

Food Science and Safety (2021-)

Investigate trends within the Food Science industry. [AFNR.HS.18.1](#)

- a** Identify food science career professions. [AFNR.HS.18.1.A](#)
- b** Evaluate career opportunities matched to personal life skills, talents, career goals, and local industry trends within the food science industry. [AFNR.HS.18.1.B](#)
- c** Develop an educational plan to successfully pursue a career in the food science industry. [AFNR.HS.18.1.C](#)
- d** Compare and contrast food production companies and the products they produce. [AFNR.HS.18.1.D](#)

Assess the basic principles of proper nutrition, including the identification and evaluation of the six essential nutrients needed for good health. [AFNR.HS.18.2](#)

- a** Classify nutrients as either macro or micro. [AFNR.HS.18.2.A](#)
- b** Identify the dietary roles of the six macronutrients. [AFNR.HS.18.2.B](#)
- c** Develop dietary plans based on nutritional needs. [AFNR.HS.18.2.C](#)

Evaluate the chemistry of food. [AFNR.HS.18.3](#)

- a** Differentiate between simple and complex carbohydrates and their uses in food processing. [AFNR.HS.18.3.A](#)
- b** Describe the functions of amino acids and proteins in food processing. [AFNR.HS.18.3.B](#)
- c** Describe the uses of lipids in food processing. [AFNR.HS.18.3.C](#)
- d** Identify the role of water in food processing. [AFNR.HS.18.3.D](#)

Evaluate the implications of microorganisms in food products on food processing and storage. [AFNR.HS.18.4](#)

- a** Distinguish between beneficial and harmful microorganisms and their roles in the creation or spoilage of food products. [AFNR.HS.18.4.A](#)
- b** Identify the process of creating foods utilizing the fermentation process. [AFNR.HS.18.4.B](#)
- c** Analyze conditions and factors that affect the growth of microorganisms within processing and storage facilities. [AFNR.HS.18.4.C](#)

d Determine the differences between multicellular parasites, bacteria, yeasts, molds, and viruses. [AFNR.HS.18.4.D](#)

e Determine appropriate ways to control and prevent microbial growth in food products. [AFNR.HS.18.4.E](#)

f Investigate microorganisms that cause food-borne illness in humans and how to control or eliminate them. [AFNR.HS.18.4.F](#)

Assess the physics of food production. [AFNR.HS.18.5](#)

a Describe the influence of water on food products. [AFNR.HS.18.5.A](#)

b Identify a food's viscosity/fluidity. [AFNR.HS.18.5.B](#)

c Classify foods based on their water activity. [AFNR.HS.18.5.C](#)

d Explain the difference between smoke point, flash point, and fire point when dealing with oils in processing foods. [AFNR.HS.18.5.D](#)

e Explain the science behind emulsions and their role in food processing. [AFNR.HS.18.5.E](#)

Evaluate principles and applications of food safety and sanitation. [AFNR.HS.18.6](#)

a Identify steps in the proper implementation of Hazard Analysis and Critical Control Points (HACCP) and Preventative Controls for Human Food. [AFNR.HS.18.6.A](#)

b Differentiate between Sanitation Standard Operating Procedures (SSOPs) and Good Manufacturing Practices (GMPs) and identify the purposes of each. [AFNR.HS.18.6.B](#)

c Evaluate procedures and inspection standards for sanitation in the food processing industry. [AFNR.HS.18.6.C](#)

d Analyze state and federal laws and regulations governing food inspection standards. [AFNR.HS.18.6.D](#)
