

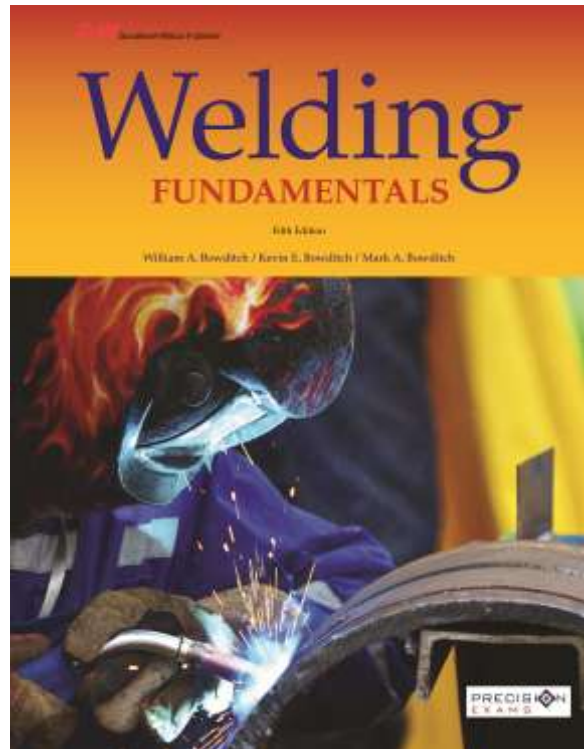
Correlation of
***Welding Fundamentals*, by Bowditch**
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to
Precision Exams Welding Technician Standards

Goodheart-Willcox is pleased to partner with Precision Exams by correlating *Welding Fundamentals* to their Welding Technician standards. Precision Exams standards and Career Skills Exams were created in concert with industry and subject matter experts to match real-world job skills and marketplace demands. Students who pass the exam and performance portion of the exam can earn a Career Skills Certification.

The correlation chart below lists the Standards, Objectives, and Indicators for the Welding Technician exam in the left column. Corresponding content from *Welding Fundamentals* that can be used by a student to help achieve the standard, objective, or indicator is listed in the right column.

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Standards / Objectives / Indicators	Textbook Pages
Standard 1: Understand Welding Orientation.	
Objective 1. Identify welding processes.	35–42; 128; 210–212; 278; 351; 480; 538–547
Objective 2. Prepare time or job cards, reports, or records.	82–86
Objective 3. Follow verbal instructions to complete work assignments.	6–7; 9; 20
Objective 4. Follow written details to complete work assignments.	6–7; 9; All textbook exercises.
Standard 2: Understand and Use Welding Safety and First Aid.	
Objective 1. Complete a student safety pledge (disclosure statement).	19–31
Objective 2. Respond to first aid requirements.	24

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Standards / Objectives / Indicators	Textbook Pages
Objective 3. Follow safe practices.	20–31; 137–139; 147; 168–169; 186; 223; 242; 287; 292; 341; 355–356; 360; 370–372; 453–454
Objective 4. Perform housekeeping duties.	22–23
Objective 5. Successfully complete safety tests on equipment use.	19–31
Standard 3: Identify Welding Tools and Equipment.	
Objective 1. Identify basic welding hand tools (e.g., safety glasses, welding helmet, chipping hammer, etc.).	98; 137–139; 370–372
Objective 2. Identify basic power tools and equipment (e.g., shielded metal arc welder, gas metal arc welder, bench grinder, etc.).	144–145; 216–218; 278–279; 300; 337; 401–403; 480–487
Standard 4: Use Basic Math and Measuring Skills.	
Objective 1. Perform basic math conversions from fractions to decimals.	69–70
Objective 2. Read and correctly use a tape measure, rule, and square.	76–77
Objective 3. Perform basic layout techniques.	78–86; 98–99
Standard 5: Read and Interpret Welding Blueprints.	
Objective 1. Apply information found in the information block of the drawing.	110
Objective 2. Identify basic views used in blueprints, including assembly, detail, and fit-up drawings.	108–109
Objective 3. Identify common types of lines used in blueprints, including object, hidden, center, and construction lines.	108–123
Standard 6: Identify and Apply Basic Welding Symbols.	
Objective 1. Identify and interpret basic welding symbols (e.g., square groove weld, fillet weld, field weld, reference line, etc.).	110–123
Objective 2. Draw welding symbols for given specifications.	110–123
Objective 3. Interpret a welding print and welding procedure specifications.	110–123; 159–160; 575–579
Standard 7: Use Shielded Metal Arc Welding (SMAW) Processes.	
Objective 1. Set up for SMAW operations on carbon steel.	147–148; 159–161; 168–169
Objective 2. Start and restart an arc and run a bead on carbon steel.	169–176; Exercise 12-1, page 176

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Standards / Objectives / Indicators	Textbook Pages
Objective 3. Build a weld pad on carbon steel in the flat position.	201–204; Exercise 14-1, page 204
Objective 4. Make 1F (flat position-fillet weld) welds on carbon steel.	176–179; Exercise 12-2, pages 177–179
Objective 5. Make 2F (horizontal position-fillet weld) welds on carbon steel.	187–188; Exercise 13-1, page 188; Exercise 13-2, page 188
Objective 6. Make 1G (flat position-groove weld) welds on carbon steel.	179–180; Exercise 12-3, page 180
Objective 7. Make 2G (horizontal position-groove weld) welds on carbon steel.	189; Exercise 13-3, page 190
Standard 8: Use Manual Oxy-Fuel Gas Cutting Processes.	
Objective 1. Perform safety inspections of equipment and accessories.	355–356; 360; 380; 382–384
Objective 2. Set up for manual oxy-fuel gas cutting operations on carbon steel.	378–389; 394–395
Objective 3. Perform straight cutting operations on carbon steel.	395–400; Exercise 26-1, pages 399–400; Exercise 26-2, page 400
Objective 4. Perform shape-cutting operations on carbon steel.	395–400
Objective 5. Perform bevel-cutting operations on carbon steel.	399; Exercise 26-3, page 401
Objective 6. Pierce a hole through a carbon steel plate.	394–397
Standard 9: Use Gas Metal Arc Welding (GMAW) Processes.	
Objective 1. Set up for GMAW operations on carbon steel.	230–232; 234–242; 248–250
Objective 2. Start and restart an arc and backfill at the edge while running a bead on carbon steel.	250–253, Exercise 17-1
Objective 3. Use Short Circuit Transfer welding process to make 1F (flat position-fillet weld) welds on carbon steel.	253–254, Exercises 17-2 and 17-3
Objective 4. Use Short Circuit Transfer welding process to make 2F (horizontal position-fillet weld) welds on carbon steel.	264–266, Exercise 18-2
Objective 5. Use Short Circuit Transfer welding process to make 1F (flat position-fillet weld) multi-pass weld on carbon steel.	268, Exercise 18-4
Objective 6. Use Short Circuit Transfer welding process to make 1G (flat position-groove weld) welds on carbon steel.	255–256, Exercise 17-4

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Standards / Objectives / Indicators	Textbook Pages
Objective 7. Use Short Circuit Transfer welding process to make 2G (horizontal position-groove weld) welds on carbon steel.	266–267, Exercise 18-2