

American Welding Society Correlation Chart

The following chart correlates the American Welding Society's AWS EG2.0:2008

Guide for the Training of Welding Personnel: Level I—Entry Welder to the *Welding Fundamentals* text. The categories are correlated to the text and Lab Workbook by page numbers.

The chart's organization allows you to easily gear your learning program to the American Welding Society's qualification and training standards for entry-level personnel.

AWS Key Objective	Objective Title	<i>Welding Fundamentals</i> Text, Instructor's Resource, and Lab Workbook References	
Module 1: Occupational Orientation			
1	Prepare time or job cards, reports, or records.	Text: pages 82–86.	Instructor's Resource: Lesson, Job, and Safety Test Record.
2	Perform housekeeping duties.	Text: pages 22–23.	Instructor's Resource: Shop Cleanliness.
3	Follow verbal instructions to complete work assignments.	Text: pages 6–7, 9, 20.	Lab Workbook: Assigned Job 25-1.
4	Follow written instructions to complete work assignments.	Text: pages 6–7, 9, All Textbook Exercises.	All Lab Workbook Assigned Jobs.
Module 2: Safety and Health of Welders			
1	Demonstrates proper use and inspection of personal protection equipment (PPE).	Text: pages 20–22, 137–138, 287.	Lab Workbook: Lesson 2. All Lab Workbook Assigned Jobs.
2	Demonstrates proper safe operation practices in work area.	Text: pages 20–31, 168–169, 242, 287, 341, 355–356, 487.	Lab Workbook: Lesson 2. All Assigned Jobs and all Safety Tests.
3	Demonstrates proper use and inspection of ventilation equipment.	Text: pages 27–28, 138, 147.	Lab Workbook: Lesson 2.

4	Demonstrates proper Hot Zone operation.	Text: pages 22–25, 29.	Lab Workbook: Lesson 2.
5	Demonstrates proper work actions for working in confined spaces.	Text: pages 27–29, 31.	Lab Workbook: Lesson 2.
6	Demonstrates proper use of precautionary labeling and MSDS information.	Text: pages 29–31.	Lab Workbook: Lesson 2.
7	Demonstrates proper inspection and operation of equipment used for each welding and thermal cutting process used. (This is best done as a part of the process module/unit for each of the required welding or thermal cutting processes.)	Text: pages 147, 168–172, 230–242, 248, 292–301, 306–308, 341–346, 360–361, 378–389, 487, 492–499.	All Lab Workbook Assigned Jobs.
Module 3: Drawing and Welding Symbol Interpretation			
1	Interpret basic elements of a drawing or sketch.	Text: pages 108–110.	Lab Workbook: Lesson 8, Assigned Jobs 8-1 and 8-2.
2	Interpret welding symbol information.	Text: pages 110–123.	Lab Workbook: Lesson 8, Assigned Jobs 8-1 and 8-2.
3	Fabricate parts from a drawing or sketch.	Text: pages 76–86, 108–123.	Lab Workbook: Lesson 8, Numerous Assigned Jobs.
Module 4: Shielded Metal Arc Welding (SMAW)			
1	Perform safety inspections of SMAW equipment and accessories.	Text: pages 147, 168.	Lab Workbook: Lesson 10, Assigned Job 10-1.
2	Make minor external repairs to SMAW equipment and accessories.	Text: pages 146–147.	Lab Workbook: Lesson 10.
3	Set up for SMAW operations on carbon steel.	Text: pages 147–148, 159–161, 168–169.	Lab Workbook: Lessons 10, 11, and 12. Assigned Job 12-1.

<p>4 Operate SMAW equipment on carbon steel.</p>	<p>Text: pages 169–176. Exercise 12-1, page 176.</p>	<p>Lab Workbook: Lessons 12, 13, and 14 and related Assigned Jobs.</p>
<p>5 Make fillet welds in all positions on carbon steel.</p>	<p>Text: pages 176–179, 187–189, 191–192. Exercise 12-2, pages 177–179. Exercise 13-1, page 188. Exercise 13-2, page 188. Exercise 13-4, page 191. Exercise 13-6, page 193.</p>	<p>Lab Workbook: Lessons 12 and 13. Assigned Jobs 12-2, 12-3, 13-1, 13-2, 13-4, 13-5, 13-7, and 13-8.</p>
<p>6 Make groove welds in all positions on carbon steel.</p>	<p>Text: pages 179–180, 189, 191–193. Exercise 12-3, page 180. Exercise 13-3, page 190. Exercise 13-5, page 192. Exercise 13-7, page 193.</p>	<p>Lab Workbook: Lessons 12 and 13. Assigned Jobs 12-4, 13-3, 13-6, and 13-9.</p>
<p>7 Passes SMAW welder performance qualification test (2G and 3G, uphill, limited thickness test plates) on carbon steel.</p>	<p>Text: pages 576–579.</p>	<p>Lab Workbook: Lesson 37.</p>
<p>Module 5: Gas Metal Arc Welding (GMAW-S, GMAW Spray Transfer)</p>		
<p>Note: Jobs in the Lab Workbook can be modified as necessary by changing the specified metal transfer method.</p>		
<p>1 Perform safety inspection of GMAW</p>	<p>Text: pages 230, 242,</p>	<p>Lab Workbook: Gas</p>

equipment and accessories.	248.	Metal and Flux Cored Arc Welding Safety Test, Lesson 16, Assigned Job 16- 2.
2 Make minor external repairs to GMAW equipment and accessories.	Text: pages 220, 233– 234.	Lab Workbook: Lesson 16, Assigned Job 16-1.
Short Circuiting Transfer		
3 Set up for GMAW-S operations on carbon steel.	Text: pages 230–242, 248–250.	Lab Workbook: Lessons 15–18. Assigned Jobs 16-1, 16-2, and 17-1.
4 Operate GMAW-S equipment on carbon steel.	Text: pages 250–253. Exercise 17-1, page 252.	Lab Workbook: Lessons 17 and 18 and related Assigned Jobs.
5 Make fillet welds in all positions on carbon steel.	Text: pages 253–255, 264–265, 268–269, 271. Exercise 17-2, page 254. Exercise 17-3, pages 254–255. Exercise 18-1, page 266. Exercise 18-3, page 268. Exercise 18-4, page 270. Exercise 18-6, page 272.	Lab Workbook: Lessons 17 and 18. Assigned Jobs 17-3, 17-4, 18-1, 18-2, 18-4, 18-5, 18-7, and 18-8.
6 Make groove welds in all positions on carbon steel.	Text: pages 255–257, 270–271.	Lab Workbook: Lessons 17 and 18.

	<p>Exercise 17-4, pages 256–257.</p> <p>Exercise 18-2, page 267.</p> <p>Exercise 18-5, pages 270–271.</p> <p>Exercise 18-7, page 272.</p>	<p>Assigned Jobs 17-5, 18-3, 18-6, and 18-9.</p>
<p>7 Passes GMAW-S welder performance qualification test on carbon steel.</p>	<p>Text: pages 576–579.</p>	<p>Lab Workbook: Lesson 37.</p>
<p>Spray Transfer</p>		
<p>8 Set up for GMAW (spray) operations on carbon steel.</p>	<p>Text: pages 230–242, 248–250.</p>	<p>Lab Workbook: Lessons 15–18. Assigned Jobs 16-1, 16-2, and 17-1.</p>
<p>9 Operate GMAW (spray) equipment on carbon steel.</p>	<p>Text: pages 250–253. Exercise 17-1, page 252.</p>	<p>Lab Workbook: Lessons 17 and 18 and related Assigned Jobs.</p>
<p>10 Make fillet welds in 1F and 2F on carbon steel.</p>	<p>Text: pages 253–255, 264–265. Exercise 17-2, page 254. Exercise 17-3, pages 254–255. Exercise 18-1, page 266.</p>	<p>Lab Workbook: Lessons 17 and 18. Assigned Jobs 17-2, 17-3, 17-4, 18-1, and 18-2.</p>
<p>11 Make groove welds in the 1G position on carbon steel.</p>	<p>Text: pages 147–148. Exercise 17-4, pages 256–257.</p>	<p>Lab Workbook: Lessons 17 and 18. Assigned Jobs 17-2 and 17-5.</p>
<p>12 Passes GMAW (spray) welder</p>	<p>Text: pages 576–579.</p>	<p>Lab Workbook:</p>

performance qualification test on carbon steel.		Lesson 37.
Module 6: Flux Cored Arc Welding (FCAW-G/GM, FCAW-S)		
Note: Jobs in the Lab Workbook can be changed from the GMAW process to the FCAW-G or FCAW method.		
1 Perform safety inspections of FCAW equipment and accessories.	Text: pages 230, 242, 248.	Lab Workbook: Gas Metal and Flux Cored Arc Welding Safety Test, Lesson 16, Assigned Job 16-2.
2 Make minor external repairs to FCAW equipment and accessories.	Text: pages 220, 233–234.	Lab Workbook: Lab Workbook: Lesson 16, Assigned Job 16-1.
Gas Shielded		
3 Set up for FCAW-G/GM operations on carbon steel.	Text: pages 230–242, 248–250.	Lab Workbook: Lab Workbook: Lessons 15–18. Assigned Jobs 16-1, 16-2, and 17-1.
4 Operate FCAW-G/GM equipment on carbon steel.	Text: pages 250–253. Exercise 17-1, page 252.	Lab Workbook: Lessons 17 and 18 and related Assigned Jobs.
5 Make fillet welds in all positions on carbon steel.	Text: pages 253–255, 264–265, 268–269, 271. Exercise 17-2, page 254. Exercise 17-3, pages 254–255. Exercise 18-1, page 266.	Lab Workbook: Lessons 17 and 18. Assigned Jobs 17-3, 17-4, 18-1, 18-2, 18-4, 18-5, 18-7, and 18-8.

	<p>Exercise 18-3, page 268.</p> <p>Exercise 18-4, page 270.</p> <p>Exercise 18-6, page 272.</p>	
<p>6 Make groove welds in all positions on carbon steel.</p>	<p>Text: pages 255–257, 270–271.</p> <p>Exercise 17-4, pages 256–257.</p> <p>Exercise 18-2, page 267.</p> <p>Exercise 18-5, pages 270–271.</p> <p>Exercise 18-7, page 272.</p>	<p>Lab Workbook: Lessons 17 and 18. Assigned Jobs 17-5, 18-3, 18-6, and 18-9.</p>
<p>7 Passes FCAW-G/GM welder performance qualification test on carbon steel.</p>	<p>Text: pages 576–579.</p>	<p>Lab Workbook: Lesson 37.</p>
<p>Self-Shielded</p>		
<p>8 Set up for FCAW-G/GM operations on carbon steel.</p>	<p>Text: pages 230–242, 248–250.</p>	<p>Lab Workbook: Lessons 15–18. Assigned Jobs 16-1, 16-2, and 17-1.</p>
<p>9 Operate FCAW-S equipment on carbon steel.</p>	<p>Text: pages 250–253.</p> <p>Exercise 17-1, page 252.</p>	<p>Lab Workbook: Lessons 17 and 18 and related Assigned Jobs.</p>
<p>10 Make fillet welds in all positions on carbon steel.</p>	<p>Text: pages 253–255, 264–265, 268–269, 271.</p> <p>Exercise 17-2, page 254.</p>	<p>Lab Workbook: Lessons 17 and 18. Assigned Jobs 17-3, 17-4, 18-1, 18-2, 18-4, 18-5, 18-7, and 18-8.</p>

	<p>Exercise 17-3, pages 254–255.</p> <p>Exercise 18-1, page 266.</p> <p>Exercise 18-3, page 268.</p> <p>Exercise 18-4, page 270.</p> <p>Exercise 18-6, page 272.</p>	
<p>11 Make groove welds in all positions on carbon steel.</p>	<p>Text: pages 255–257, 270–271.</p> <p>Exercise 17-4, pages 256–257.</p> <p>Exercise 18-2, page 267.</p> <p>Exercise 18-5, pages 270–271.</p> <p>Exercise 18-7, page 272.</p>	<p>Lab Workbook: Lessons 17 and 18. Assigned Jobs 17-5, 18-3, 18-6, and 18-9.</p>
<p>12 Passes FCAW-S welder performance qualification test on carbon steel.</p>	<p>Text: pages 576–579.</p>	<p>Lab Workbook: Lesson 37.</p>
Module 7: Gas Tungsten Arc Welding (GTAW)		
<p>Note: Jobs in the Lab Workbook can be modified as necessary by changing the specified base metal.</p>		
<p>1 Perform safety inspections of GTAW equipment and accessories.</p>	<p>Text: pages 284, 287, 292, 306, 324.</p>	<p>Lab Workbook: Gas Tungsten Arc Welding Safety Test.</p>
<p>2 Make minor external repairs to GTAW equipment and accessories.</p>	<p>Text: pages 292–294.</p>	<p>Lab Workbook: Lesson 20. Assigned Jobs 20-1 and 20-2.</p>
Carbon Steel		
<p>3 Set up for GTAW operations on</p>	<p>Text: pages 292–301,</p>	<p>Lab Workbook:</p>

carbon steel.	306–308.	Lessons 20 and 21. Assigned Jobs 20-1 and 20-2.
4 Operate GTAW equipment on carbon steel.	Text: pages 308–312. Exercise 21-1, pages 309–310. Exercise 21-2, pages 310–311. Exercise 21-3, page 313.	Lab Workbook: Lessons 21 and 22. Assigned Jobs 21-1, 21-4, 21-6, 21-7, and 21-8.
5 Make fillet welds in all positions on carbon steel.	Text: pages 313–315, 324–326, 328–330. Exercise 21-4, page 313. Exercise 21-5, page 314. Exercise 21-6, page 316. Exercise 22-1, pages 325–326. Exercise 22-2, page 326. Exercise 22-4, page 329. Exercise 22-6, page 330.	Lab Workbook: Lessons 21 and 22. Assigned Jobs 21-2, 21-9, 21-10, 22-1, 22-2, 22-4, 22-5, 22-7, and 22-8.
6 Make groove welds in all positions on carbon steel.	Text: pages 316–317, 326–330. Exercise 21-7, page 317. Exercise 22-3, page 327. Exercise 22-5, page	Lab Workbook: Lessons 21 and 22. Assigned Jobs 21-3, 21-5, 21-11, 22-3, 22-6, and 22-9.

	329. Exercise 22-7, page 331.	
7 Passes GTAW welder performance qualification test on carbon steel.	Text: pages 576–579.	Lab Workbook: Lesson 37.
Austenitic Stainless Steel		
8 Set up for GTAW operations on austenitic stainless steel.	Text: pages 294–301, 306–308.	Lab Workbook: Lessons 20 and 21. Assigned Jobs 20-1 and 20-2.
9 Operate GTAW equipment on austenitic stainless steel.	Text: pages 308–312, 317 Exercise 21-8, pages 317–318.	Lab Workbook: Lessons 21 and 22. Assigned Jobs 21-1, 21-4, 21-6, 21-7, and 21-8.
10 Make fillet welds in the 1F, 2F, and 3F positions on austenitic stainless steel.	Text: pages 313–317, 324–326, 328, 331. Exercise 21-5, page 314. Exercise 21-6, page 316. Exercise 22-1, pages 325–326. Exercise 22-2, page 326. Exercise 22-4, page 329.	Lab Workbook: Lessons 21 and 22. Assigned Jobs 21-2, 21-9, 21-10, 22-1, 22- 2, 22-4, and 22-5.
11 Make groove welds in the 1G and 2G positions on austenitic stainless steel.	Text: pages 316–317, 326–327, 331. Exercise 21-7, page 317. Exercise 22-3, page 327.	Lab Workbook: Lessons 21 and 22. Assigned Jobs 21-3, 21-5, 21-11, and 22-3.

<p>12 Passes GTAW welder performance qualification test on austenitic stainless steel.</p>	<p>Text: pages 576–579.</p>	<p>Lab Workbook: Lesson 37.</p>
<p>Aluminum</p>		
<p>13 Set up for GTAW operations on aluminum.</p>	<p>Text: pages 294–301, 306–308.</p>	<p>Lab Workbook: Lessons 20 and 21. Assigned Jobs 20-1 and 20-2.</p>
<p>14 Operate GTAW equipment on aluminum.</p>	<p>Text: pages 308–312, 317. Exercise 21-8, pages 317–318.</p>	<p>Lab Workbook: Lessons 21 and 22. Assigned Jobs 21-1, 21-4, 21-6, 21-7, and 21-8.</p>
<p>15 Make fillet welds in the 1F and 2F positions on aluminum.</p>	<p>Text: pages 313–317, 324–326, 328, 331. Exercise 21-5, page 314. Exercise 21-6, page 316. Exercise 22-1, pages 325–326. Exercise 22-2, page 326. Exercise 22-4, page 329.</p>	<p>Lab Workbook: Lessons 21 and 22. Assigned Jobs 21-2, 21-9, 21-10, 22-1, and 22-2.</p>
<p>16 Make groove welds in the 1G position on aluminum.</p>	<p>Text: pages 316–317, 326–327, 331. Exercise 21-7, page 317. Exercise 22-3, page 327.</p>	<p>Lab Workbook: Lesson 21. Assigned Jobs 21-3, 21-5, and 21-11.</p>
<p>17 Passes GTAW welder performance qualification test on aluminum.</p>	<p>Text: pages 576–579.</p>	<p>Lab Workbook: Lesson 37.</p>
<p>Module 8: Thermal Cutting Processes</p>		

Unit 1: Manual Oxyfuel Gas Cutting (OFC)		
1 Perform safety inspections of manual OFC equipment and accessories.	Text: pages 355–356, 360–361, 380, 382–384, 394.	Lab Workbook: Oxyfuel Gas Cutting and Welding Safety Test. Lessons 24 and 25. Assigned Job 26-1.
2 Make minor external repairs to manual OFC equipment and accessories.	Text: pages 378–380, 383–384.	Lab Workbook: Lessons 24 and 25.
3 Set up for manual OFC operations on carbon steel.	Text: pages 378–389, 394–395.	Lab Workbook: Lessons 24, 25, and 26. Assigned Jobs 25-1, 26-1, and 26-2.
4 Operate manual OFC equipment on carbon steel.	Text: pages 395–400.	Lab Workbook: Lesson 26. Assigned Jobs 26-1 and 26-2.
5 Perform straight, square edge cutting operations in the flat position on carbon steel.	Text: pages 395–400. Exercise 26-1, pages 399–400. Exercise 26-2, page 400.	Lab Workbook: Lesson 26. Assigned Jobs 26-1 and 26-2.
6 Perform shape, square edge cutting operations in the flat position on carbon steel.	Text: pages 395–400.	Lab Workbook: Lesson 26.
7 Perform straight, bevel edge cutting operations in the flat position on carbon steel.	Text: pages 395–400. Exercise 26-3, page 401.	Lab Workbook: Lesson 26.
8 Perform scarfing and gouging operations to remove base and weld metal in flat and horizontal positions on carbon steel.	Text: pages 395–400.	Lab Workbook: Lesson 26.
Unit 2: Mechanized Oxyfuel Gas Cutting (OFC) [e.g. Track Burner]		
1 Perform safety inspections of mechanized OFC equipment and accessories.	Text: pages 355–356, 360–361, 380, 382–	Lab Workbook: Oxyfuel Gas

	384, 394.	Cutting and Welding Safety Test Workbook: Lessons 24 and 25.
2 Make minor external repairs to mechanized OFC equipment and accessories.	Text: pages 378–380, 383–384.	Lab Workbook: Oxyfuel Gas Cutting and Welding Safety Test Workbook: Lessons 24 and 25. Assigned Job 26-1.
3 Set up for mechanized OFC operations on carbon steel.	Text: pages 378–389, 394–395, 401–403.	Lab Workbook: Lessons 24 and 25. Assigned Jobs 25-1 and 26-3.
4 Operate mechanized OFC equipment on carbon steel.	Text: pages 401–403.	Lab Workbook: Lesson 26. Assigned Job 26-1.
5 Perform straight, square edge cutting operations in the flat position on carbon steel.	Text: pages 402–403. Exercise 26-4, page 403.	Lab Workbook: Lesson 26. Assigned Job 26-1.
6 Perform straight, bevel edge cutting operations in the flat position on carbon steel.	Text: pages 402–403. Exercise 26-4, page 403.	Lab Workbook: Lesson 26.
Unit 3: Manual Plasma Arc Cutting (PAC)		
1 Perform safety inspections of manual PAC equipment and accessories.	Text: page 341.	Lab Workbook: Plasma Arc Cutting Safety Test. Lesson 23. Assigned Job 23-1.
2 Make minor external repairs to manual PAC cutting equipment and accessories.	Text: pages 345–346.	Lab Workbook: Lesson 23. Assigned Job 23-1.
3 Set up for manual PAC operations on	Text: pages 337–342.	Lab Workbook:

carbon steel, austenitic stainless steel, and aluminum.		Lesson 23. Assigned Jobs 23-1, 23-2, and 23-3.
4 Operate manual PAC equipment on carbon steel, austenitic stainless steel, and aluminum.	Text: pages 342–346.	Lab Workbook: Lesson 23. Assigned Jobs 23-2 and 23-3.
5 Perform straight, square edge cutting operations in the flat position on carbon steel, austenitic stainless steel, and aluminum.	Text pages 342–346.	Lab Workbook: Lesson 23. Assigned Jobs 23-2 and 23-3.
6 Perform shape, square edge cutting operations in the flat position on carbon steel, austenitic stainless steel, and aluminum.	Text pages 342–346.	Lab Workbook: Lesson 23. Assigned Jobs 23-2 and 23-3.
Unit 4: Manual Air Carbon Arc Cutting (CAC-A)		
1 Perform safety inspections of manual CAC-A equipment and accessories.	Text: pages 548–549.	
2 Make minor external repairs to manual CAC-A equipment and accessories.	Text: pages 548–549.	
3 Set up manual CAC-A scarfing and gouging operations on carbon steel.	Text: pages 548–549.	
4 Operate manual CAC-A equipment on carbon steel.	Text: pages 548–549.	
5 Perform scarfing and gouging operations to remove base and weld metal in the flat and horizontal positions on carbon steel.	Text: pages 548–549.	
Module 9: Welding Inspection and Testing		
1 Examine cut surfaces and edges of prepared base metal parts.	Text: pages 98, 241–242, 396–397.	Lab Workbook: Lesson 36. Numerous Assigned Jobs.
2 Examine tacks, root passes, intermediate layers, and completed welds.	Text: pages 99, 176, 180–181, 193, 258, 318.	Lab Workbook: Lesson 36. Numerous

		Assigned Jobs.
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