

Food Science Program of Study

Content Area: HSE

Grade Level: HS

POS: 4

HSE.HS.4.1	
Analyze criteria that customers use in the decision making process.	
HSE.HS.4.1.a	Identify a customer need and create a product/food/service to meet that need.

HSE.HS.4.2	
Identify and apply the elements of meal planning, meal preparation, and meal service.	
HSE.HS.4.2.a	Identify basic table setting and meal etiquette.

HSE.HS.4.3	
Interpret the basic principles of sanitation and safe food handling.	
HSE.HS.4.3.a	Understand basic local, state, and federal sanitation regulations as they pertain to food production and service.

HSE.HS.4.4	
Demonstrate professional food preparation techniques for all menu categories.	
HSE.HS.4.4.a	Review and apply culinary terms and abbreviations, equivalents, recipe yields, and proper measuring techniques with correct equipment (mise en place, equivalents).
HSE.HS.4.4.b	Select and explain the appropriate use and care of small appliances and equipment for specific product preparation and culinary applications.

HSE.HS.4.5	
Apply proper procedures for knife handling and knife use.	
HSE.HS.4.5.a	Identify types, use and care of knives.

HSE.HS.4.6	
Interpret the basic principles of chemistry and physics related to changes in foods and food products during preparation, processing, and preservation.	
HSE.HS.4.6.a	Recognize terminology, methods, and equipment used in the food science and technology industry.
HSE.HS.4.6.b	Practice safe laboratory and equipment use and maintenance procedures.
HSE.HS.4.6.c	Understand important chemical and physical changes that occur during food preparation.
HSE.HS.4.6.d	Conduct scientific experiments using the scientific method.
HSE.HS.4.6.e	Document experiments and maintain laboratory records.

HSE.HS.4.7	
Utilize an understanding of the basic principles of research and development, food analysis, and sensory evaluation in the field of food science and technology.	
HSE.HS.4.7.a	Understand the purpose, importance, and basic procedures of sensory evaluation experiments.

HSE.HS.4.7.b	Explain quality control, assurance standards, and the procedures for each used in research and development.
HSE.HS.4.7.c	Analyze research implications on food trends, value-added processing, genetic engineering, and irradiation.
HSE.HS.4.7.d	Determine the feasibility of improvements for ideas and concepts.
HSE.HS.4.7.e	Prepare and test formulas for developing new food products.
HSE.HS.4.7.f	Test food products by using controls, variables, and random sampling.
HSE.HS.4.7.g	Explore the global, logistical, ecological, and economic impacts of food production and packaging methods, including genetic engineering.

HSE.HS.4.8	
Explore technological advances that affect the global food supply.	
HSE.HS.4.8.a	Examine the uses of biotechnology as related to the food supply.
HSE.HS.4.8.b	Examine the uses of genetic engineering as related to the food supply.
HSE.HS.4.8.c	Examine the process of developing new products to improve the food supply.
HSE.HS.4.8.d	Examine the process of developing new food sources to improve the food supply.
HSE.HS.4.8.e	Compare food preservation technologies.
HSE.HS.4.8.f	Evaluate methods of more efficient food production.

HSE.HS.4.9	
Produce and serve flavorful, aesthetically pleasing, nutritious food.	
HSE.HS.4.9.a	Compare and contrast flavor, texture, aroma and appearance of various foods.

HSE.HS.4.10	
Demonstrate proper measurement procedures for dry and liquid ingredients.	
HSE.HS.4.10.a	Demonstrate proper measuring techniques.
HSE.HS.4.10.b	Perform scale measurements to accurately prepare and serve foods according to dietary guidelines.

HSE.HS.4.11	
Explain the scientific principles related to nutrition and food preparation.	
HSE.HS.4.11.a	Describe basic chemical reactions that happen during food preparation and their effect on nutrition.

HSE.HS.4.12	
Explain current dietary recommendations.	
HSE.HS.4.12.a	Appraise reliable sources of nutrition information.
HSE.HS.4.12.b	Describe the 6 essential nutrients and their purpose in the body.
HSE.HS.4.12.c	Summarize the digestive process.

HSE.HS.4.13	
Describe the ideas of variety, moderation and whole foods as the foundation of a healthy diet.	
HSE.HS.4.13.a	Identify nutrient dense foods.

HSE.HS.4.14	
Evaluate the Nutrition Facts label.	
HSE.HS.4.14.a	Compare and contrast food labels to determine healthier product.

HSE.HS.4.14.b	Explain the importance of the components of the Nutritional Facts Label.
HSE.HS.4.14.c	Demonstrate ability to interpret the Nutrition Facts label.

HSE.HS.4.15	
Compare and contrast personal eating habits to current USDA recommendations for a healthy diet.	
HSE.HS.4.15.a	Record and analyze foods eaten over a period of time.

HSE.HS.4.16	
Evaluate critical control points and analyze hazards from food procurement to post-preparation (HACCP).	
HSE.HS.4.16.a	Practice food safety procedures according to industry standards.
HSE.HS.4.16.b	Identify and demonstrate first-aid procedures concerning common kitchen related injuries.
HSE.HS.4.16.c	Demonstrate proper personal hygiene techniques while working in the food setting.

HSE.HS.4.17	
Employ responsible financial practices when planning meals.	
HSE.HS.4.17.a	Plan well-balanced meals using various budgetary restrictions.

HSE.HS.4.18	
Summarize best practices used to safeguard those with food allergies or intolerances.	
HSE.HS.4.18.a	Demonstrate methods used to prevent cross contamination as pertaining to food allergies.
HSE.HS.4.18.b	Compare and contrast food allergies and food intolerances.
HSE.HS.4.18.c	Describe the symptoms and treatment of an allergic reaction to food.

HSE.HS.4.19	
Demonstrate safe and efficient practices in the preparation of foods.	
HSE.HS.4.19.a	Demonstrate ability to avoid safety hazards in the kitchen environment (i.e. knife safety, fire safety, and appliance safety).

HSE.HS.4.20	
Demonstrate procedures utilized to prevent foodborne illnesses.	
HSE.HS.4.20.a	Identify characteristics and causes of foodborne illnesses.
HSE.HS.4.20.b	Identify potential hazardous foods that may cause foodborne illnesses.

HSE.HS.4.21	
Explore impacts of science and technology on nutrition and foods.	
HSE.HS.4.21.a	Define "Farm to Table".
HSE.HS.4.21.b	Identify current nutrition and food trends and issues, such as "farm to table," food availability, organic food, and holistic eating practices.

HSE.HS.4.22	
Explain how consumer demand drives product development.	
HSE.HS.4.22.a	Identify common grocery shopping strategies used by consumers.
HSE.HS.4.22.b	Identify marketing strategies used in the food industry.

<i>HSE.HS.4.22.c</i>	Compare and contrast name brand and store brand products.
<i>HSE.HS.4.22.d</i>	Explain the process of creating and launching a new food product.

HSE.HS.4.23	
Examine the relationship between convenience and nutrition.	
<i>HSE.HS.4.23.a</i>	Compare the nutritional content of processed versus whole foods.

HSE.HS.4.24	
Assess career options and employment skills required in the food and nutrition industry.	
<i>HSE.HS.4.24.a</i>	Analyze various career opportunities including roles, responsibilities, training and educational requirements, and salaries.
<i>HSE.HS.4.24.b</i>	Analyze personal attitudes, traits, and values of foodservice professionals in regards to responsibility, accountability, ethics, and effectiveness.
<i>HSE.HS.4.24.d</i>	Exhibit professional etiquette in all interactions.
<i>HSE.HS.4.24.e</i>	Create an employment portfolio for use with applying for food and nutrition internships and work-based learning opportunities.

HSE.HS.4.25	
Explain the effect of socioeconomic factors on food consumption.	
<i>HSE.HS.4.25.a</i>	Examine how the rising cost of food influences all groups.

Fundamentals of Food and Nutrition

Course Description

This course is designed to provide students with the base foundation knowledge of food selection and preparation needed to successfully fuel the human body through consumption of food and resulting food energy. With a beginning foundation of nutrition, students will learn basic preparation skills and the short-term and long-term wellness consequences as a result of nutritional intake, and exposure to careers related to the food industry.

Course Code:

090107

Endorsements to

Teach:

FACS

Programs of Study

to which this

Course applies

HSE.HS.4 Food Science
 HSE.HS.3 Nutrition and Wellness
 BMM.HS.1 Culinary Arts
 BMM.HS.2 ProStart

HSE.HS.4.2	
Identify and apply the elements of meal planning, meal preparation, and meal service.	
<i>HSE.HS.4.2.a</i>	Identify basic table setting and meal etiquette.

HSE.HS.4.4	
Demonstrate professional food preparation techniques for all menu categories.	
<i>HSE.HS.4.4.a</i>	Review and apply culinary terms and abbreviations, equivalents, recipe yields, and proper measuring techniques with correct equipment (mise en place, equivalents).
<i>HSE.HS.4.4.b</i>	Select and explain the appropriate use and care of small appliances and equipment for specific product preparation and culinary applications.

HSE.HS.4.5	
Apply proper procedures for knife handling and knife use.	
<i>HSE.HS.4.5.a</i>	Identify types, use and care of knives.

HSE.HS.4.12	
Explain current dietary recommendations.	
<i>HSE.HS.4.12.a</i>	Appraise reliable sources of nutrition information.
<i>HSE.HS.4.12.b</i>	Describe the 6 essential nutrients and their purpose in the body.
<i>HSE.HS.4.12.c</i>	Summarize the digestive process.

HSE.HS.4.13	
Describe the ideas of variety, moderation and whole foods as the foundation of a healthy diet.	
<i>HSE.HS.4.13.a</i>	Identify nutrient dense foods.

HSE.HS.4.14	
Evaluate the Nutrition Facts label.	
<i>HSE.HS.4.14.a</i>	Compare and contrast food labels to determine healthier product.
<i>HSE.HS.4.14.b</i>	Explain the importance of the components of the Nutritional Facts Label.
<i>HSE.HS.4.14.c</i>	Demonstrate ability to interpret the Nutrition Facts label.

HSE.HS.4.15	
Compare and contrast personal eating habits to current USDA recommendations for a healthy diet.	
<i>HSE.HS.4.15.a</i>	Record and analyze foods eaten over a period of time.

HSE.HS.4.16	
Evaluate critical control points and analyze hazards from food procurement to post-preparation (HACCP).	
<i>HSE.HS.4.16.b</i>	Identify and demonstrate first-aid procedures concerning common kitchen related injuries.
<i>HSE.HS.4.16.c</i>	Demonstrate proper personal hygiene techniques while working in the food setting.

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Employ responsible financial practices when planning meals.	
<i>HSE.HS.4.17.a</i>	Plan well-balanced meals using various budgetary restrictions.

HSE.HS.4.18	
Summarize best practices used to safeguard those with food allergies or intolerances.	
<i>HSE.HS.4.18.b</i>	Compare and contrast food allergies and food intolerances.
<i>HSE.HS.4.18.c</i>	Describe the symptoms and treatment of an allergic reaction to food.

HSE.HS.4.19	
Demonstrate safe and efficient practices in the preparation of foods.	
<i>HSE.HS.4.19.a</i>	Demonstrate ability to avoid safety hazards in the kitchen environment (i.e. knife safety, fire safety, and appliance safety).

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Explore impacts of science and technology on nutrition and foods.	
<i>HSE.HS.4.21.a</i>	Define "Farm to Table".
<i>HSE.HS.4.21.b</i>	Identify current nutrition and food trends and issues, such as "farm to table," food availability, organic food, and holistic eating practices.

HSE.HS.4.22	
Explain how consumer demand drives product development.	
<i>HSE.HS.4.22.a</i>	Identify common grocery shopping strategies used by consumers.

<i>HSE.HS.4.22.c</i>	Compare and contrast name brand and store brand products.
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HSE.HS.4.25

Explain the effect of socioeconomic factors on food consumption.
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<i>HSE.HS.4.25.a</i>	Examine how the rising cost of food influences all groups.
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Food Science

Course Description

Instruction which provides students with an understanding of the food science industry, food packaging/labeling, sensory evaluation of foods, marketing food products, constituents of foods, nutritive aspects of food constituents, operation of food industry, food microbiology, food processing and food science applications, and, exposure to careers related to food science.

Course Code:

090113

Endorsements to

Teach:

FACS

Programs of Study

to which this

Course applies

HSE.HS.4 Food Science

HSE.HS.4.1	
Analyze criteria that customers use in the decision making process.	
<i>HSE.HS.4.1.a</i>	Identify a customer need and create a product/food/service to meet that need.

HSE.HS.4.3	
Interpret the basic principles of sanitation and safe food handling.	
<i>HSE.HS.4.3.a</i>	Understand basic local, state, and federal sanitation regulations as they pertain to food production and service.

HSE.HS.4.6	
Interpret the basic principles of chemistry and physics related to changes in foods and food products during	
<i>HSE.HS.4.6.a</i>	Recognize terminology, methods, and equipment used in the food science and technology industry.
<i>HSE.HS.4.6.b</i>	Practice safe laboratory and equipment use and maintenance procedures.
<i>HSE.HS.4.6.c</i>	Understand important chemical and physical changes that occur during food preparation.
<i>HSE.HS.4.6.d</i>	Conduct scientific experiments using the scientific method.
<i>HSE.HS.4.6.e</i>	Document experiments and maintain laboratory records.

HSE.HS.4.7	
Utilize an understanding of the basic principles of research and development, food analysis, and sensory evaluation in the field of food science and technology.	
<i>HSE.HS.4.7.a</i>	Understand the purpose, importance, and basic procedures of sensory evaluation experiments.
<i>HSE.HS.4.7.b</i>	Explain quality control, assurance standards, and the procedures for each used in research and development.
<i>HSE.HS.4.7.c</i>	Analyze research implications on food trends, value-added processing, genetic engineering, and irradiation.

HSE.HS.4.7.d	Determine the feasibility of improvements for ideas and concepts.
HSE.HS.4.7.e	Prepare and test formulas for developing new food products.
HSE.HS.4.7.f	Test food products by using controls, variables, and random sampling.
HSE.HS.4.7.g	Explore the global, logistical, ecological, and economic impacts of food production and packaging methods, including genetic engineering.

HSE.HS.4.8	
Explore technological advances that affect the global food supply.	
HSE.HS.4.8.a	Examine the uses of biotechnology as related to the food supply.
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HSE.HS.4.22	
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Explain how consumer demand drives product development.	
<i>HSE.HS.4.22.b</i>	Identify marketing strategies used in the food industry.
<i>HSE.HS.4.22.d</i>	Explain the process of creating and launching a new food product.

HSE.HS.4.23	
Examine the relationship between convenience and nutrition.	
<i>HSE.HS.4.23.a</i>	Compare the nutritional content of processed versus whole foods.

HSE.HS.4.24	
Assess career options and employment skills required in the food and nutrition industry.	
<i>HSE.HS.4.24.a</i>	Analyze various career opportunities including roles, responsibilities, training and educational requirements, and salaries.
<i>HSE.HS.4.24.b</i>	Analyze personal attitudes, traits, and values of foodservice professionals in regards to responsibility, accountability, ethics, and effectiveness.
<i>HSE.HS.4.24.d</i>	Exhibit professional etiquette in all interactions.
<i>HSE.HS.4.24.e</i>	Create an employment portfolio for use with applying for food and nutrition internships and work-based learning opportunities.

Knowledge and Skill Statements
KSS 1 Critique dietary practices of individuals to improve health and wellness.
KSS 2 Identify trends in food, nutrition, and wellness.
KSS 3 Prioritizing customer needs in relation to industry products and services available.
KSS 4 Support the innovation and improvement of food through food science.
KSS 5 Identify food product trends and forecasting.
KSS 6 Assess nutritional practices to create food products.