

WELDING/2 (180 Hours)

Course No.: 77-95-60

COMPETENCY CHECKLIST

Student Name _____

Teacher Name _____ School Site _____

Start Date _____ Completion Date _____ Certificate Date _____

Teacher Signature _____ Student Signature _____

(Signatures verify completion of course competencies)

A. INTRODUCTION AND SAFETY (5 hrs)

- _____ 1. Scope and purpose of course
- _____ 2. Classroom policies & techniques
- _____ 3. Occupations available for welders in industry
- _____ 4. Opportunities for women in field of welding
- _____ 5. Cal-OSHA and its laws governing welders
- _____ 6. Impact of EPA legislation on industry sector
- _____ 7. Proper removal of hazardous materials
- _____ 8. MSDS as it applies to the welding industry
- _____ 9. Class/workplace emergency procedures
- _____ 10. Responsibilities to insure a safe workplace
- _____ 11. Pass the safety test with 100% accuracy

B. RESOURCE MANAGEMENT REVIEW (5 hrs)

- _____ 1. Resources, management, sustainability, CPM
- _____ 2. Importance of proper resource management
- _____ 3. CPM impact on project management
- _____ 4. Examples of effective resource management
- _____ 5. Benefits of effective resource management
- _____ 6. Economic benefits/liabilities on environment

C. TRADE MATHEMATICS II (15 hrs)

- _____ 1. Application of math in welding industry
- _____ 2. English system and metric problem solving
- _____ 3. English & metric measuring w/tools of trade
- _____ 4. Metric in ascending/descending powers of 10
- _____ 5. Convert English numbering system to metric
- _____ 6. Convert metric system to English numbering
- _____ 7. Calculate square roots of English numbers
- _____ 8. Solving techniques for geometric problems
- _____ 9. Solving techniques for algebraic problems
- _____ 10. Solving techniques using percentages
- _____ 11. Reading & interpreting graphs
- _____ 12. Techniques for using a calculator

D. WELDING METALLURGY REVIEW (10 hrs)

- _____ 1. Review definitions related to metallurgy
- _____ 2. Features & functions of metals & alloys
- _____ 3. Methods & processes of welding & weld defects

E. EQUIPMENT AND PROCESSES (30 hrs)

- _____ 1. Review safety issue related to welding
- _____ 2. Proper use of safety apparel for welders
- _____ 3. Safe handling of tools/equipment
- _____ 4. Review AC/DC/electrodes
- _____ 5. Review components for types & uses in welding
- _____ 6. Review list for applications in welding
- _____ 7. Demonstrate listed welding competencies
- _____ 8. Inspection and maintenance procedures
- _____ 9. Troubleshoot & repair various minor problems
- _____ 10. Identify listed equipment & its use in welding
- _____ 11. Demo use of listed welding equipment

F. FILLET WELDS (60 hrs)

- _____ 1. Discuss fillet welding and techniques
- _____ 2. Demonstrate using fillet welds & gauges

G. PLASMA ARC CUTTING (20 hrs)

- _____ 1. Discuss plasma arc cutting and equipment
- _____ 2. Safety for plasma arc cutting/use of AC & DC

H. BLUEPRINT READING AND LAYOUT (20 hrs)

- _____ 1. Lines, views & features used in blueprints
- _____ 2. Industry tolerance/ use of fractions & decimals
- _____ 3. Building & billing from blueprints & sketches

I. EMPLOYABILITY SKILLS REVIEW (5 hrs)

- _____ 1. Employer requirements for hiring
- _____ 2. Update potential employers list
- _____ 3. Electronic social networking in job search
- _____ 4. Update resumes and cover letters

- _____ 5. Importance of legible, complete application
- _____ 6. Common mistakes made on job applications
- _____ 7. Complete sample job application correctly
- _____ 8. Importance of enthusiasm on job
- _____ 9. Importance of appropriate appearance on job
- _____ 10. Importance of continual upgrading of skills
- _____ 11. Customer service to build relationships
- _____ 12. Appropriate interviewing techniques
- _____ 13. Materials/resources for successful interview
- _____ 14. Update sample follow-up letters
- _____ 15. Appropriate follow-up procedures

J. ENTREPRENEURIAL SKILLS (10 hrs)

- _____ 1. Define entrepreneurship
- _____ 2. Character traits of successful entrepreneurs
- _____ 3. Contributions of entrepreneurs to welding
- _____ 4. Purpose and components of a business plan
- _____ 5. Personal goals prior to starting a business
- _____ 6. Sources of monetary investment for business
- _____ 7. Licensing requirements in a welder business
- _____ 8. Scenario: student as welding business owner
- _____ 9. LEED vs. standard business practices