

Correlation of Strands and Standards to Welding Technician — Intermediate Level

Student will use critical thinking and problem-solving skills

Standard	Sub-Skill	Correlation
Student will use communication skills to effectively communicate with others.	Understand when it is appropriate to listen and to speak.	Not covered in this book, covered in Core Title
	Understand and follow verbal and written instructions for classroom and laboratory activities.	Not covered in this book, covered in Core Title
Student will effectively use teamwork to respectfully work with others.	Identify and understand different roles in working with a team.	Not covered in this book, covered in Core Title
Student will use critical thinking and problem-solving skills.	Analyze the cause of the problem.	Not covered in this book, covered in Core Title
	Develop a solution to address the problem.	Not covered in this book, covered in Core Title
	Implement the plan.	Not covered in this book, covered in Core Title
	Evaluate the effectiveness of the plan.	Not covered in this book, covered in Core Title
Student will be dependable, reliable, steady, trustworthy and consistent in performance and behavior.	Set and meet goals on attendance and punctuality.	Not covered in this book, covered in Core Title
	Prioritize, plan and manage work to complete assignments and projects on time.	Not covered in this book, covered in Core Title
Student will be accountable for results.	Use an achievement chart for activities and behaviors in class that encourages a personal evaluation of classroom performance.	Not covered in this book, covered in Core Title
	File a regular written report on progress toward completion of assignments and projects.	Not covered in this book, covered in Core Title

Be familiar with the legal requirements and expectations of the course.	Be familiar with the course disclosure statement and all requirements for successful completion of the course.	Not covered in this book, covered in Core Title
	Demonstrate workplace ethics, e.g. fair, honest, disciplined.	Not covered in this book, covered in Core Title

Student will participate in work-place readiness activities.

Standard	Sub-Skill	Correlation
Student will demonstrate employability skills.	Use a career search network to find career choices.	Not covered in this book, covered in Core Title
	Write a resume including a list of demonstrated skills.	Not covered in this book, covered in Core Title
	Write a letter of application.	Not covered in this book, covered in Core Title
	Complete a job application.	Not covered in this book, covered in Core Title
	Participate in an actual or simulated job interview.	Not covered in this book, covered in Core Title
Student will participate in a work-based learning experience outside the classroom.	Student will plan and implement a work-based learning experience aligned with their career goal.	Not covered in this book, covered in Core Title

Students will understand with welding processes and procedures.

Standard	Sub-Skill	Correlation
Identify weld joints, weld types and weld positions.	Identify the five welding joints: butt, corner, edge, lap and tee.	Module 29201 1.1.1
	Identify fillet and groove welds.	Module 29201 1.1.2 Figure7, 1.2.1
	Identify the four welding positions: flat,	Module 29209

horizontal, vertical, and overhead.	3.1.0-3.1.4,3.2.0-3.2.7
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Student will demonstrate appropriate welding safety practices for laboratory and work settings.

Standard	Sub-Skill	Correlation
Implement safety practices related to welding.	Identify, select, and properly use appropriate personal protective equipment (PPE).	29205,29209,29207, 29210 Modules 1.1.0-1.1.3
	Verify that all equipment is in good operating condition and that appropriate safety devices are in place and working (e.g., guards in place, tool rests adjusted, etc.).	Not covered in this book
	Maintain a neat, well-organized laboratory or shop working area.	Not covered in this book
Identify fire hazard conditions and actions to take in case of fire.	Explain combustion and identify three conditions necessary for it to occur.	Not covered in this book
	Describe fire prevention in a welding shop or work site.	29205,29209,29207, 29210 Modules 1.1.0-1.1.3
	Explain classes of fires and appropriate extinguishers.	Not covered in this book
Take appropriate actions in an accident or emergency.	Demonstrate the use of simple first aid in an accident with an injury.	Not covered in this book
	Locate first aid kits and investigate their contents and use in appropriate settings.	Not covered in this book
	Discuss appropriate safety responses in an accident or emergency.	Not covered in this book

Student will read and interpret welding symbols and drawing symbols identified in blueprints.

Standard	Sub-Skill	Correlation
Use intermediate math and measuring skills to enhance layout techniques.	Calculate the circumference of a circle.	Not covered in this book
	Use Pythagorean Theorem to calculate the missing side of a triangle (3-4-5 rule).	Not covered in this book
	Correctly use and interpret reading on a	Not covered in this

	dial caliper.	book
Read and interpret welding blueprints.	Interpret the tolerance dimensions found on a blueprint in decimals, fractions, and degrees.	Module 29202 1.0.0-1.2.4 Appendix 29202A
	Draw blueprints for simple welding projects.	Not covered in this book
Identify and apply basic welding symbols.	Identify and interpret basic welding symbols including bevel groove weld, plug or slot weld, melt through, intermittent fillet weld, and contour symbols.	Module 29202 1.0.0-1.4.8
	Identify and interpret drawings describing the anatomy of a groove and fillet weld.	Module 29202 Figure 7 1.2.1,1.2.2,1.2.3,1.2.4
	Draw welding symbols for given specification.	Module 29202 Figure 4-36
	Interpret a welding print and welding procedure specifications.	Module 29202 Print /1.0.0 section review WPS/Module 29203 Figure 5A,6

Students will use the Flux Cored Arc Welding (FCAW) process.

Standard	Sub-Skill	Correlation
Set up for FCAW operations on carbon steel.	Properly set up welding machine.	Module 29210 1.3.3
	Identify wire classification	Module 29205 3.2.0
Properly set up and complete fillet and groove welds in the flat and horizontal position with FCAW process.	Make 1F (flat position-fillet weld) welds on carbon steel.	Module 29210 1.3.2 Appendix 29210A
	Make 2F (horizontal position-fillet weld) welds on carbon steel.	Module 29210 1.3.2 Appendix 29210A
	Make 1G (flat position-groove weld) welds on carbon steel.	Module 29210 1.3.2 Appendix 29210A

Student will use the Gas Tungsten Arc Welding (GTAW) process.

Standard	Sub-Skill	Correlation
Set up for GTAW operations on carbon steel.	Properly set up welding machine.	Module 29207 1.1.4-1.2.4,3.1.0-3.2.5

Properly set up and complete fillet and groove welds in the flat and horizontal position with GTAW process.	Identify filler rod classifications.	Module 29207 2.5.0-2.5.8
	Identify tungsten electrode classifications; lanthanated, ceriated, thoriated and pure.	Module 29207 3.3.0-3.3.8
	Make 1F (flat position-fillet weld) welds on carbon steel.	Module 29208 1.0.0-1.2.1 Appendix 29208A
	Make 2F (horizontal position-fillet weld) welds on carbon steel.	Module 29208 1.0.0-1.2.1 Appendix 29208A
	Make 1G (flat position-groove weld) welds on carbon steel.	Module 29208 1.0.0-1.2.1 Appendix 29208A

Student will use the Carbon Arc Cutting (CAC-A) or gouging process.

Standard	Sub-Skill	Correlation
Set up for Carbon Arc Cutting (CAC-S) gouging operations on carbon steel.	Properly set up Carbon Arc machine.	Not covered in this book, covered in Welding Level 1
	Identify Carbon Arc electrodes.	Not covered in this book, covered in Welding Level 1
Properly set up and complete gouging operation.	Perform straight gouging operations on carbon steel.	Not covered in this book, covered in Welding Level 1
	Pierce a hole through a carbon steel plate.	Not covered in this book, covered in Welding Level 1

Students will use the Plasma Arc cutting process.

Standard	Sub-Skill	Correlation
Set up for plasma arc cutting operations on	Properly set up Plasma Arc machine.	Not covered in this book, covered in

carbon steel.		Welding Level 1
Properly set up and complete cutting operation.	Perform straight cutting operations on carbon steel.	Not covered in this book, covered in Welding Level 1
	Perform shape cutting operations on carbon steel.	Not covered in this book, covered in Welding Level 1
	Pierce a hole through a carbon steel plate.	Not covered in this book, covered in Welding Level 1