Klamath Welding Assessment 2011

This assessment contains 85 items, but only 85 are used at one time.

Welding

Number of Correlations	Standard Type	Standard
0	Program	1) Welding
0	Duty	1) Ac MNZ01.01 Use mathematics in the manufacturing process.
0	Standard	1) MNZ01.01.01.01 Add, subtract and divide numbers. Beginning High School
0	Standard	2) MNZ01.01.01.02 Use percentages in order to make adjustments. Advanced High School
0	Standard	3) MNZ01.01.01.03 Make calculations to calibrate equipment. Advanced High School
0	Standard	4) MNZ01.01.01.04 Calculate scrap or waste materials. Advanced High School
0	Standard	5) MNZ01.01.03.01 Identify material cost to produce new part. Advanced High School
0	Standard	6) MNZ01.01.05.01 Understand geometry in order to interpret blueprints. Advanced High School
0	Standard	7) MNZ01.01.06.01 Measure product against specifications for quality assurance. (Tolerances) Beginning High School
0	Duty	2) Bc MNZ01.02 Understand the application of the principles of science used in manufacturing.
0	Standard	1) MNZ01.02.01.03 Describe appropriate disposal of chemicals Beginning High School
0	Standard	2) MNZ01.02.01.04 Identify potential chemical hazards Post-Secondary
0	Standard	3) MNZ01.02.02.05 Recognize how the principles of simple machines are being used in manufacturing equipment. Advanced High School
0	Standard	4) MNZ01.02.02.06 Apply principles of physics to new equipment Post-Secondary
0	Standard	5) MNZ01.02.02.07 Understand the mechanical principles of machinery Advanced High School
0	Duty	3) Cc MNZ05.01 Summarize and explain how manufacturing businesses operate to demonstrate an understanding of key functions within organizations in the industry.

0	Standard	1) MNZ05.01.05.02 Identify the mission, major internal functions and structure of manufacturing businesses. Advanced High School
0	Standard	2) MNZ05.01.05.03 Identify the customers, suppliers, and stakeholders of manufacturing businesses, their roles, and how they relate. Beginning High School
0	Standard	3) MNZ05.01.05.04 Explain the major competitive challenges faced by the manufacturing businesses. Advanced High School
0	Standard	4) MNZ05.01.05.06 Analyze current trends in manufacturing systems. Post-Secondary
0	Standard	5) MNZ05.01.05.07 Describe how manufacturing businesses measure or gauge business performance. Beginning High School
0	Duty	4) Dc MNZ05.02 Analyze and summarize how manufacturing businesses improve performance to demonstrate an understanding of various methods for enhancing production. Technical Content Skill
0	Standard	1) MNZ05.02.05.01 Identify needs and requirements of internal and external customers. Advanced High School
0	Standard	2) MNZ05.02.05.02 Describe customer satisfaction and fulfillment of customer requirements. Advanced High School
0	Standard	3) MNZ05.02.05.06 Explain how plans and budgets are revised to meet goals and objectives. Advanced High School
0	Duty	5) Ec MNZ06.01 Maintain safe and healthful working conditions and environment to ensure employee safety. Basic Career Related Learning Skill
0	Standard	1) MNZ06.01.05.01 Identify the types of risk of injury/illness at work. Beginning High School
0	Standard	2) MNZ06.01.05.02 Identify those who are susceptible to risk of injury/illness at work. Beginning High School
0	Standard	3) MNZ06.01.05.03 Describe ways to positively impact occupational safety and health. Beginning High School
0	Standard	4) MNZ06.02.05.01 Identify key rights of employees related to occupational safety and

		health. Beginning High School
0	Standard	5) MNZ06.02.05.02 Identify the responsibilities of employers related to occupational safety and health. Advanced High School
0	Standard	6) MNZ06.02.05.03 Explain the role of government agencies in providing a safe workplace. Advanced High School
0	Duty	6) Fc MNZ06.03 Assess types and sources of workplace hazards in order to maintain safe working conditions in a manufacturing business environment.
0	Standard	1) MNZ06.03.05.01 Identify and describe common hazards in the workplace. Beginning High School
0	Standard	2) MNZ06.03.05.03 Identify sources of combustible/flammable materials, fire and emergencies to establish a fire safe environment. Beginning High School
0	Duty	7) Gc MNZ06.04 Control workplace hazards in order to maintain safe working conditions in a manufacturing business environment.
0	Standard	1) MNZ06.04.05.01 Identify procedures necessary for maintaining a safe work area. Beginning High School
0	Standard	2) MNZ06.04.05.02 Identify methods to correct common hazards. Beginning High School
0	Standard	3) MNZ06.04.05.03 Identify methods for disposing of hazardous materials. Beginning High School
0	Standard	4) MNZ06.04.05.04 Demonstrate principals of safe physical movement to avoid slips, trips, and spills. Beginning High School
0	Standard	5) MNZ06.04.05.05 Inspect and use protective equipment (PPE). Beginning High School
0	Duty	8) Hc MNZ08.01 Summarize safety, health, and environmental management systems to build an understanding of compliance with governmental policies and procedures for manufacturing businesses.
0	Standard	1) MNZ08.01.05.08 Follow organizational policies and procedures. Advanced High School
0	Standard	2) MNZ08.01.05.09 Educate and orient other workers. Advanced High School
0	Standard	3) MNZ08.01.05.10 Maintain a safe work area. Beginning High School

0	Standard	4) MNZ08.01.05.11 Identify, describe, and report workplace hazards. Beginning High School
0	Duty	9) Ic MNZ10.01 Describe and employ technical skills and knowledge required for careers in manufacturing in order to perform basic workplace activities common to manufacturing. Technical Content Skill
0	Standard	1) MNZ10.01.05.01 Demonstrate the planning and layout processes (e.g., designing, print reading, measuring) used in manufacturing. Beginning High School
0	Standard	2) MNZ10.01.05.02 Read prints and use the information to play, lay out, and produce parts or products. Beginning High School
0	Standard	3) MNZ10.01.05.03 Summarize how materials can be processed using tools and machines. Beginning High School
0	Standard	4) MNZ10.01.05.04 Use tools and the processes of cutting, shaping, combining, forming, etc., of materials to manufacture a part or product. Beginning High School
0	Standard	5) MNZ10.01.05.05 Describe various types of assembling processes (e.g., mechanical fastening, mechanical force, joining, fusion bonding, adhesive bonding) used in manufacturing. Beginning High School
0	Standard	6) MNZ10.01.05.06 Apply appropriate fastening or joining procedure to the design and production of a manufactured part or product. Beginning High School
0	Standard	7) MNZ10.01.05.07 Explain finishing processes (e.g., types of finishing materials, surface preparation, methods of application) used in manufacturing. Advanced High School
0	Standard	8) MNZ10.01.05.08 Select a finishing process for a product appropriate to the job it must perform environment in which it functions, and its aesthetic appeal. Advanced High School
0	Standard	9) MNZ10.01.05.09 Explain the processes of inspection and quality control used in manufacturing. Beginning High School
0	Standard	10) MNZ10.01.05.10 Perform continuous on line inspections to ensure that parts or products meet design specifications. Beginning

		High School
0	Duty	10) F The student will identify welding tools and equipment.
0	Standard	1) 1 Identify basic hand tools (chipping hammers, brushes, files, strikers)
0	Standard	2) 2 Identify basic power tools (grinders, drills)
0	Duty	11) G The student will demonstrate knowledge of welding processes.
0	Standard	1) 1 Identify and describe different welding processes (SMAW, GMAW, GTAW, OXYFUEL welding, FCAW)
0	Standard	2) 2 Identify welding positions according to AWS standards (flat, vertical, horizontal, overhead, IG-4G, and 1G/F)
0	Standard	3) 3 Identify joint types (butt, lap, T, corner, edge)
0	Standard	4) 4 Identify cutting processes (plasma, oxyfuel)
0	Duty	12) H The student will be able to interpret drawings, plans and control documents.
0	Standard	1) 1 Interpret welding prints to determine tolerance dimensions in decimal, fractions, and degrees
0	Standard	2) 2 Identify the basic components of a blueprint.
0	Standard	3) 3 Identify and interpret basic welding symbols Ã˜Â EXAMPLES: Fillet weld and groove weld
0	Duty	13) I The student will be able to identify generally used welding materials.
0	Standard	1) 1 Identify key welding materials include ferrous and non-ferrous materials (steel, aluminum, stainless steel, high-carbon steel, low-carbon steel, cast iron)
0	Standard	2) 2 Identify structural steel shapes (channel, angle, tubing, I-beam, H-beam, sheeting, plate)
0	Standard	3) 3 Select the material for the appropriate application
0	Duty	14) J The student will demonstrate ability to plan and complete core welding processes.
0	Standard	1) 1 Select appropriate welding process for the specified thickness/gauge of material

		being used
0	Standard	2) 2 Identify appropriate electrodes and filler materials for the specific process
0	Standard	3) 3 Perform safety inspections of equipment and accessories used in the welding process
0	Standard	4) 4 Define AWS numbering system
0	Duty	15) K The student will demonstrate proper use of the equipment used to conduct shielded metal arc welding processes in the flat and horizontal positions, at minimum.
0	Standard	1) 1 Demonstrate proper set-up procedures for shielded metal arc welding operations on plain carbon steel
0	Standard	2) 2 Start and restart an arc, maintain a stable arc while running a bead, backfill the crater at the restart and at the end of the bead, while running a bead on mild steel plate
0	Standard	3) 3 Complete welds in the 1G/F (flat) and 2G/F (horizontal) positions using E6010 and E7018 electrodes on mild steel, at minimum
0	Duty	16) L The student will demonstrate proper use of the equipment used to perform manual oxyfuel gas cutting processes.
0	Standard	1) 1 Conduct set up for manual oxyfuel gas cutting equipment for procedure on plain carbon steel
0	Standard	2) 2 Perform straight cutting operations on plain carbon steel.
0	Standard	3) 3 Perform shape-cutting operations on plain carbon steel.
0	Standard	4) 4 Perform bevel-cutting operations on plain carbon steel.
0	Duty	17) M The student will demonstrate proper use of the equipment used to perform gas metal arc welding processes.
0	Standard	1) 1 Conduct set up for gas metal arc welding equipment for procedures on plain carbon steel
0	Standard	2) 2 Use Short Circuit Transfer to make fillet welds in flat and horizontal position on plain carbon steel
0	Standard	3) 3 Use Short Circuit Transfer to make grove welds in flat and horizontal position on plain carbon steel

0	Duty	18) N The student will demonstrate knowledge of testing and inspection methods.
0	Standard	1) 1 Identify common welding flaws and defects (undercutting, porosity, cracks, etc.)
0	Duty	19) O The student will demonstrate proper use of the equipment used to perform gas tungsten arc welding processes.
0	Standard	1) 1 Conduct set up for gas tungsten arc welding equipment for procedures on plain carbon steel
0	Standard	2) 2 Make square grove and fillet joints in flat position
0	Duty	20) P The student will demonstrate proper use of the equipment used to conduct plasma arc cutting processes.
0	Standard	1) 1 Conduct set up for plasma arc cutting equipment for procedures on plain carbon steel
0	Standard	2) 2 Perform straight cutting operations on plain carbon steel
0	Standard	3) 3 Perform shape-cutting operations on plain carbon steel

0	**Correlations**	
0	Program	1) Welding
0	Duty	A) A) The student will demonstrate knowledge of and apply personal protective safety equipment appropriate to the process.
0	Standard	1) Demonstrate knowledge of and apply appropriate clothing protection appropriate to the task
0	Standard	2) Locate and properly use protective equipment
0	Standard	3) Identify hazardous and non-hazardous materials
0	Standard	4) Demonstrate knowledge of and apply appropriate handling, lifting and transport of materials (hazardous and non-hazardous)
0	Duty	B) B) The student will demonstrate proper industrial safety practices and procedures in a manufacturing facility.
0	Standard	1) Maintain and use appropriate protective guards and equipment on machinery
0	Standard	2) Select appropriate tool for the task
0	Standard	3) Conduct pre-use inspection and set-up of

		tools
0	Standard	4) Use the tool properly (hand placement, min. and max. material sizes, feed rates)
0	Standard	5) Be able to distinguish between a properly and improperly functioning tools
0	Standard	6) Demonstrate maintenance of the tool (cleaning, lubrication, sharpening)
0	Duty	C) C) The student will demonstrate proper use of emergency equipment and procedures.
0	Standard	1) Demonstrate knowledge of proper use of fire extinguisher
0	Standard	2) Demonstrate knowledge of purpose and meaning of fire triangle (covers all areas)
0	Standard	3) Demonstrate knowledge of and apply evacuation procedures
0	Standard	4) Demonstrate knowledge of basic first aid to cuts and burns, eye wash, and blood-born pathogens
0	Duty	D) D) The student will use basic math and measuring skills.
0	Standard	1) Demonstrate proper use of measuring devices
0	Standard	2) Identify and apply appropriate unit of measurement
0	Standard	3) Able to measure to a specified tolerance
0	Standard	4) Convert fractions/decimals/metric
0	Standard	5) Apply appropriate calculation to the task (add, subtract, multiply, divide)
0	Standard	6) Perform basic layout techniques
0	Duty	E) E) The student will demonstrate knowledge and skills specific to the pathway.
0	Standard	1) Student demonstrates a knowledge of the different career paths and opportunities within a pathway
0	Standard	2) The student will be able to interpret drawings, plans and control documents specific to the pathway
0	Standard	3) The student will be able to identify generally used materials specific to the pathway
0	Standard	4) The student will demonstrate proper use of the tool in completing a specific process
0	Duty	F) F) student will identify welding tools and

		equipment.
0	Standard	1) Identify basic hand tools (chipping hammers, brushes, files, strikers)
0	Standard	2) Identify basic power tools (grinders, drills)
0	Duty	G) G) The student will demonstrate knowledge of welding processes.
0	Standard	1) Identify and describe different welding processes (SMAW, GMAW, GTAW, OXYFUEL welding, FCAW)
0	Standard	2) Identify welding positions according to AWS standards (flat, vertical, horizontal, overhead, IG-4G, and 1G/F)
0	Standard	3) Identify joint types (butt, lap, T, corner, edge)
0	Standard	4) Identify cutting processes (plasma, oxyfuel)
0	Duty	H) H) The student will be able to interpret drawings, plans and control documents.
0	Standard	1) Interpret welding prints to determine tolerance dimensions in decimal, fractions, and degrees
0	Standard	2) Identify the basic components of a blueprint.
0	Standard	3) Identify and interpret basic welding symbols
0	Duty	I) I) The student will be able to identify generally used welding materials.
0	Standard	1) Identify key welding materials include ferrous and non-ferrous materials (steel, aluminum, stainless steel, high-carbon steel, low-carbon steel, cast iron)
0	Standard	2) Identify structural steel shapes (channel, angle, tubing, I-beam, H-beam, sheeting, plate)
0	Standard	3) Select the material for the appropriate application
0	Duty	J) J) The student will demonstrate ability to plan and complete core welding processes.
0	Standard	1) Select appropriate welding process for the specified thickness/gauge of material being used
0	Standard	2) Identify appropriate electrodes and filler materials for the specific process
0	Standard	3) Perform safety inspections of equipment and accessories used in the welding process

0	Standard	4) Define AWS numbering system
0	Duty	K) K) The student will demonstrate proper use of the equipment used to conduct shielded metal arc welding processes in the flat and horizontal positions, at minimum.
0	Standard	1) Demonstrate proper set-up procedures for shielded metal arc welding operations on plain carbon steel
0	Standard	2) Start and restart an arc, maintain a stable arc while running a bead, backfill the crater at the restart and at the end of the bead, while running a bead on mild steel plate
0	Standard	3) Complete welds in the 1G/F (flat) and 2G/F (horizontal) positions using E6010 and E7018 electrodes on mild steel, at minimum
0	Duty	L) L) The student will demonstrate proper use of the equipment used to perform manual oxyfuel gas cutting processes.
0	Standard	1) Conduct set up for manual oxyfuel gas cutting equipment for procedure on plain carbon steel
0	Standard	2) Perform straight cutting operations on plain carbon steel (within 1/8â€ tolerance)
0	Standard	3) Perform shape-cutting operations on plain carbon steel (within 1/8â€ tolerance)
0	Standard	4) Perform bevel-cutting operations on plain carbon steel (within 1/8â€ tolerance)
0	Duty	M) M) The student will demonstrate proper use of the equipment used to perform gas metal arc welding processes.
0	Standard	1) Conduct set up for gas metal arc welding equipment for procedures on plain carbon steel
0	Standard	2) Use Short Circuit Transfer to make fillet welds in flat and horizontal position on plain carbon steel
0	Standard	3) Use Short Circuit Transfer to make grove welds in flat and horizontal position on plain carbon steel
0	Duty	N) N) The student will demonstrate knowledge of testing and inspection methods.
0	Standard	1) Identify common welding flaws and defects (undercutting, porosity, cracks, etc.)
0	Duty	O) O) The student will demonstrate proper use of the equipment used to perform gas

		tungsten arc welding processes.
0	Standard	1) Conduct set up for gas tungsten arc welding equipment for procedures on plain carbon steel
0	Standard	2) Make square grove and fillet joints in flat position
0	Duty	P) P) The student will demonstrate proper use of the equipment used to conduct plasma arc cutting processes.
0	Standard	1) Conduct set up for plasma arc cutting equipment for procedures on plain carbon steel
0	Standard	2) Perform straight cutting operations on plain carbon steel
0	Standard	3) Perform shape-cutting operations on plain carbon steel

0	**Correlations**	
0	Program	1) Welding
0	Duty	1) UNIT A: WELDING SAFETY
3	Standard	1) 1. Identify some common hazards in welding.
7	Standard	2) 2. Explain and identify proper personal protection used in welding.
0	Standard	3) 3. Demonstrate how to avoid welding fumes.
3	Standard	4) 4. Explain some of the causes of accidents.
0	Standard	5) 5. Identify and explain uses for material safety data sheets.
0	Standard	6) 6. Demonstrate safety techniques for storing and handling cylinders.
1	Standard	7) 7. Explain how to avoid electric shock when welding.
2	Standard	8) 8. Demonstrate proper material handling methods.
0	Duty	2) UNIT B: OXYFUEL CUTTING
8	Standard	1) 1. Identify and explain the use of oxyfuel cutting equipment.
7	Standard	2) 2. Set up oxyfuel equipment.
6	Standard	3) 3. Light and adjust an oxyfuel torch.
0	Standard	4) 4. Shut down oxyfuel cutting equipment.
0	Standard	5) 5. Disassemble oxyfuel equipment.
0	Standard	6) 6. Change empty cylinders.

3	Standard	7) 7. Perform oxyfuel cutting:
0	Standard	8) 8. Operate a motorized, portable oxyfuel gas cutting machine.
0	Duty	3) UNIT C: BASE METAL PREPARATION
1	Standard	1) 1. Clean base metal for welding or cutting.
5	Standard	2) 2. Identify and explain joint design.
0	Duty	4) UNIT D: SMAW EQUIPMENT AND SETUP
1	Standard	1) 1. Identify and explain shielded metal arc welding (SMAW) safety.
3	Standard	2) 2. Identify and explain welding electrical current.
1	Standard	4) 4. Explain setting up arc welding equipment.
4	Standard	5) 5. Set up a machine for welding.
2	Standard	6) 6. Identify and explain tools for weld cleaning.
0	Duty	5) UNIT E: SMAW ELECTRODES AND SELECTION
0	Standard	1) 1. Identify factors that affect electrode selection.
0	Standard	2) 2. Explain the American Welding Society (AWS) filler metal classification system.
1	Standard	3) 3. Identify different types of filler metals.
0	Standard	4) 4. Explain the storage and control of filler metals.
0	Duty	6) UNIT F: SMAW BEADS AND FILLET WELDS
0	Standard	1) 1. Set up shielded metal arc welding (SMAW) equipment.
2	Standard	2) 2. Describe methods of striking an arc.
5	Standard	3) 3. Properly strike and extinguish an arc.
0	Standard	4) 4. Describe causes of arc blow and wander.
3	Standard	5) 5. Make stringer, weave, and overlapping beads.
1	Standard	6) 6. Make fillet welds in the:
0	Duty	7) UNIT G: SMAW GROOVE WELDS WITH BACKING
1	Standard	1) 1. Identify and explain groove welds.
0	Standard	2) 2. Identify and explain groove welds with backing.
0	Standard	3) 3. Set up shielded metal arc welding (SMAW) equipment for making V-groove welds.
1	Standard	4) 4. Perform SMAW for V-groove welds with backing in the:

0	Duty	8) UNIT H: JOINT FIT-UP AND ALIGNMENT
0	Standard	1) 1. Identify and explain job code specifications.
0	Standard	2) 2. Use fit-up gauges and measuring devices to check joint fit-up.
1	Standard	3) 3. Identify and explain distortion and how it is controlled.
1	Standard	4) 4. Fit up joint using plate tools.
0	Standard	5) 5. Check for joint misalignment and poor fit-up before and after welding.
0	Duty	9) UNIT I: WELDING SYMBOLS
0	Standard	1) 1. Identify and explain the various parts of a welding symbol.
0	Standard	2) 2. Identify and explain fillet and groove weld symbols.
0	Standard	3) 3. Read welding symbols on drawings, specifications, and welding procedure specifications.
1	Standard	4) 4. Interpret welding symbols from a print.
0	Duty	10) UNIT J: READING WELDING DETAIL DRAWINGS
0	Standard	1) 1. Identify and explain a welding detail drawing.
0	Standard	2) 2. Identify and explain lines, material fills, and sections.
0	Standard	3) 3. Identify and explain object views.
1	Standard	4) 4. Identify and explain dimensioning.
0	Standard	5) 5. Identify and explain notes and bill of materials.
0	Standard	6) 6. Interpret basic elements of a welding detail drawing.
0	Duty	11) UNIT L: GMAW AND FCAW EQUIPMENT AND FILLER METALS
2	Standard	1) 1. Explain gas metal arc welding (GMAW) and flux cored arc welding (FCAW) safety.
1	Standard	2) 2. Explain the characteristics of welding current and power sources.
3	Standard	3) 3. Identify and explain the use of GMAW and FCAW equipment:
3	Standard	4) 4. Identify and explain the use of GMAW and FCAW shielding gases and filler metals.
0	Standard	5) 5. Set up GMAW and FCAW equipment and identify tools for weld cleaning

0	Duty	12) UNIT M: GMAW AND FCAW PLATE
0	Standard	1) 1. Perform GMAW multiple-pass fillet welds on plate, using solid or composite wire and shielding gas in multiple positions
0	Standard	2) 2. Perform FCAW multiple-pass fillet welds on plate in multiple positions using flux cored wire and, if required, shielding gas.
0	Duty	13) UNIT B: SMAW OPEN V-GROOVE WELDS
1	Standard	1) 1. Prepare shielded metal arc welding (SMAW) equipment for open-root V-groove welds.
0	Standard	2) 2. Perform open-root V-groove welds in the:
85	**Correlations**	
85	**Total Correlations**	