

# Advanced Manufacturing & Fabrication - Woods

Apply safety principles, practices, philosophy, and guidelines to the work environment. [STS.HS.4.1](#)

- a** Complete applicable safety assessment with 100% accuracy. [STS.HS.4.1.A](#)
- b** Employ appropriate Personal Protective Equipment (PPE) while in the lab setting. [STS.HS.4.1.B](#)
- c** Employ eye protection in compliance with Neb. Rev. Statute 79–715. [STS.HS.4.1.C](#)
- d** Employ the safe application of tools and machines. [STS.HS.4.1.D](#)
- e** Explain the main hazards that are possible in the lab setting. [STS.HS.4.1.E](#)
- f** Demonstrate proper handling and storing of materials and chemicals. [STS.HS.4.1.F](#)

Execute accurate measurements using precision wood measurement tools. [STS.HS.4.2](#)

- a** Identify types of precision measurement tools. [STS.HS.4.2.A](#)
- b** Categorize precision measurement tools by use. [STS.HS.4.2.B](#)
- c** Differentiate between measurement tools and layout tools. [STS.HS.4.2.C](#)
- d** Demonstrate the accurate use of measurement and layout tools to 1/64" precision. [STS.HS.4.2.D](#)
- e** Demonstrate the accurate use of measurement and layout tools to 0.5mm precision. [STS.HS.4.2.E](#)

Solve math functions and formulas to complete woodworking job or workplace tasks. [STS.HS.4.3](#)

- a** Identify whole numbers, decimals, fractions, and complex numbers. [STS.HS.4.3.A](#)
- b** Apply intermediate arithmetic operations. [STS.HS.4.3.B](#)
- c** Apply basic geometric operations. [STS.HS.4.3.C](#)
- d** Solve decimal or fraction conversions. [STS.HS.4.3.D](#)
- e** Solve metric or United States Customary System (USCS) conversions. [STS.HS.4.3.E](#)

**Identify career opportunities in the wood manufacturing industry.** STS.HS.4.4

- a Describe work behaviors needed to be employable.** STS.HS.4.4.A
- b Employ appropriate work behavior that meets or exceeds wood industry standards.** STS.HS.4.4.B
- c Explain the required education, certification, or licensure needed for a wood manufacturing career.** STS.HS.4.4.C
- d Analyze the value that may be added to the community by manufacturing professionals.** STS.HS.4.4.D
- e Explain the industry standard compensation for a wood manufacturing professional.** STS.HS.4.4.E

**Apply manufacturing communications.** STS.HS.4.5

- a Define wood manufacturing terminology.** STS.HS.4.5.A
- b Generate a wood project proposal.** STS.HS.4.5.B
- c Estimate manufacturing timelines based on criteria.** STS.HS.4.5.C
- d Utilize business and interpersonal communication appropriate to the work environment.** STS.HS.4.5.D

**Assess the materials, tools, machines, and processes required to manufacture a wood product.** STS.HS.4.6

- a Identify the characteristics, properties, and origin of softwoods.** STS.HS.4.6.A
- b Identify the characteristics, properties, and origin of hardwoods.** STS.HS.4.6.B
- c Differentiate additive and subtractive manufacturing.** STS.HS.4.6.C
- d Identify fasteners by their industry standard applications.** STS.HS.4.6.D
- e Differentiate between various types of mechanical and chemical fasteners.** STS.HS.4.6.E
- f Estimate amount of materials and supplies needed for a product.** STS.HS.4.6.F
- g Determine feed rate and speed settings for a material and process.** STS.HS.4.6.G
- h Explain the operation and application of common wood industry finishes.** STS.HS.4.6.H
- i Assess potential environmental and health impacts of using specific materials or processes.** STS.HS.4.6.I
- j Determine the correct tools, machines, and processes needed to produce a specific wood product.** STS.HS.4.6.J

**Manufacture a custom-level product that uses**

- a Interpret plans, drawings, and specifications to process materials.** STS.HS.4.7.A

**wood as its primary material.** STS.HS.4.7

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- b Coordinate the standard operation and application of tools and machines along the manufacturing process.** STS.HS.4.7.B
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- c Plan and apply the type of materials, processes, and finishes required to manufacture a specific product.** STS.HS.4.7.C
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- d Critique a finished product.** STS.HS.4.7.D
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- e Appraise the manufacturing process for streamlining opportunities.** STS.HS.4.7.E