

# Engineering Problem-Solving

Apply safety principles, practices, philosophy, and guidelines to the work environment. [STS.HS.15.1](#)

- a** Complete applicable safety assessment with 100% accuracy. [STS.HS.15.1.A](#)

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- b** Employ eye protection in compliance with Neb. Rev. Statute 79–715. [STS.HS.15.1.B](#)

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- c** Employ appropriate Personal Protective Equipment (PPE) while in the lab setting. [STS.HS.15.1.C](#)

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- d** Employ the safe application of tools and machines. [STS.HS.15.1.D](#)

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- e** Explain the main hazards that are possible in the lab setting. [STS.HS.15.1.E](#)

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- f** Demonstrate proper handling and storing of materials. [STS.HS.15.1.F](#)

Describe engineering as a profession. [STS.HS.15.2](#)

- a** Identify opportunities and employment trends in the engineering branches. [STS.HS.15.2.A](#)

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- b** Identify training, education, certification, and licensing requirements for careers in the different engineering branches. [STS.HS.15.2.B](#)

Employ the engineering design process to solve an engineering problem. [STS.HS.15.3](#)

- a** Define an engineering problem. [STS.HS.15.3.A](#)

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- b** Research possible solutions. [STS.HS.15.3.B](#)

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- c** Design viable solutions. [STS.HS.15.3.C](#)

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- d** Identify the materials, tools, emerging technologies, and equipment needed to manufacture a solution to an engineering problem. [STS.HS.15.3.D](#)

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- e** Solve mathematical and scientific problems required to create engineering solutions. [STS.HS.15.3.E](#)

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- f** Determine structural requirements and specifications. [STS.HS.15.3.F](#)

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- g** Estimate costs for the solution. [STS.HS.15.3.G](#)

Explain professional engineering communications. [STS.HS.15.4](#)

- a** Identify a concise problem statement. [STS.HS.15.4.A](#)

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- b** Explain the use of informal and formal presentations, using appropriate media, to engage and inform audiences. [STS.HS.15.4.B](#)

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- c Explain the documentation of the design process and project work using engineering drawings, engineering standards, and documentation protocols. STS.HS.15.4.C**