

Introduction to Metals (2013)

Demonstrate employability skills required by business and industry AC-IM-1

- 1 Communicate effectively through writing, speaking, listening, reading, and interpersonal abilities.** AC-IM-1.1
- 2 Demonstrate creativity by asking challenging questions and applying innovative procedures and methods.** AC-IM-1.2
- 3 Exhibit critical thinking and problem solving skills to locate, analyze and apply information in career planning and employment situations** AC-IM-1.3
- 4 Model work readiness traits required for success in the workplace including integrity, honesty, accountability, punctuality, time management, and respect for diversity** AC-IM-1.4
- 5 Apply the appropriate skill sets to be productive in a changing, technological, diverse workplace to be able to work independently and apply team work skills.** AC-IM-1.5
- 6 Present a professional image through appearance, behavior and language.** AC-IM-1.6

Explore the history of the machining, welding, and sheet-metal trade AC-IM-2

- 1 Research and describe the history of the machining, welding, and sheet metal trade by utilizing technology, collaboration, and other sources** AC-IM-2.1
- 2 Describe the history of the machining, welding, and sheet-metal trade through group discussions and written summary or presentation.** AC-IM-2.2

Demonstrate knowledge and practice of metals safety. AC-IM-3

- 1 Identify and explain the common hazards in machining, sheet metal, and welding.** AC-IM-3.1
- 2 Demonstrate basic knowledge of Occupational Safety and Health Administration (OSHA), and the regulations related to preventive measures for personal safety** AC-IM-3.2
- 3 Demonstrate the proper use and care of Personal Protection Equipment (PPE) used in machining, sheet metal, and welding.** AC-IM-3.3
- 4 Demonstrate the safe use of equipment in the metals laboratory.** AC-IM-3.4

Demonstrate proficiency in the use of hand and

- 1 Demonstrate knowledge of proper care, maintenance, and safe use of hand and power tools specific to the metals trade** AC-IM-4.1

power tools specific to the trade AC-IM-4

2 Demonstrate proficiency in the techniques of power and hand tools specific to the metals trade. AC-IM-4.2

Demonstrate the ability to use measuring instruments specific to the metals trade. AC-IM-5

1 Demonstrate proficiency in measuring work pieces with the English and metric system scales. AC-IM-5.1

2 Demonstrate proficiency in the use of measuring tools used in the metals trade including but not limited to fillet weld gauge, caliper, micrometer, tape measure, divider, protractor, angle finder, etc AC-IM-5.2

3 Demonstrate proficiency in the proper care, cleaning, and storage of measuring instruments. AC-IM-5.3

Demonstrate and explain the ability to safely set up and operate basic equipment for welding and cutting specific to the metal trade AC-IM-6

1 Identify and explain the use of oxyfuel cutting equipment. AC-IM-6.1

2 Properly set up oxyfuel equipment for acetylene and alternate fuel gases (i.e. propane). AC-IM-6.2

3 Safely perform basic cuts, straight lines, arches, and piercing holes using oxyfuel equipment AC-IM-6.3

4 Identify and explain the Shielded Metal Arc Welding (SMAW) process AC-IM-6.4

5 Demonstrate proficiency in safely setting up SMAW equipment and welding continuous beads AC-IM-6.5

6 Identify and explain the Gas Metal Arc Welding (GMAW) process AC-IM-6.6

7 Demonstrate proficiency in safely setting up GMAW equipment and welding continuous beads. AC-IM-6.7

Demonstrate the ability to perform basic layout for parallel line development. AC-IM-7

1 Demonstrate proficiency in the selection and use of layout tools for parallel line development AC-IM-7.1

2 Demonstrate proficiency in the selection and use of hand tools and equipment for parallel line development. AC-IM-7.2

Demonstrate and explain the ability to perform basic layout for machined projects AC-IM-8

1 Identify and explain the use of a conventional and Computer-Controlled Shaping Machine (CNC) machining equipment used in current manufacturing. AC-IM-8.1

2 Demonstrate proficiency in the selection and use of basic layout tools used in the machining trade AC-IM-8.2

3 Demonstrate proficiency in the selection and use of machine shop equipment to produce basic layout projects AC-IM-8.3

Examine how SkillsUSA is a co-curricular part of career and technical education through leadership development, school and community service projects, and competitive events AC-IM-9

- 1 Explain the purpose, mission, objectives, motto, colors, official dress and other distinguishing characteristics of SkillsUSA.** AC-IM-9.1

- 2 Explain how participation in SkillsUSA can promote lifelong responsibility for community service, professional growth and development.** AC-IM-9.2

- 3 Explore the impact and opportunities that SkillsUSA can develop to bring business and industry together with education in a positive working relationship through innovative leadership and career development programs** AC-IM-9.3

- 4 Explore the local, state, and national opportunities available to students through participation in SkillsUSA, including but not limited to conferences, competitions, community service, philanthropy, and other SkillsUSA activities.** AC-IM-9.4