

CURRICULUM OVERVIEW

Food Products and Processing Systems

Career and Technical Education Series



Table of Contents

FOOD PRODUCTS AND PROCESSING SYSTEMS COURSE OVERVIEW 1

UNIT 1: WHAT IS THE FOOD PRODUCTS AND PROCESSING SYSTEM? 2

UNIT 2: CONSUMER-DRIVEN MARKETING AND FOOD PRODUCT DEVELOPMENT 2

UNIT 3: NUTRITION, FOOD CONSUMPTION, AND DIETARY TRENDS..... 2

UNIT 4: AGRIBUSINESS MARKETING AND SALES..... 3

UNIT 5: STANDARDS, REGULATIONS, AND SAFE FOOD PRODUCTION..... 3

UNIT 6: COURSE PROJECT, REVIEW, AND EXAM 3

Food Products and Processing Systems Course Overview

Agriculture, food, and natural resources (AFNR) are central to human survival and civilization. Mankind's development, use, and stewardship of natural resources to create food products have a long and ever-changing timeline. This course explores the history and evolution of food products, along with the processing methods that have arisen to feed an ever-growing world population.

Students study specifics in a wide spectrum of food product topics, from early methods of preservation to technological advancements in packaging, regulations in labeling, and marketing trends. The course prepares students for a variety of possible educational and career pathways in the food industry. Students learn industry terminology in each area of the overall system, from "farm to fork" to vertical integration to smart packaging.

Food product systems include global and local marketing of whole and processed foods. The course investigates the economic, environmental, and nutritional benefits of the food students are eating in a series of hands-on projects that supplement the studies and assessments. Health concerns and best practices in quality assurance, inspections, and labeling are reviewed. Students learn how dietary guidelines are made and how they change with the latest research. Students track their own food intake and dietary ratios and research ingredients, processing procedures, and safe handling practices to increase their consumer awareness of food products.

Advertising, marketing, product testing, and distribution of food products comprise a huge sector of food product systems and careers. The course prepares students for further research and work experience in these lucrative fields.

- **Unit 1: What is the Food Products and Processing System?** Unit 1 starts the course with an overview of food products and processing from early civilizations to the present. Global markets and marketing needs emerge as constantly changing, and a growing population demands innovations. Methods of cultivation, preservation, preparation, and trade are examined. Key concepts and industry terminology are introduced for further examination in the course.
- **Unit 2: Consumer-Driven Marketing and Food Product Development:** Unit 2 focuses on consumer demand and how it shapes food production and processing. Communication of what consumers want drives product development and requires resources: scientists, marketers, engineers, and regulatory agencies as well as food producers and product developers. Consumers may not realize how their demands are being influenced by advertising or marketing; manufacturers who misjudge consumer demand in a new product launch often fail.
- **Unit 3: Nutrition, Food Consumption, and Dietary Trends:** Unit 3 focuses on nutrition, food consumption, and dietary trends. What we eat, and how much of each food group we eat, changes with our lifestyles and the prevailing wisdom. The unit examines trends such as whole organic foods as a reaction to nutritional failings of a processed food diet, or the growing consumer demand for gluten-free products. Obesity is another dietary trend that is studied. Portion sizes and weight outcomes are investigated and tracked in projects. The relationship between serving size and portion size nutritional information is discussed. Vocabulary associated with these topics in food is defined. Advertising influences and reactions to dietary trends are also analyzed in this unit.
- **Unit 4: Agribusiness Marketing and Sales:** Agribusiness, marketing, and sales are the focus of Unit 4. Students learn the difference between marketing and sales, and how their interrelatedness operates in the global food products industry as well as in a local market economy. Packaging evolution and technologies are important factors in both marketing and sales. Students formulate opinions creatively on the next big thing and how it might be marketed. Genetically modified organisms (GMOs), a hot topic, are given a scholarly examination in this unit.

- Unit 5: Standards, Regulations, and Safe Food Production:** Unit 5 examines standards, regulations, and safe food production. Careers in regulatory agencies, inspection, quality assurance, and processing plant management are described. The many steps in food processing that a product may go through from commodity to table include best management practices for safe handling, storage, transportation, packaging, and labeling. Students track safe-handling practices in the home, including hygiene, food storage, handling, and preparation.

Unit 1: What is the Food Products and Processing System?	
Food Products and Processing Systems	Assignments
	1. Course Overview
	2. Food Processing and Preservation Through the Ages
	3. Project: Take a Trip
	4. Adding Value
	5. Project: Making Chocolate
	6. Sustainability and Interdependence
	7. Quiz 1: Food Products and Processing
	8. Supplying the Food Chain
	9. Project: Field Trip to Local Produce Market
	10. Ice Cream Processing and Farm to Fork
	11. Project: How Peanut Butter Is Made
	12. Global Food Production and a Growing World
	13. Quiz 2: Farm to Fork and Local to Global Food Products and Processing Systems
	14. Special Project*
	15. Test
	16. Course Project Part 1: Making Your Favorite Food Better*
	17. Glossary and Credits
Unit 2: Consumer-Driven Marketing and Food Product Development	
Food Products and Processing Systems	Assignments
	1. Push and Pull Marketing
	2. Project: Push Marketing Analysis with 10 Foods
	3. Learning from Failure
	4. Project: Failure to Launch
	5. Consumer Food Trends and Marketing
	6. Quiz 1: Consumer-Driven Food Marketing
	7. From Commodity to Processed Food
	8. Project: Processed Foods Made from Basic Commodities
	9. Vertical Integration in Agriculture
	10. Project: Deconstructing Processed Foods
	11. A Food Product's Life Cycle and New Product Development
	12. Quiz 2: Local and Global Product Development
	13. Special Project*
	14. Test
	15. Course Project Part 2: Bringing Your Food Product to Market*
	16. Glossary and Credits
Unit 3: Nutrition, Food Consumption, and Dietary Trends	
Food Products and Processing Systems	Assignments
	1. FDA and Nutrition Labeling
	2. Project: Keeping a Food Log for 24 Hours
	3. Food Labeling and Dietary Guidelines
	4. Project: Pizza Party by the Nutritional Numbers
	5. Servings, Calories, and Nutrients
	6. Quiz 1: Nutrition and Labeling Requirements
	7. Overweight and Obesity Causes
	8. Project: Monitoring Weight and Food Consumption in Your Family
	9. Diet Changes and the MyPlate Dietary Guidelines
	10. Project: Interview a Dietitian or Nutritionist
	11. Advertising's Effect on Buying Choices
	12. Quiz 2: Food Consumption and Dietary Trends
	13. Special Project*
	14. Test
	15. Course Project Part 3: Health Watch*
	16. Glossary and Credits

Food Products and Processing Systems	Unit 4: Agribusiness Marketing and Sales	
	Assignments	
	1. How Is My Food Processed?	9. Project: The Next Big Thing in Food Technology
	2. Preserving Our Foods	10. Genetically Modified Organisms in Food Production
	3. Project: Investigating Ingredients in Food Products	11. Project: Food Log of GMOs in Your Diet
	4. Processed vs. Raw Foods	12. Quiz 2: Sales and AFNR Systems
	5. Project: Food Log for Whole and Processed Foods	13. Special Project*
	6. Quiz 1: AFNR Marketing	14. Test
	7. Food Packaging History and Advancements	15. Course Project Part 4: Think Globally*
	8. Advances in Food Technology	16. Glossary and Credits
	Unit 5: Standards, Regulations, and Safe Food Production	
	Assignments	
	1. Food Inspections and Foodborne Illness	9. Hand Washing and Hygiene in Food Production
	2. Project: Who's Responsible for the Safety of Your Food?	10. Project: Don Your Food Safety Inspector Hat at Home
	3. USDA Inspections and Branding	11. Recall Management
	4. Food Recall and Traceability	12. Quiz 2: Food Safety Standards and Practices
	5. Project: Follow a Food Product Through a Recall	13. Special Project*
	6. Quiz 1: Food Grading, Standards, and Inspections	14. Test
	7. Space Exploration: Its Earthly Impact on Food Safety	15. Course Project Part 5: Food Safety and Quality Assurance with Your Food Product and Career*
	8. Project: Problem Spots Making a PB&J Sandwich	16. Glossary and Credits
	Unit 6: Course Project, Review, and Exam	
	Assignments	
	1. Course Project Part 6: Your Dream Career in Food Product and Processing Systems*	2. Course Review
		3. Exam

(*) Indicates alternative assignment