Nebraska CTE

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
	b Employ eye protection in compliance with Neb. Rev. Statute 79–715. STS.HS.15.1.B
	c Employ appropriate Personal Protective Equipment (PPE) while in the lab setting. STS.HS.15.1.C
	d Employ the safe application of tools and machines. STS.HS.15.1.D
	e Explain the main hazards that are possible in the lab setting. STS.HS.15.1.E
	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
	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
	b Research possible solutions. STS.HS.15.3.B
	c Design viable solutions. STS.HS.15.3.C
	d Identify the materials, tools, emerging technologies, and equipment needed to manufacture a solution to an engineering problem. STS.HS.15.3.D
	e Solve mathematical and scientific problems required to create engineering solutions. STS.HS.15.3.E
	f Determine structural requirements and specifications. STS.HS.15.3.F
	g Estimate costs for the solution. STS.HS.15.3.G
Explain professional engineering co	**a** Identify a concise problem statement. STS.HS.15.4.A
	b xplain the use of informal and formal presentations, using appropriate media, to ngage 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