APPLIED SKILLS AND KNOWLEDGE
PERFORM TECHNICAL READING
Identify details and specifications
Follow detailed directions
Use book mechanics (tables, index, etc.)
Locate information and problem solve by use of forms
PERFORM TECHNICAL WRITING
Write Technical words accurately
Spell task related words correctly
Enter appropriate information and accurately transfer information to forms
APPLY MATHEMATIC CONCEPTS
Distinguish between 2 measurement systems (U.S. Customary and SI metric)
+, -, /, * , using whole numbers, fractions, mixed numbers, and decimals
Round off decimals in one or more places
Use measuring devices to determine size, length, angle, or distance
Convert mixed number fractions to decimals and vice versa
Convert SI (Metric) to U.S. (Customary) units, and vice versa
Identify geometric shapes
Understand the functions of angles and parts of a circle
Prepare parts using principals of geometry
Read and use a U.S. (Customary)/SI (Metric) tape, rule, and square
COMMUNICATE TECHNICAL INFORMATION
Follow detailed verbal instructions
Pronounce key technical words precisely
Verbalize factual details accurately
Explain job related messages and problems clearly
RELATED SKILLS AND KNOWLEDGE
BECOME ORIENTED WITH OCCUPATION
Become oriented with career paths associated with welding
Understand the functions and safe use of common hand tools
Become competent in the operation of selected power tools and equipment
PERFORM METAL CUTTING OPERATIONS USING THE
BETENBENDER HYDRAULIC SHEAR (3/8'' X 4' mild steel capacity)
Perform safety check list
Adjust rake for thickness of metal
Set desired part length using gauge stop
Operate shear using safe practices
PERFORM METAL CUTTING OPERATIONS USING THE
GEKA HYDRAULIC SHEAR (60 ton)
Perform safety check list

Set materials hold down
Operate hydraulic shear using safe practices
Set up and adjust tool and die for metal punching operations
Operate metal punch using safe practices
PERFORM DRILLING OPERATIONS USING A DRILL PRESS
Perform safety check list
Set up for drilling operations
Operate drill press using safe practices
PERFORM METAL CUTTING OPERATIONS USING A VERTICAL BAND
SAW (20'' throat)
Perform safety check list
Set up for cutting operations
Operate vertical band saw using safe practices
Replace band saw blades as needed
PERFORM METAL CUTTING OPERATIONS USING A HORIZONTAL BAND SAW
Perform safety check list
Set up for cutting operations
Adjust rate of automatic feed
Operate horizontal band saw using safe practices
Replace band saw blades as needed
PERFORM METAL CUTTING OPERATIONS USING A (14'')
PORTABLE CUT-OFF SAW
Perform safety check list
Set up for cutting operations
Operate portable cut-off saw using safe practices
Replace cut-off saw blades as needed
PERFORM METAL FORMING OPERATIONS USING THE
ADIRA HYDRAULIC PRESS BRAKE Model QH-6020
Perform safety check list of equipment and accessories
Operate hydraulic press brake using safe practices
Set up for a variety of bends
Make bends on flat bar and plate
PERFORM METAL GRINDING OPERATIONS USING A PEDESTAL GRINDER
Perform safety checklist of equipment and accessories
Operate pedestal grinder using safe practices
Grind ferrous metals using pedestal grinder
Perform grinder maintenance
PERFORM METAL FINISHING OPERATIONS USING A PORTABLE HAND GRINDER
Perform safety checklist

Operate portable hand grinder using safe practices
Replace grinding wheels as necessary
Grind metal using portable hand grinder
PERFORM METAL FINISHING OPERATIONS USING THE 6''
BELT FINISHING MACHINE
Perform safety checklist of equipment and accessories
Operate belt finishing machine using safe practices
Replace sanding belts as necessary
Perform metal finishing operations
DEVELOP AWARENESS OF OCCUPATIONAL SAFETY
Follow safe practices
Perform housekeeping duties
Demonstrate knowledge of ANSI Z49.1
KNOW ELECTRICAL FUNDAMENTALS
Know AC-DC fundamentals
Demonstrate polarity set up
Perform minor troubleshooting
Practice electrical safety
INTERPRET DRAWING AND WELD SYMBOL INFORMATION
Interpret basic elements of a drawing or a sketch
Recognize and interpret welding symbol information
Fabricate parts from a drawing or a sketch
ARC WELDING PRINCIPALS AND PRACTICES
PERFORM SHIELDED METAL ARC WELDING (SMAW)
Perform safety inspections of equipment and accessories
Make minor external repairs to equipment and accessories
Set up for shielded metal arc welding operations on plain carbon steel
Operate shielded metal arc welding equipments
Make fillet welds, all positions, on plain carbon steel, using E6010 and E7018
Make groove welds, all positions, on plain carbon steel, using E7018
Perform 2G-3G limited thickness qualification test on plain carbon steel
PERFORM GAS METAL ARC WELDING (GMAW, GMAW-S)
Perform safety inspections of equipment and accessories
Make minor external repairs to equipment and accessories
Set up for GMAW operations on plain carbon steel
Short circuit transfer - Operate gas metal arc welding equipment
Short circuit transfer - Make fillet welds, all positions, on plain carbon steel
Spray transfer - Make 1F-2F welds on plain carbon steel
Spray transfer - Make 1G welds on plain carbon steel

PERFORM FLUX CORED ARC WELDING (FCAW-S, FCAW-G)
Perform safety inspection of equipment and accessories
Make minor external repairs to equipment and accessories
Set up for flux cored welding operations on plain carbon steel
Operate flux cored arc welding equipment
Make fillet welds, all positions, on plain carbon steel
Make groove welds, al positions, on plain carbon steel
PERFORM GAS TUNGSTEN ARC WELDING (GTAW)
Perform safety inspection of equipment and accessories
Make minor external repairs to equipment and accessories
Set up for GTAW ops on plain carbon steel, aluminum, & stainless steel
Operate gas tungsten arc welding equipment
Make fillet welds, all positions, on plain carbon steel
Make groove welds, all positions, on plain carbon steel
Make 1F-2F welds on aluminum
Make 1G welds on aluminum
Make 1F-3F welds on stainless steel
Make 1G-2G welds on stainless steel
OXYFUEL CUTTING PRINCIPALS AND PRACTICES
PERFORM MANUAL OXYFUEL GAS CUTTING (OFC)
Perform safety inspection of equipment and accessories
Make minor external repairs to equipment and accessories
Set up for manual OFC operations on plain carbon steel
Operate manual oxyfuel cutting equipment
Perform straight cutting operations on plain carbon steel
Perform shape cutting operations on plain carbon steel
Perform bevel cutting operations on plain carbon steel
Remove weld metal from plain carbon steel using washing techniques
PERFORM MACHINE OXYFUEL GAS CUTTING (OFC)
Make minor external repairs to equipment and accessories
Perform safety inspection of equipment and accessories
Set up for machine oxyfuel gas cutting operations on plain carbon steel
Operate machine oxyfuel gas cutting (track burner) equipment
Perform straight cutting operations on plain carbon equipment
Perform bevel cutting operations on plain carbon steel
ARC CUTTING PRINCIPALS AND PRACTICES
PERFORM AIR CARBON ARC CUTTING AND GOUGING(CAC-A)
Perform safety inspection of equipment and accessories
Make minor external repairs to equipment and accessories
Set up manual gouging & CAC-A ops on plain carbon steel, aluminum, stainless steel
Operate manual air carbon arc cutting equipment
Perform metal removal operations on plain carbon steel

PERFORM HAND PLASMA ARC CUTTING	
Perform safety inspection of equipment and accessories	
Make minor external repairs to equipment and accessories	
Set up manual PAC operations on plain carbon steel, aluminum, stainless steel	
Operate manual plasma arc cutting equipment	
Perform shape cutting operations on plain carbon steel, aluminum, stainless steel	
PERFORM SETUP AND CUTTING OPERATIONS OF THE PLASMA CAM	
Make parts drawing on computer	
Use correct eye protection	
Transfer parts drawing from computer to Plasma CAM	
Correct broken lines	
Scale Drawing	
Set correct travel speed	
Use correct plasma torch tip for material thickness	
Set correct torch height	
Convert to cut path	
Select appropriate cut sequence	
Cut material	
WELDING INSPECTION AND TESTING PRINCIPALS	
USE VISUAL EXAMINATION PRINCIPALS AND PRACTICES	
Examine cut surfaces and edges of prepared base metal parts	
Examine tack, intermediate layers, and completed welds	
Complete Portfolio	
Complete Mock Job Interview	
PERSONAL QUALITIES	
Work Effort	
Safety habits	
Work Area Organization	
On Task Behavior	
Responsibility	
Initiative	
Team Work	
Respect	
Interpersonal Skills	