

PROGRAM CONCENTRATION: Family and Consumer Science
CAREER PATHWAY: Nutrition and Food Science
COURSE TITLE: Food, Nutrition and Wellness

Food, Nutrition and Wellness is an essential course in understanding nutritional needs and food choices for optimal health of individuals across the lifespan. Interrelationships with wellness are explored. This course leads to the advanced nutrition pathway and develops a knowledge base and the skills necessary to select among alternatives in the marketplace, with an emphasis on nutrient content, the development of chronic diseases, and food safety.

FCS-FNW-1. Students will discuss basic nutrient requirements and their use in dietary planning.

- a. Define nutrition, essential and non-essential nutrients; identify and describe the six nutrient classes and their changing requirements throughout the lifespan; and identify major sources of each.
- b. Define digestion, absorption, and metabolism and relate to nutritional status.
- c. Define a calorie, compare energy sources, compute Basal Metabolic Rate, Body Mass Index, and waist to hip ratio; apply outcomes to dietary planning and selection of nutrient dense foods.
- d. Discuss malnutrition and identify characteristics of a nutritious diet [adequate, balanced, moderation (portion control/distortion), and varied].
- e. Explain Dietary Reference Intakes and describe nutrient deficiencies and toxicities with emphasis on nutritionally vulnerable groups.

ACADEMIC STANDARDS:

SB1. Students will analyze the nature of the relationships between structures and functions in living cells.

SAP4. Students will analyze the physical, chemical and biological properties of process systems as these relate to transportation, absorption and excretion, including the cardiovascular, respiratory, digestive, excretory and immune system.

ELARL5. The student participates in student-to-teacher, student-to-student and group verbal interactions.

NFCS 14.0. Demonstrate nutrition and wellness practices that enhance individual and family well-being.

FCS-FNW-2. Students will become aware of the effects of disordered eating.

- a. Examine and discuss the causes and effects of Anorexia Nervosa, Bulimia Nervosa and Binge-Eating Disorder.
- b. Identify health risks associated with Pica [Geophagia (clay), Pagophagia (ice), Amylophagia (starch), Plumbism (paint chips)].
- c. Identify nutritionally vulnerable groups: women, growing children, and cultural groups.

ACADEMIC STANDARDS:

SAP3. Students will assess the integration and coordination of body functions and their dependence on the endocrine and nervous system to regulate physiological activities.

NFCS 14.2.1. Assess the effect of nutrients on health, appearance, and peak performance.

FCS-FNW-3. Students will identify the factors that affect food choices and dietary quality.

- a. Discuss socio-cultural impacts such as race/ethnicity, region, religion, and social and personal environment and analyze the influences of demographic factors: age, gender, education level, family composition, income, and exposure to new foods.
- b. Describe the importance of sensory attributes and the influence of marketing techniques (such as packaging, advertising techniques, and physical environment) on food choices.
- c. Discuss the influence of health status and health consciousness including medical diets, food allergies and intolerances, preventive health measures, concerns about pesticides and food additives, nutrient content, and organic production on food choices.
- d. Discuss the impact of time and monetary constraints, such as family schedules and convenience foods, on dietary quality.

ACADEMIC STANDARDS:

SCSh4. Students will use tools and instruments for observing, measuring and manipulating scientific equipment and materials.

SAP4. Students will analyze the physical, chemical and biological properties of process systems as these relate to transportation, absorption and excretion, including the cardiovascular, respiratory, digestive, excretory and immune system.

SSEF1. The student will explain why limited productive resources and unlimited wants result in scarcity, opportunity costs and trade offs for individuals, businesses and governments.

SSEF5. The student will describe the roles of government in a market economy.

SSEMA1. The student will illustrate the means by which economic activity is measured.

SSWG2. The student will explain the cultural aspects of geography.

NFACS14.1. Analyze factors that influence nutrition and wellness practices across the life span.

FCS-FNW-4. Students will utilize the My Pyramid to demonstrate serving sizes and recommended daily intake of different food groups.

- a. Apply My Pyramid to the planning and selection of a nutritionally adequate and balanced diet.
- b. Explain why an active lifestyle plays an important role in My Pyramid.

- c. Visit the My Pyramid website and calculate the recommended servings for age and activity level.

ACADEMIC STANDARDS:

SCSh6. Students will communicate scientific investigations and information clearly.

NFACS14.2. Evaluate the nutritional needs of individuals and families in relation to health and wellness across the life span.

FCS- FNW-5. Students will apply the Dietary Guidelines throughout the lifespan as they relate to modern life.

- a. Discuss how maintaining a healthy weight and being physically active will promote fitness.
- b. Explain how to build a healthy base following the My Pyramid, choosing whole grains and a variety of fruits and vegetables daily, and keeping foods safe to eat.
- c. Discuss the guidelines for choosing sensibly: moderate total fat consumption, limit intake of sugars, choose and prepare foods with less salt.

ACADEMIC STANDARDS:

SCSh6. Students will communicate scientific investigations and information clearly.

ELARL5. The student participates in student-to-teacher, student-to-student and group verbal interactions.

NFACS14.2. Evaluate the nutritional needs of individuals and families in relation to health and wellness across the life span.

FCS-FNW-6. Students will demonstrate through communication and reading labels the importance of the Nutrition Facts panel and identify number of servings per container.

- a. Discuss the components of a Nutrition Facts panel: product specific information (serving size, servings per container, calories and calories from fat, nutrient amounts and percentages of the Daily Values) versus Daily Values.
- b. Identify nutrient claims and discuss related descriptive terms used for energy, fat (meat and poultry), fat and cholesterol (all products), fiber, sodium, and other (free, fresh, good source, healthy, high in, less, fewer, reduced, light, more, extra).
- c. Compare and contrast the legal requirements for labeling packaged foods, functional foods, and dietary supplements where mandatory and optional food labeling is required.
- d. Know the product information required on a packaged food label: product name, net contents, manufacturer name, contact, ingredient list.
- e. Define and compare enriched and fortified as it relates to food labels and discuss the approval process necessary for use as well as health claims.

ACADEMIC STANDARDS:

SCSh6. Students will communicate scientific investigations and information clearly.

ELA11SV2. The student formulates reasoned judgments about written and oral communication in various media genres. The student delivers focused, coherent and polished presentations that convey a clear and distinct perspective, demonstrate solid reasoning and combine traditional rhetorical strategies of narration, exposition, persuasion and description.

NFACS14.2.4. Appraise sources of food and nutrition information, including food labels, related to health and wellness.

FCS-FNW-7. Students will examine and discuss the health risks of an unhealthy lifestyle, dietary choices, and unbalanced nutritional intake.

- a. Discuss the following chronic diseases and list the symptoms and possible treatments of each: diabetes, heart disease, cancers, obesity, osteoporosis, cholesterol, and hypertension.
- b. Discuss how the effects of excessive alcohol and tobacco consumption can increase the chances for chronic diseases, including liver disease and lung disease. Explain how tobacco use can curb an appetite and how using it for that purpose can be dangerous to your health.
- c. Describe how alcohol and tobacco use can weaken bones, contribute to heart disease, cause cancers, and cause damage to the digestive tract including the accessory organs.
- d. Explain how tobacco, alcohol, smokeless tobacco, and second hand smoke can cause mouth and lung cancer and how that could interfere with a healthy diet and nutrition, increasing risk of chronic diseases.

ACADEMIC STANDARDS:

SCSh6. Students will communicate scientific investigations and information clearly.

ELARL5. The student participates in student-to-teacher, student-to-student and group verbal interactions.

ELA11SV2. The student formulates reasoned judgments about written and oral communication in various media genres. The student delivers focused, coherent and polished presentations that convey a clear and distinct perspective, demonstrate solid reasoning and combine traditional rhetorical strategies of narration, exposition, persuasion and description.

NFACS14.2.3. Assess the impact of food and diet fads, food addictions, and eating disorders on wellness.

FCS-FNW-8. Students will demonstrate that wellness and fitness are results of a well balanced diet, knowledge of nutrition, and calorie burning.

- a. Develop, in detail, appropriate exercise and fitness routines and plan a healthy diet for the different stages of the lifecycle.

- b. Explain how weight bearing exercise can help prevent osteoporosis.
- c. Participate in a sample exercise program for teenagers and explain the relationship of wellness to long term quality of life.
- d. Explain how excessive exercising can be detrimental to your health.

ACADEMIC STANDARDS:

SCSh6. Students will communicate scientific investigations and information clearly.

SAP2. Students will analyze the interdependence of the integumentary, skeletal and muscular system as these relate to the protection, support and movement of the human body.

NFACS14.2.2. Research the relationship of nutrition and wellness to individual and family health throughout the life span.

FCS-FNW-9. Students will discuss food safety in the kitchen, including cross-contamination and the risks associated with lack of human cleanliness in creating food borne illnesses.

- a. Identify and discuss the major sources of microbiological food hazards that cause food-borne illnesses: Clostridium botulism, Staphylococcus, Clostridium perfringens, Salmonella, Campylobacter jejuni, Yersina enterocolytica, Listeria, E. coli 157.
- b. Identify major non-microbial sources of food-borne illness: toxoplasma gondi, anisakis, and trichinella spiralis.
- c. Identify major reasons and likely sources of food-borne illness: meats, poultry, eggs, dairy products, and fish.
- d. Outline the FDA approval process for food additives, describe the FDA monitoring process for food additives, pesticide residues, environmental contamination and natural toxicants.

ACADEMIC STANDARDS:

SB4. Students will assess the dependence of all organisms on one another and the flow of energy and matter within their ecosystems.

NFACS14.4. Evaluate factors that affect food safety, from production through consumption.

FCS-FNW-10. Students will demonstrate safe food sanitation procedures.

- a. Examine and demonstrate safe food handling procedures, including proper temperatures, correct serving of cooked and fresh foods, and awareness of cross-contamination hazards.
- b. Practice and apply proper hand washing techniques using soaps, hand sanitizers, and personal hygienic techniques such as hand, nail, and hair care.
- c. Practice and demonstrate proper dishwashing, sanitizing, rinsing, and drying techniques.
- d. Discuss Health Department inspection procedures and regulations.

ACADEMIC STANDARDS:

SB3. Students will derive the relationship between single-celled and multi-celled organisms and the increasing complexity of systems.

SB4. Students will assess the dependence of all organisms on one another and the flow of energy and matter within their ecosystems.

NFACSI4.4.2. Appraise safety and sanitation practices throughout the food chain.

FCS-FNS-11. Students will discuss domestic and professional kitchen equipment and its use in providing safe and sanitary food.

- a. Define and demonstrate the use of measuring tools, including liquid and dry cups, measuring spoons, scales, and balances.
- b. Define and demonstrate types of knives including Chef/French, paring, bread, boning, and slicer. Practice care and safety while using all knives
- c. Define and demonstrate mixing equipment and cooking and baking tools.
- d. Define and demonstrate cookware for the range, oven, and microwave oven.
- e. Discuss appliance choices, safe use, care and energy consumption of major cooking appliances and small cooking appliances.

ACADEMIC STANDARDS:

SPS7. The student will relate transformations and flow of energy within a system.

NFACSI4.4.1. Determine conditions and practices that promote safe food handling.

Reading Standard Comment

After the elementary years, students engage in reading for learning. This process sweeps across all disciplinary domains, extending even to the area of personal learning. Students encounter a variety of informational as well as fictional texts, and they experience text in all genres and modes of discourse. In the study of various disciplines of learning (language arts, mathematics, science, social studies), students must learn through reading the communities of discourse of each of those disciplines. Each subject has its own specific vocabulary, and for students to excel in all subjects, they must learn the specific vocabulary of those subject areas in context.

Beginning with the middle grades years, students begin to self-select reading materials based on personal interests established through classroom learning. Students become curious about science, mathematics, history, and literature as they form contexts for those subjects related to their personal and classroom experiences. As students explore academic areas through reading, they develop favorite subjects and become confident in their verbal discourse about those subjects.

Reading across curriculum content develops both academic and personal interests in students. As students read, they develop both content and contextual vocabulary. They also build good habits for reading, researching, and learning. The Reading Across the Curriculum standard focuses on the academic and personal skills students acquire as they read in all areas of learning.

MRC. Students will enhance reading in all curriculum areas by:

- a. Reading in all curriculum areas
 - Read a minimum of 25 grade-level appropriate books per year from a variety of subject disciplines and participate in discussions related to curricular learning in all areas.
 - Read both informational and fictional texts in a variety of genres and modes of discourse.
 - Read technical texts related to various subject areas.
- b. Discussing books
 - Discuss messages and themes from books in all subject areas.
 - Respond to a variety of texts in multiple modes of discourse.
 - Relate messages and themes from one subject area to messages and themes in another area.
 - Evaluate the merit of texts in every subject discipline.
 - Examine author's purpose in writing.
 - Recognize the features of disciplinary texts.
- c. Building vocabulary knowledge
 - Demonstrate an understanding of contextual vocabulary in various subjects.
 - Use content vocabulary in writing and speaking.
 - Explore understanding of new words found in subject area texts.
- d. Establishing context
 - Explore life experiences related to subject area content.
 - Discuss in both writing and speaking how certain words are subject area related.
 - Determine strategies for finding content and contextual meaning for unknown words.

CTAE Foundation Skills

The Foundation Skills for Career, Technical and Agricultural Education (CTAE) are critical competencies that students pursuing any career pathway should exhibit to be successful. As core standards for all career pathways in all program concentrations, these skills link career, technical and agricultural education to the state's academic performance standards.

The CTAE Foundation Skills are aligned to the foundation of the U. S. Department of Education's 16 Career Clusters. Endorsed by the National Career Technical Education Foundation (NCTEF) and the National Association of State Directors of Career Technical Education Consortium (NASDCTEc), the foundation skills were developed from an analysis of all pathways in the sixteen occupational areas. These standards were identified and validated by a national advisory group of employers, secondary and postsecondary educators, labor associations, and other stakeholders. The Knowledge and Skills provide learners a broad foundation for managing lifelong learning and career transitions in a rapidly changing economy.

- CTAE-FS-1 Technical Skills:** Learners achieve technical content skills necessary to pursue the full range of careers for all pathways in the program concentration.
- CTAE-FS-2 Academic Foundations:** Learners achieve state academic standards at or above grade level.
- CTAE-FS-3 Communications:** Learners use various communication skills in expressing and interpreting information.
- CTAE-FS-4 Problem Solving and Critical Thinking:** Learners define and solve problems, and use problem-solving and improvement methods and tools.
- CTAE-FS-5 Information Technology Applications:** Learners use multiple information technology devices to access, organize, process, transmit, and communicate information.
- CTAE-FS-6 Systems:** Learners understand a variety of organizational structures and functions.
- CTAE-FS-7 Safety, Health and Environment:** Learners employ safety, health and environmental management systems in corporations and comprehend their importance to organizational performance and regulatory compliance.
- CTAE-FS-8 Leadership and Teamwork:** Learners apply leadership and teamwork skills in collaborating with others to accomplish organizational goals and objectives.
- CTAE-FS-9 Ethics and Legal Responsibilities:** Learners commit to work ethics, behavior, and legal responsibilities in the workplace.
- CTAE-FS-10 Career Development:** Learners plan and manage academic-career plans and employment relations.
- CTAE-FS-11 Entrepreneurship:** Learners demonstrate understanding of concepts, processes, and behaviors associated with successful entrepreneurial performance.