

Manufacturing Production - Metals

Apply safety principles, practices, philosophy, and guidelines to the work environment. [STS.HS.24.1](#)

- a** Complete applicable safety assessment with 100% accuracy. [STS.HS.24.1.A](#)
- b** Employ appropriate Personal Protective Equipment (PPE) while in the lab setting. [STS.HS.24.1.B](#)
- c** Employ eye protection in compliance with Neb. Rev. Statute 79–715. [STS.HS.24.1.C](#)
- d** Employ the safe application of tools and machines. [STS.HS.24.1.D](#)
- e** Explain the main hazards that are possible in the lab setting. [STS.HS.24.1.E](#)
- f** Demonstrate proper handling and storing of materials and chemicals. [STS.HS.24.1.F](#)

Execute accurate measurements using metals measurement and layout tools. [STS.HS.24.2](#)

- a** Identify types of metals measurement and layout tools. [STS.HS.24.2.A](#)
- b** Categorize metals measurement and layout tools by use. [STS.HS.24.2.B](#)
- c** Demonstrate the accurate use of measurement and layout tools to 0.010” or 0.001” precision or 1mm precision. [STS.HS.24.2.C](#)

Solve math functions and formulas to complete metals job/workplace tasks. [STS.HS.24.3](#)

- a** Identify whole numbers, decimals, fractions, and complex numbers. [STS.HS.24.3.A](#)
- b** Apply basic arithmetic operations. [STS.HS.24.3.B](#)
- c** Solve decimal and fraction conversions. [STS.HS.24.3.C](#)

Identify career opportunities in the metals manufacturing industry. [STS.HS.24.4](#)

- a** Describe work behaviors needed to be employable. [STS.HS.24.4.A](#)
- b** Describe appropriate work behavior that meets or exceeds metals manufacturing industry standards. [STS.HS.24.4.B](#)
- c** Identify the education, certification, or licensure required in metals manufacturing careers. [STS.HS.24.4.C](#)

d Identify the value that may be added to the community by metals manufacturing professionals. STS.HS.24.4.D

e Identify the industry standard compensation for a metals manufacturing professional. STS.HS.24.4.E

Demonstrate use of metal manufacturing communications. STS.HS.24.5

a Define metal manufacturing terminology. STS.HS.24.5.A

b Estimate metal manufacturing timelines based on criteria. STS.HS.24.5.B

c Demonstrate business and interpersonal communication appropriate to the work environment. STS.HS.24.5.C

Describe the materials, tools, machines, and processes required to manufacture a metal product. STS.HS.24.6

a Identify the characteristics, properties, and origin of diverse metals. STS.HS.24.6.A

b Differentiate between additive and subtractive manufacturing. STS.HS.24.6.B

c Categorize fasteners by their industry standard applications. STS.HS.24.6.C

d Differentiate between various types of mechanical fasteners. STS.HS.24.6.D

e Determine feed rate and speed settings for a material and process. STS.HS.24.6.E

f Explain the operation and application of common industry chemicals. STS.HS.24.6.F

g Assess potential environmental and health impacts of using specific materials and/or processes. STS.HS.24.6.G

h Estimate amount of materials and supplies needed for a product. STS.HS.24.6.H

i Determine the correct tools, machines and processes needed to produce a specific metal product. STS.HS.24.6.I

Produce a production-level metalworking project. STS.HS.24.7

a Interpret plans, drawings, and specifications to process materials. STS.HS.24.7.A

b Coordinate the standard operation and application of tools and machines along the manufacturing process. STS.HS.24.7.B

c Apply the type of materials, processes, and finishes required to manufacture a specific metal product. STS.HS.24.7.C

d Critique a finished product. STS.HS.24.7.D

e Appraise the manufacturing process for streamlining opportunities. STS.HS.24.7.E
