

## 2013 FOOD SCIENCE AND PROCESSING SYSTEMS

<b>ACADEMIC</b>		
<b>AA</b>		<b>SPEAKING AND LISTENING</b>
AA	1	Utilize effective verbal and non-verbal communication skills
AA	2	Participate in conversation, discussion, and group presentations
AA	3	Communicate and follow directions/procedures
AA	4	Communicate effectively with customers and co-workers
<b>AB</b>		<b>READING AND WRITING</b>
AB	1	Locate and interpret written information
AB	2	Read and interpret workplace documents
AB	3	Identify relevant details, facts, and specifications
AB	4	Record information accurately and completely
AB	5	Demonstrate competence in organizing, writing, and editing using correct vocabulary, spelling, grammar, and punctuation
AB	6	Demonstrate the ability to write clearly and concisely using industry specific terminology
<b>AC</b>		<b>CRITICAL THINKING AND PROBLEM SOLVING</b>
AC	1	Utilize critical-thinking skills to determine best options/outcomes (e.g., analyze reliable/unreliable sources of information, use previous experiences, implement crisis management, develop contingency planning)
AC	2	Utilize innovation and problem-solving skills to arrive at the best solution for current situation
AC	3	Implement effective decision-making skills
<b>AD</b>		<b>MATHEMATICS</b>
AD	1	Perform basic and higher level math operations (e.g., addition, subtraction, multiplication, division, decimals, fractions, units of conversion, averaging, percentage, proportion, ratios)
AD	2	Solve problems using measurement skills (e.g., distance, weight, area, volume)
AD	3	Make reasonable estimates
AD	4	Use tables, graphs, diagrams, and charts to obtain or convey information
AD	5	Use deductive reasoning and problem-solving in mathematics
<b>AE</b>		<b>FINANCIAL LITERACY</b>
AE	1	Locate, evaluate, and apply personal financial information
AE	2	Identify the components of a budget and how one is created
AE	3	Set personal financial goals and develop a plan for achieving them
AE	4	Use financial services effectively
AE	5	Demonstrate ability to meet financial obligations
<b>AF</b>		<b>INTERNET USE AND SECURITY</b>
AF	1	Recognize the potential risks associated with Internet use
AF	2	Identify and apply Internet security practices (e.g., password security, login, logout, log off, lock computer)
AF	3	Practice safe, legal, and responsible use of technology in the workplace
<b>AG</b>		<b>INFORMATION TECHNOLOGY</b>
AG	1	Use technology appropriately to enhance professional presentations
AG	2	Demonstrate effective and appropriate use of social media
AG	3	Identify ways social media can be used as marketing, advertising, and data gathering tools
<b>AH</b>		<b>TELECOMMUNICATIONS</b>
AH	1	Select and use appropriate devices, services, and applications to complete workplace tasks
AH	2	Demonstrate appropriate etiquette when using e-communications (e.g., cell phone, e-mail, personal digital assistants, online meetings, conference calls)
<b>EMPLOYABILITY</b>		
<b>EA</b>		<b>POSITIVE WORK ETHIC</b>

EA	1	Demonstrate enthusiasm and confidence about work and learning new tasks
EA	2	Demonstrate consistent and punctual attendance
EA	3	Demonstrate initiative in assuming tasks
EA	4	Exhibit dependability in the workplace
EA	5	Take and provide direction in the workplace
EA	6	Accept responsibility for personal decisions and actions
<b>EB</b>		<b>INTEGRITY</b>
EB	1	Abide by workplace policies and procedures
EB	2	Demonstrate honesty and reliability
EB	3	Demonstrate ethical characteristics and behaviors
EB	4	Maintain confidentiality and integrity of sensitive company information
EB	5	Demonstrate loyalty to the company
<b>EC</b>		<b>SELF-REPRESENTATION</b>
EC	1	Demonstrate appropriate dress and hygiene in the workplace
EC	2	Use language and manners suitable for the workplace
EC	3	Demonstrate polite and respectful behavior toward others
EC	4	Demonstrate personal accountability in the workplace
EC	5	Demonstrate pride in work
<b>ED</b>		<b>TIME, TASK, AND RESOURCE MANAGEMENT</b>
ED	1	Plan and follow a work schedule
ED	2	Work with minimal supervision
ED	3	Work within budgetary constraints
ED	4	Demonstrate ability to stay on task to produce high quality deliverables on time
<b>EE</b>		<b>DIVERSITY AWARENESS</b>
EE	1	Recognize diversity, discrimination, harassment, and equity
EE	2	Work well with all customers and co-workers
EE	3	Explain the benefits of diversity within the workplace
EE	4	Explain the importance of respect for feelings, values, and beliefs of others
EE	5	Identify strategies to bridge cultural/generational differences and use differing perspectives to increase overall quality of work
EE	6	Illustrate techniques for eliminating gender bias and stereotyping in the workplace
EE	7	Identify ways tasks can be structured to accommodate the diverse needs of workers
EE	8	Recognize the challenges and advantages of a global workforce
<b>EF</b>		<b>TEAMWORK</b>
EF	1	Recognize the characteristics of a team environment and conventional workplace
EF	2	Contribute to the success of the team
EF	3	Demonstrate effective team skills and evaluate their importance in the workplace (e.g., setting goals, listening, following directions, questioning, dividing work)
<b>EG</b>		<b>CREATIVITY AND RESOURCEFULNESS</b>
EG	1	Contribute new ideas
EG	2	Stimulate ideas by posing questions
EG	3	Value varying ideas and opinions
EG	4	Locate and verify information
<b>EH</b>		<b>CONFLICT RESOLUTION</b>
EH	1	Identify conflict resolution skills to enhance productivity and improve workplace relationships
EH	2	Implement conflict resolution strategies and problem-solving skills
EH	3	Explain the use of documentation and it's role as a component of conflict resolution

<b>EI</b>		<b>CUSTOMER/CLIENT SERVICE</b>
EI	1	Recognize the importance of and demonstrate how to properly acknowledge customers/clients
EI	2	Identify and address needs of customers/clients
EI	3	Provide helpful, courteous, and knowledgeable service
EI	4	Identify appropriate channels of communication with customers/clients (e.g., phone call, face-to-face, e-mail, website)
EI	5	Identify techniques to seek and use customer/client feedback to improve company services
EI	6	Recognize the relationship between customer/client satisfaction and company success
<b>EJ</b>		<b>ORGANIZATIONS, SYSTEMS, AND CLIMATES</b>
EJ	1	Define profit and evaluate the cost of conducting business
EJ	2	Identify "big picture" issues in conducting business
EJ	3	Identifies role in fulfilling the mission of the workplace
EJ	4	Identify the rights of workers (e.g., adult and child labor laws and other equal employment opportunity laws)
EJ	5	Recognize the chain of command, organizational flow chart system, and hierarchy of management within an organization
<b>EK</b>		<b>JOB ACQUISITION AND ADVANCEMENT</b>
EK	1	Recognize the importance of maintaining a job and pursuing a career
EK	2	Define jobs associated with a specific career path or profession
EK	3	Identify and seek various job opportunities (e.g., volunteerism, internships, co-op, part-time/full-time employment)
EK	4	Prepare a resume, letter of application, and job application
EK	5	Prepare for a job interview (e.g., research company, highlight personal strengths, prepare questions, set-up a mock interview, dress appropriately)
EK	6	Participate in a job interview
EK	7	Explain the proper procedure for leaving a job
<b>EL</b>		<b>LIFELONG LEARNING</b>
EL	1	Acquire current and emerging industry-related information
EL	2	Demonstrate commitment to learning as a life-long process and recognize learning opportunities
EL	3	Seek and capitalize on self-improvement opportunities
EL	4	Discuss the importance of flexible career planning and career self-management
EL	5	Employ leadership skills to achieve workplace objectives (e.g., personal vision, adaptability, change, shared vision)
EL	6	Recognize the importance of job performance evaluation and coaching as it relates to career advancement
EL	7	Accept and provide constructive criticism
EL	8	Describe the impact of the global economy on jobs and careers
<b>EM</b>		<b>JOB SPECIFIC TECHNOLOGIES</b>
EM	1	Identify the value of new technologies and their impact on driving continuous change and the need for life-long learning
EM	2	Research and identify emerging technologies for specific careers
EM	3	Select appropriate technological resources to accomplish work
<b>EN</b>		<b>HEALTH AND SAFETY</b>
EN	1	Assume responsibility for safety of self and others
EN	2	Follow safety guidelines in the workplace
EN	3	Manage personal health and wellness
<b>OCCUPATIONAL</b>		
<b>OA</b>		<b>FOOD SCIENCE TRENDS</b>
OA	1	Discuss the history and describe /explain the components (e.g., processing, distribution, byproducts) of the food products and processing industry

OA	2	Evaluate changes and trends in the food products and processing industry
OA	3	Predict trends and implications in the food products and processing industry
OA	4	Identify and explain environmental and safety concerns about the food supply
OA	5	Discuss the issues of safety and environmental concerns (e.g., genetically modified organisms, microorganisms, contamination, irradiation) about foods and food processing
OA	6	Determine appropriate industry response to consumer concerns to assure a safe and wholesome food supply
<b>OB</b>		<b>REGULATORY GROUPS AND LAWS</b>
OB	1	Explain the purpose of agencies (i.e., USDA, FDA, WHO) that are part of/or regulate the food products and processing industry
OB	2	Evaluate the changes in the food products and processing industry brought about by industry organizations or regulatory agencies
OB	3	Interact effectively with organizations, groups, and regulatory agencies that affect the food products and processing industry
OB	4	Explain the importance and usage of industry standards in food products and processing
OB	5	Discuss the application of industry standards in the food products and processing
OB	6	Prepare a plan for implementation of industry standards in food products and processing programs
<b>OC</b>		<b>OPERATIONAL PROCEDURES</b>
OC	1	Explain the importance of developing and maintaining, Sanitation Standard Operating Procedures (SSOP)
OC	2	Evaluate the SSOP of a food products and processing company
OC	3	Develop SSOP for a food products and processing company
OC	4	Explain the purpose of Good Manufacturing Practices (GMP)
OC	5	Evaluate the GMP of a food products and processing company
OC	6	Implement GMP for a food products and processing company
OC	7	Identify reasons for using a planned maintenance program to maintain equipment and facilities
OC	8	Develop a basic equipment and facility maintenance program
OC	9	Perform basic equipment and facility maintenance in a food product and processing operation
<b>OD</b>		<b>HAZARD ANALYSIS AND CRITICAL POINT (HACCP)</b>
OD	1	Describe contamination hazards and outline procedures to eliminate possible contamination hazards (e.g., physical, chemical, biological) associated with food products and processing
OD	2	Analyze the effectiveness of a food products and processing company's Critical Control Point (CCP) procedures
OD	3	Identify and explain the implementation of the seven principles of HACCP
OD	4	Implement an HACCP program for a food products and processing facility
<b>OE</b>		<b>SAFETY AND SANITATION</b>
OE	1	Explain techniques and procedures for the safe handling of food products
OE	2	Evaluate food product handling procedures
OE	3	Demonstrate approved food product handling techniques
OE	4	Describe the importance of performing quality assurance tests on food products
OE	5	Perform quality assurance tests on food products
OE	6	Interpret quality assurance test results and apply corrective procedures
OE	7	Describe the effects foodborne pathogens have on food products and humans ( e.g., surfaces, environmental)
OE	8	Explain the importance of microbiological tests in food product preparation, listing common spoilage and pathogenic microorganisms
OE	9	Conduct and interpret microbiological tests for foodborne pathogens and implement corrective procedures
OE	10	Explain the importance of record keeping (e.g., good agricultural practices, HACCP) in a food products and processing system
OE	11	Discuss documentation procedures (e.g., good agricultural practices, HACCP) in a food products and processing system

OE	12	Demonstrate proper record keeping (e.g., good agricultural practices, HACCP) in a food products and processing system
OE	13	Describe the importance and difference of performing quality assurance and quality control tests
OE	14	Interpret the importance and difference of performing quality assurance and quality control tests
OE	15	Perform the importance and difference of performing quality assurance and quality control tests
<b>OF</b>		<b>WORKER SAFETY PROCEDURES</b>
OF	1	Explain safety standards that must be observed in facility design and equipment use
OF	2	Outline guidelines for personnel safety in the food products and processing industry
OF	3	Evaluate a facility to determine the implementation of safety procedures
<b>OG</b>		<b>SCIENCE APPLICATION</b>
OG	1	Discuss how research and industry developments lead to improvements in the food products and processing industry
OG	2	Design a research project in food science using the scientific method
OG	3	Conduct research in food science and interpret results to improve food products
OG	4	Explain the application of chemistry to food science
OG	5	Explain how the chemical and physical properties of foods influence nutritional value and eating quality
OG	6	Determine the chemical and physical properties of food products
OG	7	Explain the Food Guide Pyramid in relation to essential nutrients for the human diet
OG	8	Compare and contrast the nutritive value of food and food groups
OG	9	Design a daily food guide for a healthful diet
OG	10	Discuss common food constituents (e.g., proteins, carbohydrates, fats, vitamins, minerals)
OG	11	Compare and contrast food constituents and their relative value to product taste and appearance
OG	12	Analyze food products to identify food constituents
OG	13	Identify common food additives (e.g., preservatives, antioxidants, buffers, stabilizers, colors, flavors) and their legal limits
OG	14	Describe the purpose of common food additives
OG	15	Formulate and explain the incorporation of additives into food products
OG	16	Explain the importance of food labeling including allergies to the consumer
OG	17	Explain the required components of a food label
OG	18	Prepare and label foods according to the established standards of regulatory agencies
OG	19	Describe factors (e.g., regulation, creativity, and economics) in planning and developing a new food product
OG	20	Plan and create a new food product
OG	21	Perform sensory testing and marketing functions to characterize and determine consumer preference and market potential
<b>OH</b>		<b>HARVESTING, SELECTION, AND INSPECTION</b>
OH	1	Identify quality and yield grades of food products
OH	2	Discuss factors that affect quality and yield grades of food products
OH	3	Assign quality and yield grades to food products according to industry standards
OH	4	Select raw food products based on yield grades, quality grades, and related selection criteria
OH	5	Perform quality control inspections of raw food products for processing
OH	6	Implement procedures to maintain original food quality and yield
OH	7	Identify and describe accepted animal treatment and harvesting techniques
OH	8	Compare and contrast accepted animal treatment and harvesting techniques
OH	9	Harvest animals using regulatory agency approved technique
OH	10	Describe the importance of pre-mortem and post-mortem inspections of animals for harvest
OH	11	Explain observations and the process of both pre-mortem and post-mortem inspection of animals in relation to the production of food products

OH	12	Conduct pre-mortem and post-mortem inspections of animals
<b>OI</b>		<b>EVALUATION OF FOOD PRODUCTS</b>
OI	1	Identify and describe foods derived from meat, egg, poultry, fish, and dairy products
OI	2	Discuss desirable qualities of processed meat, egg, poultry, fish, and dairy products
OI	3	Evaluate, grade, and classify processed meat, egg, poultry, fish, and dairy products
OI	4	Identify and describe products derived from fruits and vegetables
OI	5	Discuss desirable qualities of fruit and vegetable products
OI	6	Evaluate, grade, and classify processed products from fruits and vegetables
OI	7	Identify and describe products derived from grains, legume, and oilseeds
OI	8	Discuss desirable qualities of grain, legume, and oilseed products
OI	9	Evaluate, grade, and classify finished products derived from grains, legumes, and oilseeds
<b>OJ</b>		<b>FOOD PROCESSING</b>
OJ	1	Identify and explain common weights and measures used in the food products and processing industry
OJ	2	Weigh and measure food products and perform conversions between units of measure
OJ	3	Use weights and measures to formulate and package food products
OJ	4	Explain methods and materials for processing foods for sale as fresh food products
OJ	5	Prepare foods for sale and distribution as fresh food products
OJ	6	Evaluate foods prepared for the fresh food market based on factors such as shelf life, shrinkage, appearance, and weight
OJ	7	Identify methods of food preservation and give examples of foods preserved by each method
OJ	8	Explain the processes of food preservation methods
OJ	9	Preserve foods using various methods and techniques
OJ	10	Explain techniques for preparing ready-to-eat food products
OJ	11	Demonstrate techniques of preparing ready-to-eat food products
OJ	12	Evaluate ready-to-eat food products
OJ	13	Explain materials and methods of food packaging and presentation
OJ	14	Select and utilize packaging materials in storing processed foods and raw food products
OJ	15	Analyze foods stored in various packaging materials to determine which materials retain desirable food qualities
OJ	16	Identify and explain storage conditions to preserve product quality
OJ	17	Select methods and conditions for storing raw and processed food products
OJ	18	Compare and contrast foods stored under varying conditions for quality, shelf life, and intended use