

Fundamentals of Energy

Apply safety principles, practice, philosophy, and guidelines to the work environment. [STS.HS.16.1](#)

- a** Complete applicable safety assessment with 100% accuracy. [STS.HS.16.1.A](#)

- b** Employ appropriate Personal Protective Equipment (PPE) while in the lab setting. [STS.HS.16.1.B](#)

- c** Employ eye protection in compliance with Neb. Rev. Statute 79–715. [STS.HS.16.1.C](#)

- d** Employ the safe application of tools and machines. [STS.HS.16.1.D](#)

- e** Explain the main hazards that are possible in the lab setting. [STS.HS.16.1.E](#)

- f** Demonstrate proper handling and storing of materials. [STS.HS.16.1.F](#)

Determine career opportunities in the energy field. [STS.HS.16.2](#)

- a** Identify opportunities and employment trends in various energy sectors. [STS.HS.16.2.A](#)

- b** Identify the training, education, certification, and licensing requirements for energy occupation choices. [STS.HS.16.2.B](#)

- c** Identify the responsibilities of professionals in the energy industry. [STS.HS.16.2.C](#)

Summarize the history of energy generation and distribution. [STS.HS.16.3](#)

- a** Summarize the history of electric power generation and distribution. [STS.HS.16.3.A](#)

- b** Summarize the history of fluid and liquid fuel production and distribution. [STS.HS.16.3.B](#)

- c** Identify emerging trends in energy generation and distribution. [STS.HS.16.3.C](#)

Identify legal and societal influences affecting energy production and distribution. [STS.HS.16.4](#)

- a** Identify the legal factors that impact the production and distribution of energy. [STS.HS.16.4.A](#)

- b** Identify the impact society has on energy production and distribution. [STS.HS.16.4.B](#)

- c** Identify the design and project creation process for energy production and distribution. [STS.HS.16.4.C](#)

Classify the types of energy and their uses. STS.HS.16.5

- a Identify the seven forms of energy.** STS.HS.16.5.A

- b Recognize energy transformations in various settings.** STS.HS.16.5.B

- c Recognize renewable and non-renewable energy sources.** STS.HS.16.5.C

- d Identify the law of conservation of energy.** STS.HS.16.5.D

Appraise energy storage and distribution methods. STS.HS.16.6

- a Summarize the components of an energy delivery system.** STS.HS.16.6.A

- b Identify key pieces of equipment used in the distribution and storage of fluid fuels and electrical power.** STS.HS.16.6.B

- c Compare centralized power generation to distributed generation.** STS.HS.16.6.C

Apply units of measure used in the evaluation of energy production and delivery. STS.HS.16.7

- a Calculate equations using Ohm's Law.** STS.HS.16.7.A

- b Calculate equations using thermal energy formulas.** STS.HS.16.7.B

Produce an energy-related product or structure. STS.HS.16.8

- a Generate sketches and plans for an energy-related product or structure.** STS.HS.16.8.A

- b Determine structural requirements, specifications, and estimate costs of structures.** STS.HS.16.8.B

- c Execute plans for construction of energy related products or structures.** STS.HS.16.8.C