



Level One

MODULE 29101-03 – WELDING SAFETY

Task Number	Item	Date(s)	Recorded By
This is a knowledge-based module; there is no performance testing.			

MODULE 29102-02 – OXYFUEL CUTTING

Task Number	Item	Date(s)	Recorded By
29102-1	Set up oxyfuel equipment.		
29102-2	Light and adjust an oxyfuel torch.		
29102-3	Shut down oxyfuel cutting equipment.		
29102-4	Disassemble oxyfuel equipment.		
29102-5	Change empty cylinders.		
29102-6	Perform straight line and square shape cutting.		
29102-7	Perform piercing and slot cutting.		
29102-8	Perform bevel cutting.		
29102-9	Perform washing.		
29102-10	Perform gouging.		

MODULE 29103-03 – BASE METAL PREPARATION

Task Number	Item	Date(s)	Recorded By
29103-1	Bevel and prepare the welding coupons for a single open v-groove weld.		

MODULE 29104-03 – WELD QUALITY

Task Number	Item	Date(s)	Recorded By
	This is a knowledge-based module; there is no performance testing.		

MODULE 29105-03 – SMAW – EQUIPMENT AND SETUP

Task Number	Item	Date(s)	Recorded By
29105-1	Set up a machine for welding.		

MODULE 29106-03 – SMAW – ELECTRODES AND SELECTION

Task Number	Item	Date(s)	Recorded By
	This is a knowledge-based module; there is no performance testing.		

MODULE 29107-03 – SMAW – BEADS AND FILLET WELDS

Task Number	Item	Date(s)	Recorded By
29107-1	Set up AC welding equipment.		
29107-2	Strike an arc.		
29107-3	Make stringer, weave, and overlapping beads using E6010 and E7018 electrodes.		
29107-4	Make fillet welds in the 2F, 3F, and 4F positions using E6010 and E7018 electrodes.		

MODULE 29108-03 – SMAW – GROOVE WELDS WITH BACKING

Task Number	Item	Date(s)	Recorded By
29108-1	Set up the arc welding equipment for making groove welds.		
29108-2	Make flat welds on V-groove joints using E7018 electrodes.		
29108-3	Make horizontal welds on V-groove joints using E7018 electrodes.		
29108-4	Make vertical welds on V-groove joints using E7018 electrodes.		
29108-5	Make overhead welds on V-groove joints using E7018 electrodes.		

MODULE 29109-03 – JOINT FIT-UP AND ALIGNMENT

Task Number	Item	Date(s)	Recorded By
29109-1	Fit up joints using plate and pipe fit-up tools.		
29109-2	Check the joint for proper fit-up and alignment using gauges and measuring devices.		

MODULE 29110-03 – SMAW – OPEN V-GROOVE WELDS

Task Number	Item	Date(s)	Recorded By
29110-1	Prepare arc welding equipment for open V-groove welds.		
29110-2	Make flat welds on pads and V-groove joints in the 1G position.		
29110-3	Make horizontal welds on pads and V-groove joints in the 2G position.		
29110-4	Make vertical welds on pads and V-groove joints in the 3G position.		
29110-5	Make overhead welds on pads and V-groove joints in the 4G position.		

MODULE 29111-03 – SMAW – OPEN-ROOT PIPE WELDS

Task Number	Item	Date(s)	Recorded By
29111-1	Prepare arc welding equipment for open-root pipe welds.		
29111-2	Make pipe welds in the 1G position.		
29111-3	Make pipe welds in the 2G position.		
29111-4	Make pipe welds in the 5G position.		
29111-5	Make pipe welds in the 6G position.		

Level Two

MODULE 29201-03 – WELDING SYMBOLS

Task Number	Item	Date(s)	Recorded By
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This is a knowledge-based module; there is no performance testing.

MODULE 29202-03 – READING WELDING DETAIL DRAWINGS

Task Number	Item	Date(s)	Recorded By
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29202-1	Interpret and develop welding detail drawings.		
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MODULE 29203-03 – SMAW – STAINLESS STEEL GROOVE WELDS AND PIPE

Task Number	Item	Date(s)	Recorded By
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29203-1	Prepare arc welding equipment for stainless steel welds.		
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29203-2	Perform SMAW on stainless steel open-root V-groove joints in the 1G position.		
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29203-3	Perform SMAW on stainless steel open-root V-groove joints in the 2G position.		
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29203-4	Perform SMAW on stainless steel open-root V-groove joints in the 3G position.		
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29203-5	Perform SMAW on stainless steel open-root V-groove joints in the 4G position.		
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29203-6	Perform SMAW on stainless steel open-root V-groove pipe welds in the 1G-ROTATED position.		
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29203-7	Perform SMAW on stainless steel open-root V-groove pipe welds in the 2G position.		
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29203-8	Perform SMAW on stainless steel open-root V-groove pipe welds in the 5G position.		
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29203-9	Perform SMAW on stainless steel open-root V-groove pipe welds in the 6G position.		
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MODULE 29204-03 – AIR CARBON ARC CUTTING AND GOUGING

Task Number	Item	Date(s)	Recorded By
29204-1	Select and install CAC-A electrodes.		
29204-2	Prepare the work area and CAC-A equipment for safe operation.		
29204-3	Use CAC-A equipment for washing.		
29204-4	Use CAC-A equipment for gouging.		
29204-5	Perform storage and housekeeping activities for CAC-A equipment.		

MODULE 29205-03 – PLASMA ARC CUTTING (PAC)

Task Number	Item	Date(s)	Recorded By
29205-1	Set up plasma arc cutting equipment.		
29205-2	Set the amperage and gas pressures or flow rates for the type and thickness of metal to be cut.		
29205-3	Square-cut metal using plasma arc cutting equipment.		
29205-4	Bevel-cut metal using plasma arc equipment.		
29205-5	Pierce and cut slots in metal using plasma arc cutting equipment.		
29205-6	Dismantle and store the equipment.		

MODULE 29206-03 - GMAW AND FCAW - EQUIPMENT AND FILLER METALS

Task Number	Item	Date(s)	Recorded By
29206-1	Set up GMAW and FCAW equipment with appropriate shielding gases and filler metals.		

MODULE 29207-03 - GMAW AND FCAW - PLATE

Task Number	Item	Date(s)	Recorded By
29207-1	Make fillet welds on carbon steel plate in the 1F (flat) position, using GMAW with short-circuiting transfer.		
29207-2	Make fillet welds on carbon steel plate in the 2F (horizontal) position, using GMAW with short-circuiting transfer.		
29207-3	Make fillet welds on carbon steel plate in the 3F (vertical) position, using GMAW with short-circuiting transfer.		
29207-4	Make fillet welds on carbon steel plate in the 4F (overhead) position, using GMAW with short-circuiting transfer.		
29207-5	Make fillet welds on carbon steel plate in the 1F (flat) position, using FCAW and flux cored wire.		
29207-6	Make fillet welds on carbon steel plate in the 2F (horizontal) position, using FCAW and flux cored wire.		
29207-7	Make fillet welds on carbon steel plate in the 3F (vertical) position, using FCAW and flux cored wire.		
29207-8	Make fillet welds on carbon steel plate in the 4F (overhead) position, using FCAW and flux cored wire.		
29207-9	Make multiple-pass open-root V-groove welds on carbon steel plate in the 1G (flat) position, using FCAW and flux cored wire.		
29207-10	Make multiple-pass open-root V-groove welds on carbon steel plate in the 2G (horizontal) position, using FCAW and flux cored wire.		
29207-11	Make multiple-pass open-root V-groove welds on carbon steel plate in the 3G (vertical) position, using FCAW and flux cored wire.		
29207-12	Make multiple-pass open-root V-groove welds on carbon steel plate in the 4G (overhead) position, using FCAW and flux cored wire.		
29207-13	Make multiple-pass open-root V-groove welds on carbon steel plate in the 1G (flat) position, using GMAW with short-circuiting transfer.		
29207-14	Make multiple-pass open-root V-groove welds on carbon steel plate in the 2G (horizontal) position, using GMAW with short-circuiting transfer.		
29207-15	Make multiple-pass open-root V-groove welds on carbon steel plate in the 3G (vertical) position, using GMAW with short-circuiting transfer.		
29207-16	Make multiple-pass open-root V-groove welds on carbon steel plate in the 4G (overhead) position, using GMAW with short-circuiting transfer.		

MODULE 29207-03 - GMAW AND FCAW - PLATE (Continued)

Task Number	Item	Date(s)	Recorded By
29207-17	Make 1F and 2F fillet welds on carbon steel plate, using GMAW with spray transfer.		
29207-18	Make 1G open-root V-groove welds on carbon steel plate, using GMAW with spray transfer.		

MODULE 29208-03 - GAS TUNGSTEN ARC WELDING - EQUIPMENT AND FILLER METALS

Task Number	Item	Date(s)	Recorded By
Given a WPS:			
29208-1	Select shielding gas.		
29208-2	Select filler metal.		
29208-3	Connect the shielding gas and set the flow rate.		
29208-4	Select and prepare the electrode.		
29208-5	Break down and reassemble a GTAW torch		

MODULE 29209-03 - GAS TUNGSTEN ARC WELDING - PLATE

Task Number	Item	Date(s)	Recorded By
29209-1	Make selected GTAW welds on carbon steel plate coupons.		
29209-2	Make multiple-pass open-root V-groove welds on carbon steel plate in the 1G (flat) position using GTAW and carbon steel filler metal.		
29209-3	Make multiple-pass open-root V-groove welds on carbon steel plate in the 2G (horizontal) position using GTAW and carbon steel filler metal.		
29209-4	Make multiple-pass open-root V-groove welds on carbon steel plate in the 3G (vertical) position using GTAW and carbon steel filler metal.		
29209-5	Make multiple-pass open-root V-groove welds on carbon steel plate in the 4G (overhead) position using GTAW and carbon steel filler metal.		

MODULE 29210-03 - GAS TUNGSTEN ARC WELDING (GTAW) – ALUMINUM PLATE

Task Number	Item	Date(s)	Recorded By
29210-1	Set up GTAW equipment to make fillet welds on aluminum plate.		
29210-2	Make selected GTAW welds on aluminum plate coupons: <ul style="list-style-type: none">• Weave beads• Weld restarts• Weld terminations• Overlapping beads		
29210-3	Make fillet welds on aluminum plate in the 1F (flat) and 2F (horizontal) positions, using GTAW.		
29210-4	Make multiple-pass V-groove welds with backing on aluminum plate in the 1G (flat) position, using GTAW.		

Level Three

MODULE 29301-03 - PREHEATING AND POSTWELD HEAT TREATMENT OF METALS

Task Number	Item	Date(s)	Recorded By
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There are no performance tasks for this module.

MODULE 29302-03 - PHYSICAL CHARACTERISTICS AND MECHANICAL PROPERTIES OF METALS

Task Number	Item	Date(s)	Recorded By
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There are no performance tasks for this module.

MODULE 29303-03 – GAS METAL ARC WELDING (GMAW) – PIPE

Task Number	Item	Date(s)	Recorded By
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29303-1	Set up GMAW equipment.		
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29303-2	Make GMAW open-root V-groove welds in the 1G-ROTATED position, using applicable filler metal and shielding gas.		
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29303-3	Make GMAW open-root V-groove welds in the 2G position, using applicable filler metal and shielding gas.		
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29303-4	Make GMAW open-root V-groove welds in the 5G position, using applicable filler metal and shielding gas.		
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29303-5	Make GMAW open-root V-groove welds in the 6G (or 6GR) position, using applicable filler metal and shielding gas.		
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MODULE 29304-03 – FLUX CORED ARC WELDING (FCAW) – PIPE

Task Number	Item	Date(s)	Recorded By
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29304-1	Set up FCAW equipment for open-root V-groove pipe welds.		
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29304-2	Make FCAW open-root V-groove pipe welds in the 1G-ROTATED position.		
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29304-3	Make FCAW open-root V-groove pipe welds in the 2G position.		
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29304-4	Make FCAW open-root V-groove pipe welds in the 5G position.		
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29304-5	Make FCAW open-root V-groove pipe welds in the 6G position.		
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MODULE 29305-03 – GAS TUNGSTEN ARC WELDING (GTAW) – CARBON STEEL PIPE

Task Number	Item	Date(s)	Recorded By
29305-1	Set up GTAW equipment.		
29305-2	Make GTAW open-root V-groove welds on carbon pipe in the 2G position, using carbon steel filler metal and argon gas.		
29305-3	Make GTAW open-root V-groove welds on carbon pipe in the 5G position, using carbon steel filler metal and argon gas.		
29305-4	Make GTAW open-root V-groove welds on carbon pipe in the 6G position, using carbon steel filler metal and argon gas.		

MODULE 29306-03 – GAS TUNGSTEN ARC WELDING (GTAW) – LOW-ALLOY AND STAINLESS STEEL PIPE

Task Number	Item	Date(s)	Recorded By
29306-1	Prepare the area for GTAW.		
29306-2	Set up GTAW equipment.		
29306-3	Make GTAW open-root V-groove welds on appropriate metal pipe in the 2G position, using low-alloy and stainless steel filler metal.		
29306-4	Make GTAW open-root V-groove welds on appropriate metal pipe in the 5G position, using low-alloy and stainless steel filler metal.		
29306-5	Make GTAW open-root V-groove welds on appropriate metal pipe in the 6G position, using low-alloy and stainless steel filler metal.		

MODULE 29307-03 – GAS TUNGSTEN ARC WELDING (GTAW) – ALUMINUM PIPE

Task Number	Item	Date(s)	Recorded By
29307-1	Set up GTAW equipment to weld aluminum pipe.		
29307-2	Make GTAW V-groove or modified U-groove welds on aluminum pipe in the following positions: <ul style="list-style-type: none">• 2G• 5G• 6G		

MODULE 29308-03 – GAS METAL ARC WELDING (GMAW) – ALUMINUM PLATE AND PIPE

Task Number	Item	Date(s)	Recorded By
29308-1	Make selected GMAW welds on aluminum plate coupons: <ul style="list-style-type: none">• Stringer beads• Weave beads• Weld restarts• Weld terminations• Overlapping beads		
29308-2	Make selected fillet welds on aluminum plate: <ul style="list-style-type: none">• 1F position• 2F position• 3F position• 4F position		
29308-3	Make selected groove welds on aluminum plate: <ul style="list-style-type: none">• 1G position• 2G position• 3G position• 4G position		
29308-4	Make selected groove welds on aluminum pipe: <ul style="list-style-type: none">• 1G-ROTATED position• 2G position• 5G position• 6G position		