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Schools Receive a 20% Educational Discount
COMPLETE TRAINING COURSE OVERVIEW

Each Complete Course Includes:

- an instructor’s guide; DVD(s), one student workbook, one technical guide, tests & answer keys
- Instructor’s Guide
  With comprehensive instructions for implementing each topic.

<table>
<thead>
<tr>
<th>Topic/Objective</th>
<th>Training Time</th>
<th>Materials/ Settings</th>
<th>Testing Method</th>
<th>Suggestions/Notes/Cautions for the Instructor</th>
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<tr>
<td>Arc Welding Safety</td>
<td>1 Hr.</td>
<td></td>
<td>Written test based on ANSI Z49.1 (for AWS EGZ5.6 and QC10 compliance).</td>
<td>Introduce this topic by paraphrasing the following: Every year, hundreds of peoples’ lives are changed forever because they, or someone they work with fails to follow proper safety procedures. Think about it. One day the pressure is on to get a job done. You’ve done the job so many times before, and it seems so routine that you decide to take a few short cuts. The next thing you know you’re lying in a hospital bed with third degree burns, or perhaps you’ve lost the use of your legs and will never walk again. So protect yourself and those around you by following safe work procedures.</td>
</tr>
<tr>
<td>Shielded Metal Arc Welding Basic</td>
<td></td>
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<td>Oral Quiz</td>
<td>A complete script of recommended things to say (bold) and questions to ask (italdent) along with suggestions, notes &amp; cautions for implementing each topic.</td>
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- DVDs

- Answer Keys for Written Test

  Answer keys for each written test makes it easy for instructors to measure student mastery of key concepts. (50 copies of each written test are shipped with each complete course.)

- One Student Workbook

  Featuring easy to follow practice sessions based on video demonstrations and summaries of essential theory.

- One Technical Guide

  An individual resource for instructors and students, each technical guide contains process specific information on equipment, process variables, weldability, pre- and post-weld procedures, shielding gases, electrodes, safety and more.
**Shielded Metal Arc Welding**

The Shielded Metal Arc Welding program is a complete training program. The fundamentals of shielded metal arc welding are covered in the basic program. It provides training in all positions, on mild steel with single and multipass welds. SMAW-1 (Structural) teaches welding on single V-groove welds on carbon steel with multipass welds in all positions with backing strips. SMAW-2 (Pre-pipe) teaches welding on single V-groove welds with open root on carbon steel with multipass welds in all positions. SMAW-2 is in preparation for the transition to pipe welding. There are three pipe welding courses; 2" Pipe Uphill, 6" Pipe Uphill and 6" Pipe Downhill.

**Based on AWS® Entry-Level SENSE (QC10 and EG 2.0).**

**Topics**
1. Shielded Metal Arc Welding Basic, Course Overview
2. Introduction to Shielded Metal Arc Welding
3. Arc Welding Safety
4. The Five Essentials
5. Striking & Controlling the Arc
6. Pad of Beads, Flat Position, E6013
7. Pads of Beads, Flat Position, E6010
8. Pads of Beads, Horizontal Position, E6010
9. The Welders Role In Quality Control
10. Fillet Weld, Lap Joint, Horizontal Position, E6013
11. Fillet Weld, Lap Joint, Horizontal Position, Uphill, E6010
12. Fillet Weld, Lap Joint, Overhead Position, E6010
13. Electrode Selection
14. Three-Bead Fillet Weld, T-joint, Horizontal Position, E6010
15. Fillet Weld, T-joint, Horizontal Position, Break Test, E6010
16. Fillet Weld, T-joint, Vertical Position, Uphill, with Z-weave Cover, E6010
17. Three-Bead Fillet Weld (Root & 2 Weaves), T-joint Vertical Position, Uphill, E6010
18. Three-Bead Fillet Weld, T-joint, Overhead Position, E6010
19. Fillet Weld, T-joint, Overhead Position, Break Test, E6010
20. The Low Hydrogen Electrodes and Their Uses
21. Three-Bead Fillet Weld, T-joint, Vertical Position, Uphill, with Z-weave Cover, E7018
22. Three-Bead Fillet Weld, T-joint, Overhead Position, E7018
23. Power Source Technology
24. Square-Groove Weld, Butt Joint, Horizontal Position
25. Square-Groove Weld, Butt Joint, Horizontal Position, Guided Bend Test
26. Square-Groove Weld, Butt Joint, Vertical Position, Uphill
27. Square-Groove Weld, Butt Joint, Vertical Position, Uphill, Guided Bend Test
28. Square-Groove Weld, Butt Joint, Overhead Position
29. Distortion Control
30. Multi-Pass Fillet Welds, T-joints, Flat, Horizontal, Vertical & Overhead Positions, E7018
31. Multi-Pass Fillet Welds, Lap Joint, Horizontal Position, E7018 & E7024
32. Square-Groove Weld, Butt Joint, Flat Position, Fillet Welds, Lap & T-joints, Horiz. Pos., E7024
33. Fillet Weld, Lap & T-joints, Horizontal & Vertical Position, Down, 11 Gauge, E6013
34. Fillet Weld, Lap & T-joints, Horizontal & Vertical Position, Down, 16 Gauge, E6013
35. Fillet Weld, Lap Joint, Vertical Position, Down, 11 & 16 Gauge, E6013
36. AWS® QC10 2G Qualification Test
37. AWS® QC10 3G Qualification Test
38. AWS® Standard Guided Bend Test

**Product**

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<tr>
<td>DV06</td>
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**Recommended as an advanced plate curriculum for Structural welding and displaying the use of backing strips.**

**Topics**
1. Shielded Metal Arc Welding Structural - Course Overview
2. Introduction to Shielded Metal Arc Welding
3. Safety & Health Of Welders
4. Single V-Groove Weld, Butt Joint, Horizontal (2G) Position
5. Weld Size & Profile
6. Procedure And Welder Qualification
7. Single V-Groove Weld, Butt Joint, Horizontal (2G) Position, Destructive Test
8. Single V-Groove Weld, Butt Joint, Vertical (3G) Position
9. Destructive Testing
10. Single V-Groove Weld, Butt Joint, Overhead (4G) Position
11. Nondestructive Testing
12. Single V-Groove Weld, Butt Joint, Horizontal (2G) Position
13. Air Carbon Arc Cutting & Gouging
14. Single V-Groove Weld, Butt Joint, Horizontal (2G) Position, Destructive Test
15. Single V-Groove Weld, Butt Joint, Vertical (3G) Position
16. Metals Identification for Welding
17. Single V-Groove Weld, Butt Joint, Overhead (4G) Position
18. Welding Cast Iron & Hard Surfacing Welds
19. Single V-Groove Weld, Butt Joint, Flat (1G) Position

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**To order, use form on page 17, Call 800.332.9448 Ext. 9509 or visit www.welding.org**
### Shielded Metal Arc Welding – Pre-pipe (Advanced 2)

Complete Course: 3 DVDs (1 hr. 58 min);
1 Instructor Guide, 4 written tests, 50 copies each

**Recommended as an advanced curriculum to prepare students for SMAW – open root – pipe welding.**

**Topics**
1. Shielded Metal Arc Welding Pre-Pipe - Course Overview
2. Introduction to Shielded Metal Arc Welding
3. Safety & Health of Welders
4. Single V-Groove Weld, Butt Joint, Horizontal (2G) Position
5. Weld Size & Profile
6. Procedure & Welder Qualification
7. Single V-Groove Weld, Butt Joint, Horizontal (2G) Position, Destructive Test
8. Single V-Groove Weld, Butt Joint, Vertical (3G) Position
9. Destructive Testing
10. Single V-Groove Weld, Butt Joint, Overhead (4G) Position
11. Nondestructive Testing
12. Single V-Groove Weld, Butt Joint, Vertical Down (3G) Position
13. Air Carbon Arc Cutting & Gouging
15. Metals Identification Of Welding
17. Welding Cast Iron & Hard Surfacing Welds
18. Single V-Groove, Butt Joint, Flat (1G) Position

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<td>4 written tests, 50 copies ea.</td>
<td>V05.41</td>
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<td>V05.40</td>
<td>$59.00</td>
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<tr>
<td>*Includes 1 student workbook, 1 technical guide &amp; answer keys for tests</td>
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<td>Site License</td>
<td>V05.50</td>
<td>$500.00</td>
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### Shielded Metal Arc Welding 2-Inch Pipe Uphill

Complete Course: 2 DVDs (1 hr. 54 min);
1 Instructor Guide, 2 written tests, 50 copies each

**Topics**
1. Shielded Metal Arc Welding 2" Pipe Uphill - Course Overview
2. Introduction to Shielded Metal Arc Welding Pipe
3. Safety & Health of Welders
4. Weld Quality: Reading the Puddle
5. Preparation & Assembly of an Open Root Pipe Joint - Double Extra Strong (XX Strong)
7. Standard Destructive Test - Double Extra Strong Pipe (XX Strong)
8. Single V-Groove Weld, Butt Joint, (5G) Pipe - Double Extra Strong (XX Strong)
10. Preparation & Assembly of an Open Root Pipe - Schedule 80
11. Single V-Groove weld, Butt Joint, (2G) Pipe - Schedule 80
12. Standard Destructive Test Schedule 80 Pipe
13. Single V-Groove Weld, Butt Joint, (5G) Pipe - Schedule 80

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<td>Instructor guide*</td>
<td>V04.40</td>
<td>$59.00</td>
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### Shielded Metal Arc Welding 6-Inch Pipe Uphill

Complete Course: 2 DVDs (1 hr. 57 min);
1 Instructor Guide; 5 written tests, 50 copies each

**Topics**
1. Shielded Metal Arc Welding 6" Pipe Uphill - Course Overview
2. Introduction to Shielded Metal Arc Welding Pipe
3. Safety & Health of Welders
4. Weld Quality: Reading the Puddle
5. Preparation & Assembly of an Open Root Pipe Joint
7. Standard Destructive Test - Schedule 80 Pipe
8. Methods of Applying the Root Pass
9. Single V-Groove Weld, Butt Joint, (5G) Pipe - Schedule 80
10. How to Read & Apply Welding Procedures
12. Preheat & Interpass Temperatures

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<td>Complete SMAW-6&quot; pipe Uphill</td>
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### Shielded Metal Arc Welding Pipe - Downhill

Complete Course: 2 DVDs (1 hr. 49 min);
1 Instructor Guide; 2 written tests, 50 copies each

**Topics**
1. Shielded Metal Arc Welding Pipe Downhill - Course Overview
2. Introduction to Shielded Metal Arc Welding Pipe - Downhill
3. Safety & Health of Welders
4. Weld Quality: Reading the Puddle - Downhill Travel
5. Preparation & Assembly of a 6" Open Root Pipe Joint - Downhill
6. Single V-Groove Weld, Butt Joint, (5G) Position, 6" Pipe- Downhill
7. Standard Visual Inspection - Schedule 80 Pipe - Downhill
8. Pipeline Construction & Welding - Downhill
9. How to Read & Apply Welding Procedures - Downhill
10. Single V-Groove Weld, Butt Joint, (6G) Position, 6" Pipe- Downhill
11. Standard Destructive Test, Guided Bend & Nick Break Test
12. Preparation & Assembly of a 2" Open Root Pipe Joint - Downhill
13. Single V-Groove Weld, Butt Joint, (5G) Position, 2" Pipe - Downhill

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Gas Metal Arc Welding Basic

Based on AWS® Entry-Level SENSE (QC10 and EG 2.0).

Topics
1. Gas Metal Arc Welding Basic - Course Overview
2. Introduction to Gas Metal Arc Welding
3. Safety & Health of Welders
4. Installation, Setup & Maintenance of Equipment
5. Surfacing Welds, Flat Position
6. Square Groove & Fillet Welds, Butt, Lap & T-Joints, Flat Position
7. Square Groove & Fillet Welds, Butt, Lap & T-Joints, Horizontal Position
8. The Quality of Welds
9. Square Groove & Fillet Welds, Butt, Lap & T-Joints, Vertical Position, Down
10. Square Groove & Fillet Welds, Butt, Lap & T-Joints, Vertical Position, Up
11. Metal Transfer & Shielding Gases
12. Square Groove & Fillet Welds, Butt, Lap & T-Joints, Overhead Position
13. Square V-Groove, Butt Joint, Horizontal Position
14. Square V-Groove, Butt Joint, Horizontal Position, Guided Bend Test
15. Square V-Groove, Butt Joint, Vertical Position, Down
16. Square V-Groove, Butt Joint, Vertical Position, Down, Guided Bend Test
17. Square V-Groove, Butt Joint, Vertical Position, Up
18. Square V-Groove, Butt Joint, Flat Position
19. Square V-Groove, Butt Joint, Overhead Position
20. Fillet Welds, Lap & T-Joints, Horizontal Position
21. Fillet Welds, Lap & T-Joints, Vertical Position, Down
22. Fillet Welds, Lap & T-Joints, Flat Position with Spray Transfer
23. Fillet Welds, Lap & T-Joints, Horizontal Position with Spray Transfer
24. Single V-Groove Weld, Flat Position with Spray Transfer

Gas Metal Arc Welding Advanced

Complete Course: 2 DVDs (1 hr. 52 min); 1 Instructor Guide; 2 written tests, 50 copies each

Topics
1. Gas Metal Arc Welding Advanced - Course Overview
2. Introduction to Gas Metal Arc Welding - Spray & Pulse Spray Transfer
3. Safety & Health of Welders
4. Equipment Set-Up, Operation & Shutdown
5. Single V-Groove Weld, Butt Joint, (1G) Position - Spray
6. Introduction to Pulse Spray Transfer
7. Single V-Groove Weld, Butt Joint, (2G) Position - Pulse
8. Standard Destructive Test
9. Weldability of Aluminum Alloys
10. Fillet Weld, Lap & T-Joint (2F) Position
11. Fillet Weld, Lap & T-Joint (3F) Position
12. Single V-Groove Weld, Butt Joint, (3G) Position
15. Fillet Weld, Lap & T-Joint (2F) Position

Gas Metal Arc Welding Pipe

Complete Course: 2 DVDs (1 hr. 10 min); 1 Instructor Guide; 2 written tests, 50 copies each

Topics
1. Gas Metal Arc Welding Pipe - Course Overview
2. Introduction to Gas Metal Arc Welding
3. Safety & Health of Welders
4. Equipment Setup, Operation & Shutdown
5. Preparation & Assembly of an Open Root Pipe Joint
6. Single V-Groove Weld, Butt Joint, (2G) Position
7. Weld Quality: Visual Inspection
8. Standard Destructive Test - Schedule 80 Pipe
10. Single V-Groove Weld, Butt Joint, (5G) Position Downhill Root, Uphill Fill & Cover
**Flux-Cored Arc Welding**

The Flux Cored Arc Welding training program provides the student with a thorough understanding of the Flux Cored Arc Welding process. It provides training in all positions, on carbon steels, with and without shielding gas, using small and large diameter flux cored electrodes.

**Gas Tungsten Arc Welding**

The Gas Tungsten Arc Welding program is a complete training program. The fundamentals of Gas Tungsten Arc Welding are covered in the basic program. It provides training on mild steel, stainless steel and aluminum, using both direct and alternating current. Gas Tungsten Arc Welding Pipe is divided into two programs. Gas Tungsten Arc Welding 2-inch Pipe prepares the student for pipe welding, and teaches the student to weld on 2-inch Sch. 80 pipe, in all positions. Gas Tungsten Arc Welding 6-inch Pipe provides training on 6-inch pipe using GTAW to deposit the root and second pass; and SMAW to complete the weld. Students also weld on stainless steel pipe and with a consumable insert.

### Product and Pricing

**COMPLETE TRAINING COURSES**

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<td>Complete GMAWB course</td>
<td>DV10</td>
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<td>2 written tests, 50 copies ea.</td>
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<td>V10.40</td>
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*Includes 1 student workbook, 1 technical guide & answer keys for tests

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To order, use form on page 17, Call 800.332.9448 Ext. 9509 or visit www.welding.org
### Complete Training Courses

29. Fillet Weld, Lap Joint, Horizontal & Flat Positions (Aluminum)
30. Square-Groove Weld, Butt Joint, Flat Position (Aluminum)
31. Fillet Weld, T-Joint, Horizontal & Flat Positions (Aluminum)
32. Fillet Weld, T-Joint, Vertical Position, Up (Aluminum)
33. Visual Inspection Test, Aluminum

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<td>Complete GTAWB course (DVD)</td>
<td>DV20</td>
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<td>$59.00</td>
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*Includes 1 student workbook, 1 technical guide & answer keys for tests
| Site License | V20.50 | $500.00 |

### Gas Tungsten Arc Welding

**2-Inch Pipe**

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**Topics**

1. Gas Tungsten Arc Welding 2" Pipe - Course Overview
2. Introduction to Gas Tungsten Arc Welding
3. Safety & Health of Welders
4. Equipment Setup, Adjustment & Shutdown
5. Preparation & Assembly of an Open Root Pipe Joint
6. Single V-Groove Weld, Butt Joint (2G) Pipe
7. Pipe Weld Quality
8. Single V-Groove Weld, Butt Joint, (2G) Pipe Destructive Test
9. Single V-Groove Weld, Butt Joint, (5G) Pipe
10. Single V-Groove Weld, Butt Joint, (6G) Pipe

### Oxyacetylene Welding, Cutting & Brazing

**Complete Course: 4 DVDs (3 hrs. 6 min); 1 Instructor Guide; 4 written tests, 50 copies each**

**ITEM NO. DV30**

**Recommended as an entry-level curriculum to teach cutting techniques & hand-eye coordination associated with good puddle control & filler addition.**

**Topics**

1. Oxyacetylene Welding, Brazing & Cutting - Course Overview
2. Introduction to Oxyacetylene Welding, Brazing & Cutting
3. Oxyacetylene Welding Safety
4. Safety & Health of Welders
5. Equipment Setup, Operation & Shutdown
6. Weld Quality: Controlling the Welding Variables
7. Stringer Bead, Bead on Plate - With & without Filler Metal, Flat Position
8. Fillet Weld, Lap Joint, Horizontal (2F) Position
9. Fillet Weld, Inside Corner Joint, Horizontal (2F) Position
10. Fillet Weld, Lap Joint, Vertical (3F) Position
11. Fillet Weld, Inside Corner Joint, Vertical (3F) Position
12. Square Groove Weld, Butt Joint, Vertical (3G) Position
13. Introduction to Oxyacetylene Flame Cutting
14. Standard Destructive Test, Visual Inspection & Guided Bend Test
15. Square Groove Weld, Butt Joint, Flat (1G) Position
16. Square Groove Weld, Butt Joint, Overhead (4G) Position
17. Square Groove Weld, Butt Joint, Horizontal (2G) Position
18. Application of Fuel Gases
20. Square-Groove, Bevel & Hole Cuts - Visual Inspection
21. Single V-Groove Weld, Butt Joint, Vertical (3G) Position
22. Single V-Groove Weld, Butt Joint, Flat (1G) Position
23. Single V-Groove Weld, Butt Joint, Overhead (4G) Position
24. Single V-Groove Weld, Butt Joint, Horizontal (2G) Position
25. Single V-Groove Weld, Butt Joint, (5G) Position, 2" Pipe
27. Introduction to Soldering, Brazing & Braze Welding
28. Fillet Weld, Lap Joint, Square-Groove, Butt Joint, Braze Weld, Horizontal (2F) & Flat (1G) Position
29. Socket Joint, Brazed Copper (2F) Position
30. Socket Joint, Brazed Copper (5F) Position

### Gas Tungsten Arc Welding - Shielded Metal Arc Welding 6-Inch Pipe

<table>
<thead>
<tr>
<th>Complete Course: 2 DVDs (1 hr. 57 min); 1 Instructor Guide; 2 written tests, 50 copies each</th>
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<tr>
<td><strong>ITEM NO.</strong> DV26</td>
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</table>

**Topics**

1. Gas Tungsten Arc Welding, Shielded Metal Arc Welding 6" Pipe - Course Overview
2. Introduction to Gas Tungsten Arc Welding
3. Safety & Health of Welders
4. Preparation & Assembly of an Open Root Pipe Joint
5. Single V-Groove Weld, Butt Joint, (5G) Pipe
6. Single V-Groove Weld, Butt Joint, (5G) Pipe, Destructive Test
7. Single V-Groove Weld, Butt Joint, (2G) Pipe
9. Stainless Steel Pipe Welding
10. Preparation & Assembly of a Stainless Steel Pipe Joint
12. Joint Design for Gas Tungsten Arc Welding Pipe & Tubing
13. Preparation & Assembly of a Pipe Joint with Consumable Insert
15. Pipe Weld Quality

<table>
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<tr>
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<th>Item No.</th>
<th>List Price</th>
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<tr>
<td>Complete GTAW-SMAW Pipe</td>
<td>DV26</td>
<td>$1,125.00</td>
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<tr>
<td>2 written tests, 50 copies ea.</td>
<td>V26.41</td>
<td>$30.00</td>
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<tr>
<td>Instructor guide*</td>
<td>V26.40</td>
<td>$59.00</td>
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</table>
*Includes 1 student workbook, 1 technical guide & answer keys for tests
| Site License | V26.50 | $500.00 |

---

To order, use form on page 17, Call 800.332.9448 Ext. 9509 or visit www.welding.org
### Welding Procedures & Qualification

**Complete Course:** 1 DVD (26 min); 1 Instructor Guide; 1 written test, 50 copies  
**ITEM NO.** DV86.3

**Topics**
1. Purpose of Welding Procedures & Qualification  
2. Welding Procedure Specifications  
3. Procedure Qualification Records  
4. Performance Qualification  
5. Maintaining Qualification Records

<table>
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<tr>
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<td>V86.83</td>
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*Includes 1 student workbook, 1 technical guide & answer keys for test

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### Welding Discontinuities & Defects

**Complete Course:** 1 DVD (1 hr. 12 min); 1 Instructor Guide; 1 written test, 50 copies  
**ITEM NO.** DV86.4

**Topics**
1. Weld Inspector Responsibilities Related to Discontinuities & Defects  
2. Identification & Definition of Weld Discontinuities & Defects  
3. Common Causes of Discontinuities related to Shape, Size & Contour  
4. Common Causes of Discontinuities related to Internal Inconsistencies & Weld Metal Irregularities  
5. Common Causes of Discontinuities related to Weld & Base Metal Properties

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*Includes 1 student workbook, 1 technical guide & answer keys for test

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### Destructive Testing Methods

**Complete Course:** 1 DVD (43 min); 1 Instructor Guide; 1 written test, 50 copies  
**ITEM NO.** DV86.5

**Topics**
1. Introduction to Destructive Testing  
2. Tensile Tests  
3. Impact Tests  
4. Guided Bend Tests  
5. Nick Break Tests  
6. Fillet Weld Break Tests  
7. Etch Tests

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<tr>
<td>1 written test, 50 copies</td>
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*Includes 1 student workbook, 1 technical guide & answer keys for test

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### Nondestructive Testing Methods

**Complete Course:** 1 DVD (45 min); 1 Instructor Guide; 1 written test, 50 copies  
**ITEM NO.** DV86.6

**Topics**
1. Introduction to Nondestructive Testing  
2. Principles of Visual Inspection  
3. Principles of Liquid Penetrant Testing  
4. Principles of Magnetic Particle Testing  
5. Principles of Ultrasonic Testing  
6. Principles of Radiographic Testing

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<td>1 written test, 50 copies</td>
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*Includes 1 student workbook, 1 technical guide & answer keys for test

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### Student Workbooks

Student Workbooks are listed on Page 12

To order, use form on page 17, Call **800.332.9448** Ext. 9509 or visit [www.welding.org](http://www.welding.org)
Common Arc Welding Processes

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Complete Course: 2 DVDs (2 hrs. 10 min); 1 Instructor Guide; 2 written tests, 50 copies each</td>
<td>DV85</td>
<td>$500.00</td>
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Topics
1. Introduction to Common Arc Welding Processes
2. Safety and Health of Welders
3. Introduction to Shielded Metal Arc Welding
4. SMAW Electrode Selection
5. Introduction to Gas Metal Arc Welding
6. GMAW Metal Transfer and Shielding Gases
7. Introduction to Flux Cored Arc Welding
8. FCAW Electrode Classification and Selection
9. Introduction to Gas Tungsten Arc Welding
10. The Essentials of GTAW

Arc Welding Safety

<table>
<thead>
<tr>
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<th>Item No.</th>
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<tbody>
<tr>
<td>1 DVD (11 min)</td>
<td>DV91</td>
<td>$85.00</td>
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Covers the following areas of arc welding safety:
- Arc Radiation
- Air Contamination
- Compressed Gases
- Cleaning
- Electric Shock

<table>
<thead>
<tr>
<th>Product</th>
<th>Item No.</th>
<th>List Price</th>
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</thead>
<tbody>
<tr>
<td>Safety and Health of Welders DVD (11 min.)</td>
<td>DV91.0</td>
<td>$85.00</td>
</tr>
<tr>
<td>Site License</td>
<td>V85.50</td>
<td>$500.00</td>
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Basic Metallurgy

<table>
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<tr>
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<th>Item No.</th>
<th>List Price</th>
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<tbody>
<tr>
<td>1 DVD (40 min)</td>
<td>DV40</td>
<td>$500.00</td>
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Included in complete GTAW course (DV20.0)

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<th>Item No.</th>
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<tbody>
<tr>
<td>Basic Metallurgy (DVD)</td>
<td>DV40</td>
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Symbols For Welding, Blueprint Reading, Advanced Blueprint & Pipe Layout

These courses are designed to be used with Programmed Learning Courses on page 13.

Symbols for Welding

<table>
<thead>
<tr>
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<th>Item No.</th>
<th>List Price</th>
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<tbody>
<tr>
<td>Complete Course: 1 DVD (58 min)</td>
<td>DV80</td>
<td>$500.00</td>
</tr>
<tr>
<td>1 Instructor Guide</td>
<td>V80.40</td>
<td>$59.00</td>
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</table>

Topics
1. Introduction
2. Basic Elements of the System
3. Weld Symbols for Length and Arrangement
4. Supplementary Symbols and Reference
5. Plug and Slot Welds
6. Spot Welds and Seam Welds
7. Groove Weld Symbols
8. Backing, Back, Melt-thru, and Surfacing Symbols
9. Edge Weld and Combination Weld Symbols

<table>
<thead>
<tr>
<th>Product</th>
<th>Item No.</th>
<th>List Price</th>
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<tbody>
<tr>
<td>Complete Symbols for Welding Course</td>
<td>DV80</td>
<td>$500.00</td>
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<td>V80.40</td>
<td>$59.00</td>
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</table>

* Includes 1 student workbook & answer keys for test

<table>
<thead>
<tr>
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<th>Item No.</th>
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<tbody>
<tr>
<td>Site License</td>
<td>V80.50</td>
<td>$500.00</td>
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**Blueprint Reading for Welders & Fitters**

**Complete Course: 2 DVDs (1 hr. 40 min)**
1 Instructor Guide

**Item No.** DV81

**List Price** $440.00

**Topics**
1. Introduction to blueprint reading for welders and fitters
2. Review of mathematics
3. Metrics and metric conversions
4. Review of welding symbols
5. Orthographic views
6. Standard drawing lines and symbols
7. Interpreting blueprint information
8. Surface and centerline relationships
9. Auxiliary views
10. Scale drawings
11. Dimensional tolerance and stock allowance
12. Set-up tools
13. Set-up applications

**Product** | **Item No.** | **List Price**
--- | --- | ---
Complete Blueprint Reading Course | DV81 | $500.00
Instructor guide* | V81.40 | $59.00
Site License | V81.50 | $500.00

*Includes 1 student workbook & answer keys for test

**Advanced Blueprint Reading**

**Complete Course: 1 DVD (46 min)**
1 Instructor Guide

**Item No.** DV83

**List Price** $440.00

**Topics**
1. Development of Blueprints and Drawings
2. Standards, Codes and Specifications
3. Standard Plates and Shapes
4. Blueprint Reading
5. Calculating Measurements and Common Layout Tools
6. Pipe Essentials
7. Role of the Welder in Quality and Safety
8. Fabrication Tools

**Product** | **Item No.** | **List Price**
--- | --- | ---
Complete Advanced Blueprint Reading Course | DV83 | $500.00
*Includes 1 student workbook & answer keys for test
Site License | V83.50 | $500.00

**Test are included with each student packet on page 13, not DVD programs.**

**Pipe Layout for Pipefitters & Welders**

**Complete Course: 2 DVDs (1 hr. 50 min)**
1 Instructor Guide

**Item No.** DV82

**List Price** $1,195.00

**Topics**
1. Introduction to Pipe Layout for Pipefitters and Welders
2. Review of Basic Shapes & Pipefitter Terminology
3. Review of Basic Mathematic Calculations
4. Review of Decimals
5. Review of Geometric Calculations
6. Angles & Angular Layout
7. Calculated Welded Offsets
8. Offsets Other than 45° & 90°
9. Welded Offsets
10. Multiple Turn Layouts
11. Two Piece Parallel Offsets
12. Offsets Around Obstructions
13. Rolling Offsets
14. Fabricated Tees
15. Lateral Tees
16. Circumferential Sleeves
17. Pipe Blanking
18. Elliptical Holes & Blind Flanges
19. Fabricating Brackets

**Product** | **Item No.** | **List Price**
--- | --- | ---
Complete Course | DV82 | $1,195.00
Site License – Pipe Layout for Pipefitters & Welders | V82.50 | $500.00
Additional Pipe Layout Instructor Guides | V82.40 | $59.00

**SITE LICENSE (SL)**

In response to requests to place DVD’s on company and school intranets (private networks) a site license (SL) at an additional cost of $500.00 per program is now available for each DVD program purchased from Hobart Institute of Welding Technology (HIWT). DVD programs may contain multiple DVD’s. A separate site license is required for each program you intend to distribute.

The site license, granted for a three year period, includes a signed document authorizing the electronic distribution of HIWT training materials to others within your organization’s secure network. The intranet distribution of Hobart Institute DVD’s without a site license is prohibited.
**WELDING TRAINING MATERIALS**

### Student Workbooks

Workbooks follow the DVDs topic-by-topic and take a step-by-step approach to practice sessions, featuring objectives; set-up instructions; materials and machine settings; and summaries of essential theory with lots of illustrations. All destructive tests are based on AWS®, ASME® or API codes.

**Oxyacetylene Welding**
- **P/N:** EW369OAW
- **172 pages**
- **$24.00**

Consists of 30 topics which include 19 job practice topics, 2 testing topics and 7 topics that cover essential theory. There is also course overview and introduction.

**Shielded Metal Arc Welding Basic**
- **P/N:** EW369SMAWB
- **188 pages**
- **$24.00**

Consists of 38 topics which include 29 job practice topics with 8 of these topics covering essential theory and course overview, 4 testing topics and introduction.

**Shielded Metal Arc Welding Structural**
- **P/N:** EW369SMAWA1
- **104 pages**
- **$24.00**

Consists of 19 topics which include 9 job practice, 9 essential theory topics and course overview.

**Shielded Metal Arc Welding Pre-Pipe**
- **P/N:** EW369SMAWA2
- **100 pages**
- **$24.00**

Consists of 19 topics which include 9 job practice, 9 essential theory topics and course overview.

**Shielded Metal Arc Welding 2 inch Pipe Uphill**
- **P/N:** EW369SMAWP2
- **52 pages**
- **$24.00**

Consists of 10 topics which include 5 job practice, 4 essential theory and course overview.

**Shielded Metal Arc Welding 6 inch Pipe Uphill**
- **P/N:** EW369SMAWP6
- **96 pages**
- **$24.00**

Consists of 13 topics which include 6 job practice topics, 5 essential theory and an introduction and course overview.

**Shielded Metal Arc Welding Pipe Downhill**
- **P/N:** EW369SMAWPD
- **92 pages**
- **$24.00**

Consists of 14 topics which include 6 job practice topics, 2 testing, 4 essential theory and an introduction and course overview.

**Gas Metal Arc Welding Basic**
- **P/N:** EW369GMAWB
- **96 pages**
- **$24.00**

Consists of 24 topics which include 19 job practice and 5 essential theory topics.

**Gas Metal Arc Welding Advanced**
- **P/N:** EW369GMAWA
- **77 pages**
- **$24.00**

Consists of 15 topics which include 9 job practice, 4 essential theory, an introduction and overview.

**Gas Metal Arc Welding Pipe**
- **P/N:** EW369GMAWP
- **76 pages**
- **$24.00**

Consists of 13 topics which include 6 job practice, 5 essential theory, an introduction and overview.

**Flux Cored Arc Welding**
- **P/N:** EW369FCAW
- **94 pages**
- **$24.00**

Consists of 18 topics which include 13 job practice, 4 essential theory, an introduction and overview.

**Gas Tungsten Arc Welding**
- **P/N:** EW369GTAW
- **116 pages**
- **$24.00**

Consists of 33 topics which include 23 job practice, 9 essential theory and a course overview.

**Gas Tungsten Arc Welding 2 Inch Pipe**
- **P/N:** EW369GTAWP2
- **52 pages**
- **$24.00**

Consists of 10 topics which include 5 job practice, 4 essential theory and course overview.

**Gas Tungsten Arc Welding 6 Inch Pipe**
- **P/N:** EW369GTAWP6
- **96 pages**
- **$24.00**

Consists of 15 topics which include 9 job practice, 5 essential theory and course overview.

**Gas Tungsten Titanium**
- **P/N:** EW369GTAWT
- **52 pages**
- **$24.00**

Consists of 17 topics which include 8 job practice, 4 test and course overview.

**Welding Procedures & Qualification**
- **P/N:** EW512-3
- **38 pages**
- **$24.00**

An explanation of the steps necessary to develop procedure and performance qualifications.

**Welding Discontinuities & Defects**
- **P/N:** EW512-4
- **38 pages**
- **$24.00**

An explanation of the welding discontinuities and defects in relation to welding procedure variables.

**Destructive Testing**
- **P/N:** EW512-5
- **44 pages**
- **$24.00**

An explanation of destructive testing and results obtained.

**Nondestructive Testing**
- **P/N:** EW512-6
- **34 pages**
- **$24.00**

An explanation of nondestructive testing and results obtained.
Programmed Learning Courses
from Hobart Institute of Welding Technology

These courses provide a simple yet complete method for students to learn and understand the principles of welding symbols, symbols for nondestructive examination, blueprint reading and pipe layout. Each page is designed to teach a small amount of information which is reinforced through an action/problem and self-check (see illustration at right). Each page builds for the next as the student learns in an efficient and rewarding manner.

Symbols for Welding

The symbols for welding course is based on the AWS® A2.4 Symbols for Welding and Nondestructive Examination Standard. This system of communication provides the vital link between the designer and people responsible for producing and planning welding. 3 Tests are included with each student packet. 113 pages.

<table>
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<tr>
<td>Key to tests.............................</td>
<td>EW-343</td>
<td>$9.95</td>
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Symbols for Nondestructive Examination

This course is designed to teach students how to interpret nondestructive examination symbols based on AWS 2.4. For the benefit of students not familiar with welding symbols, the first part of the course serves as an introduction. 1 Test is included with each student packet. 38 pages.

<table>
<thead>
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Blueprint Reading for Welders & Fitters

The blueprint reading for welders and fitters course contains valuable information on mathematics and metrics, Blueprint reading for the welder, blueprint reading for the fitter, setup tools, and set-up applications. 5 Tests are included with each student packet. 170 pages.

<table>
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<tr>
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Advanced Blueprint Reading

This two packet course covers the design procedure; interpretation of blueprints and shop drawings as well as applying this information; the use of measuring tools in layout and assembly; having a basic understanding of codes, specifications and standards and to be aware of the responsibility of a welder in quality control. 11 tests included with the packets.

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Pipe Layout for Pipefitters & Welders

This 10 section, self-study, programmed learning course includes; Pipefitter terminology, mathematics & plane figures, angles and angular layout, calculated welded offsets, tees, laterals & circumferential sleeves, pipe blanking, elliptical holes, brackets and pipe flanges. Based in part on Thomas W. Frankland’s “The Pipe Fitters and Pipe Welder’s Handbook,” and “Pipe Trades Pocket Manual.” 10 Tests are included with each student packet.

<table>
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<th>Item No.</th>
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<tr>
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$14.95

Coffee Mug - PI21
White silk screened 3-color logo on both sides. 8 oz.
$6.95

Logo Patch - PI11
Embroidered 3-color logo.
4" x 2-3/4"
$3.00

BSX Extreme Welders Gearpack - sgear
Designed inside and out specifically for welders.
The BSX® Gearpack includes lots of storage room and accessory/tool pockets.
$75.00

Please visit our website www.welding.org for a complete list.
HIWT COURSES

Need to update or get a refresher for your welding skills?

Individual Courses

Hobart Institute of Welding Technology offers individual courses in major arc welding processes. A list of courses is below. Visit www.welding.org – Individual Courses for a description of each course and dates offered.

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Description</th>
<th>Book Fees</th>
<th>Tuition</th>
</tr>
</thead>
<tbody>
<tr>
<td>WTB027</td>
<td>Welding Technology &amp; Blueprint Reading (2 weeks)</td>
<td>$ 55.00</td>
<td>$ 925.00</td>
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<tr>
<td>WTB028</td>
<td>Advanced Blueprint Reading (2 weeks)</td>
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<td>OAW001</td>
<td>Oxyacetylene Welding, Cutting, &amp; Brazing (2 weeks)</td>
<td>$ 35.00</td>
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<tr>
<td>SMA002</td>
<td>Shielded Metal Arc Welding Basic (4 weeks)</td>
<td>$ 35.00</td>
<td>$ 1,700.00</td>
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<td>SMA003</td>
<td>Shielded Metal Arc Welding Structural Advanced (4 weeks)</td>
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<td>SMA006</td>
<td>Shielded Metal Arc Welding 6” Pipe 2G &amp; 5G Uphill (4 weeks)</td>
<td>$ 15.00</td>
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<tr>
<td>SMA106</td>
<td>Shielded Metal Arc Welding 6” Pipe 6G Uphill (2 weeks)</td>
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<tr>
<td>SMA107</td>
<td>Shielded Metal Arc Welding 2” Pipe 6G Uphill (2 weeks)</td>
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<tr>
<td>SMA007</td>
<td>Shielded Metal Arc Welding Pipe Downhill (2 weeks)</td>
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<td>PLF026</td>
<td>Pipe Layout for Pipefitters &amp; Welders (2 weeks)</td>
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<td>GTA008</td>
<td>Gas Tungsten Arc Welding Basic (2 weeks)</td>
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<td>GTA109</td>
<td>Gas Tungsten Arc Welding Stainless &amp; Titanium (1 week)</td>
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<td>GTA110</td>
<td>Gas Tungsten Arc Welding Aerospace (2 weeks)</td>
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<tr>
<td>GTA108</td>
<td>Gas Tungsten Arc Welding 2” Pipe (2 weeks)</td>
<td>$ 15.00</td>
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<tr>
<td>GTA111</td>
<td>Gas Tungsten Arc Welding Stainless Steel Pipe (2 weeks)</td>
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<td>GTA009</td>
<td>Gas Tungsten Arc/Shielded Metal Arc Welding 6” (4 weeks)</td>
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<td>GMA010</td>
<td>Gas Metal Arc Welding Basic (2 weeks)</td>
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<td>$ 950.00</td>
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<td>*GMA016</td>
<td>Gas Metal Arc Welding Advanced (Jan-May) (1 week)</td>
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<td>Gas Metal Arc Welding Advanced (June-Dec) (2 weeks)</td>
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<td>*GMA013</td>
<td>Gas Metal Arc Welding Pipe (Jan-May) (1 week)</td>
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<td>GMA018</td>
<td>Gas Metal Arc Welding Pipe (June-Dec) (2 weeks)</td>
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<td>FCA015</td>
<td>Flux Cored Arc Welding (2 weeks)</td>
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<tr>
<td>WEL530</td>
<td>Weldability of Metals, Ferrous &amp; Nonferrous</td>
<td>$ 45.00</td>
<td>$ 700.00</td>
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* The one week course GMA016 and GMA013 will be replaced with the two week courses GMA017 and GMA018

Technical Training Courses

HIWT’s Technical Training Courses are designed for welding professionals of all levels seeking to take their education to the next level. These courses offer CEUs toward the hours needed to maintain certifications, as well as expand knowledge on welding processes, visual inspection of welds and nondestructive testing of welds.

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Description</th>
<th>Tuition</th>
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<tbody>
<tr>
<td>VI400</td>
<td>Fundamentals of Visual Inspection (2 days)</td>
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<td>NW515</td>
<td>Welding for the Non-Welder (4 days)</td>
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<td>AWI520</td>
<td>Arc Welding Inspection (1 week)</td>
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<td>LP800</td>
<td>Liquid Penetrant &amp; Magnetic Particle Inspection (1 week)</td>
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<tr>
<td>CWS550</td>
<td>Preparation for AWS® CWS Examination Course (4 days)</td>
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<tr>
<td>CWI540</td>
<td>Preparation for AWS® CWI® Certified Welding Inspector Examination Course (2 weeks)</td>
<td>$1700.00</td>
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<tr>
<td>RCW545</td>
<td>Preparation for Recertification of CWI® Course (1 week)</td>
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<tr>
<td>CWI540-C</td>
<td>Preparation for AWS® CWI® Code Endorsement (2 days)</td>
<td>$500.00</td>
</tr>
</tbody>
</table>
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