

Engineering Design and Systems Thinking

Apply safety principles, practice, philosophy, and guidelines to the work environment. [STS.HS.14.1](#)

- a** Complete applicable safety assessment with 100% accuracy. [STS.HS.14.1.A](#)
- b** Employ eye protection in compliance with Neb. Rev. Statute 79-715. [STS.HS.14.1.B](#)
- c** Employ appropriate Personal Protective Equipment (PPE) while in the lab setting. [STS.HS.14.1.C](#)
- d** Employ the safe application of tools and machines. [STS.HS.14.1.D](#)
- e** Explain the main hazards that are possible in the lab setting. [STS.HS.14.1.E](#)
- f** Demonstrate proper handling and storing of materials. [STS.HS.14.1.F](#)

Execute accurate measurements using measurement tools commonly used in engineering. [STS.HS.14.2](#)

- a** Identify types of engineering measurement tools. [STS.HS.14.2.A](#)
- b** Categorize engineering measurement tools by use. [STS.HS.14.2.B](#)
- c** Demonstrate the accurate use of engineering measurement and layout tools to 1/16" precision. [STS.HS.14.2.C](#)

Solve math functions and formulas to complete engineering job/workplace tasks. [STS.HS.14.3](#)

- a** Identify whole numbers, decimals, fractions, and complex numbers. [STS.HS.14.3.A](#)
- b** Apply basic arithmetic operations. [STS.HS.14.3.B](#)
- c** Solve decimal or fraction conversions. [STS.HS.14.3.C](#)

Compare the primary engineering branches. [STS.HS.14.4](#)

- a** Summarize each branch of engineering. [STS.HS.14.4.A](#)
- b** Compare the engineering branches. [STS.HS.14.4.B](#)

Explain engineering systems thinking. [STS.HS.14.5](#)

- a** Define “system” in an engineering context. [STS.HS.14.5.A](#)
- b** Explain a current system in an engineering context. [STS.HS.14.5.B](#)

Produce an engineered solution. STS.HS.14.6

a Identify engineering principles needed for a solution. STS.HS.14.6.A

b Apply engineering principles. STS.HS.14.6.B

c Identify engineering processes needed for a solution. STS.HS.14.6.C

d Apply engineering processes. STS.HS.14.6.D

e Apply task specific mathematical concepts. STS.HS.14.6.E

f Apply task specific scientific concepts. STS.HS.14.6.F

g Demonstrate proper use of engineering tools and software. STS.HS.14.6.G