW Welding
 - a. Fire and Explosion Hazards
 - b. Burns
 - c. Fumes, Gases, and Confined Spaces
 - d. Shock Hazards
 - e. Eye protection
 - f. Protective Clothing
 - g. Proper handling of fuel cylinders
 - h. Common Welding Processes
 - i. Production welding processes
 - j. Types of welding joints and welds
 - k. GMAW (Mig) Welding equipment
 - l. Fusion and Penetration
 - m. Quiz 1 Safety (must have a score of 100% to continue)
 - n. Quiz 2 Fundamentals of Welding /MIG
 - o. Lab Mig Welding –Flat, Horizontal, Vertical, Overhead

2. Lesson 2 – Unit 4 Arc Welding Equipment -- SMAW Welding
 - a. SMAW Welding Equipment
 - b. AC and DC Welding Currents
 - c. Welding Machine Ratings
 - d. Types of Welding Machines
 - e. Transformer, Generator, Rectifier, and, Inverter Machines
 - f. Welding cables
 - g. Electrodes for SMAW

Please call Workforce Development at 353-3456 for further information. Thank you.



WORKFORCE & COMMUNITY DEVELOPMENT NASHVILLE STATE COMMUNITY COLLEGE

- h. Welding positions
 - i. Quiz 3 Arc Welding Equipment
 - j. Quiz 4 SMAW Welding
 - k. Lab SMAW welding flat, horizontal, Vertical, and overhead
-
- 3. Lesson 3 – Units 5 and 6 Welding Techniques and Avoiding Weld Faults -- GTAW Welding
 - a. Proper welding procedures
 - b. Parts of a weld
 - c. Common weld Problems
 - d. Weld Shape and Dimensional Problems
 - e. Internal Weld Defects
 - f. Inadequate Penetration
 - g. Porosity
 - h. Effects of heat
 - i. Identifying metals
 - j. Quiz 5 – Welding techniques and weld quality control
 - k. Quiz 6- GTAW (TIG)
 - l. Final Comprehensive Exam
 - m. TIG Lab – All positions and aluminum welding

Please call Workforce Development at 353-3456 for further information. Thank you.