



# CULINARY ARTS 12.0500.00

## TECHNICAL STANDARDS

An Industry Technical Standards Validation Committee developed and validated these standards on November 5 and November 12, 2024. The Arizona Career and Technical Education Quality Commission, the validating authority for the Arizona Skills Standards Assessment System, reviewed these standards on May 27, 2025.

Note: Arizona's Professional Skills are taught as an integral part of the Culinary Arts program.

**The Technical Skills Assessment for Culinary Arts is available SY2025-2026.**

Note: In this document i.e. explains or clarifies the content and e.g. provides examples of the content that must be taught.

### STANDARD 1.0 APPLY FOOD SAFETY AND SANITATION PROCEDURES

- 1.1 Demonstrate food safety and sanitation to prevent foodborne illness and maintain a clean and hygienic environment (i.e., handling, preparing, and storing foods; cleaning and sanitizing equipment; maintaining a clean workspace; etc.)
- 1.2 Describe cross-contamination and demonstrate the use of acceptable procedures when preparing and storing foods that require time/temperature control for safety (TCS) to prevent the growth of harmful bacteria
- 1.3 Discuss major reasons for food spoilage and cross-contamination and identify corrective actions
- 1.4 Recognize food spoilage (i.e., visual appearance, smell, taste, texture, color, etc.)
- 1.5 Demonstrate appropriate dress code to ensure safety and prevent contamination of food (i.e., wear clean clothing/uniforms, remove smart watches, minimal jewelry, hair secured, close-toed shoes, etc.)
- 1.6 Demonstrate good personal hygiene and health practices (i.e., wash hands, clean nails, cover wounds, cover coughs and sneezes, etc.)
- 1.7 Prevent the infestation of insects, rodents, and pests, and report signs to the proper authority (i.e., clean and sanitize; store food in airtight containers; dispose of garbage regularly; etc.)
- 1.8 Explain the temperature danger zone (TDZ) for food safety, and identify minimum internal cooking temperatures and its impact on the growth of pathogens
- 1.9 Compare and contrast the requirements for potentially hazardous foods during food preparation and storage [e.g., time/temperature control for safety (TCS) and ready-to-eat (RTE) foods]
- 1.10 Define methods for the growth of pathogens [e.g., food (nutrients), acidity (pH level), time, temperature, oxygen, and moisture]
- 1.11 Maintain appropriate placement of products in refrigeration equipment based on the hierarchy of storage (e.g., ensure raw items are stored below ready-to-eat foods and avoid overloading to prevent inadequate chilling)
- 1.12 Explain the benefits of first in, first out (FIFO) to prevent food from spoiling for dry, refrigerated, and frozen food
- 1.13 Compare and contrast food safety (unintentional contamination) and food defense (intentional contamination) relative to the three potential hazards (e.g., biological, chemical, and physical)

### STANDARD 2.0 APPLY SAFETY PROCEDURES

- 2.1 Identify the various types of cleaners and sanitizers (i.e., uses, storage methods, reactivity issues, etc.)
- 2.2 Explain the purpose of a Safety Data Sheet (SDS) as governed by OSHA with a particular focus on its First Aid Measures section
- 2.3 Identify safety precautions for common workplace accidents and injuries (i.e., lifting heavy items, cuts, burns, electrical, slips, trips, falls, etc.)
- 2.4 Identify emergency procedures for addressing kitchen and dining room injuries (e.g., first aid, CPR, AEDs, and how to administer an EpiPen for allergic reactions)
- 2.5 Define the types and appropriate uses for fire extinguishers found in food service areas [e.g., Class K (silver); Class A, B, C, and D; ANSUL system; and the PASS technique (Pull, Aim, Squeeze, and Sweep)]
- 2.6 Develop a Standard Operating Procedure (SOP) for an emergency and evacuation plan for food service operations in unexpected situations (i.e., allergic reactions, fire, severe weather, power outages, etc.)

### STANDARD 3.0 APPLY BASIC NUTRITIONAL CONCEPTS

- 3.1 Identify current USDA nutritional guidelines (e.g., fruits, vegetables, grains, proteins, and dairy)

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- 3.2 Specify the primary functions and sources for the seven nutrient groups (e.g., carbohydrates, proteins, fats, vitamins, minerals, dietary fiber, and water)
- 3.3 Identify cooking and storage practices for maximum retention of nutrient groups in the final product (i.e., minimal water, steaming vs. boiling, stir-frying vs. deep frying, refrigerating properly, using airtight containers, etc.)
- 3.4 Recognize the Big 9 food allergens and determine appropriate substitutions (e.g., milk, eggs, fish, shellfish, tree nuts, peanuts, wheat, soybeans, and sesame)
- 3.5 Identify the allergic response symptoms and outline appropriate actions to be taken when someone is exposed to an allergen (i.e., awareness of menu ingredients, disclosing allergen information on menus, consulting a supervisor when unsure, etc.)
- 3.6 Distinguish common nutritional considerations and guidelines with specialized diets (i.e., vegan/vegetarianism, gluten-free, paleo, restricted diets, etc.)

#### **STANDARD 4.0 APPLY CULINARY MATHEMATICS**

- 4.1 Recognize U.S. standard measurements (i.e., ounces vs. pounds, weight vs. volume, etc.)
- 4.2 Compare and contrast U.S. standard measurement equivalencies (i.e., 3 teaspoons = 1 tablespoon; 1 pint = 16 ounces; the Gallon Man visual aid, etc.)
- 4.3 Convert U.S. standard measurements to metric measurements and vice versa
- 4.4 Demonstrate use of a digital scale for measuring conversions (e.g., grams vs. ounces)
- 4.5 Determine the purchase quantity vs. the edible quantity for an ingredient in a recipe (e.g., consider waste and yield)
- 4.6 Evaluate the relationship between the portion cost and the purchase unit cost of an ingredient within a recipe (i.e., 2 eggs to 1 dozen eggs for a cake recipe, 4 ounces ground beef patty to 16 ounces of beef, etc.)
- 4.7 Determine the food cost of a recipe to assess its profitability
- 4.8 Utilize the markup method to set menu prices according to the pricing factor

#### **STANDARD 5.0 APPLY RECIPE FUNDAMENTALS**

- 5.1 Use specific terminology and techniques when following or referencing a recipe (i.e., specific knife cuts, emulsions, cooking methods, mixing methods, mise en place, etc.)
- 5.2 Compare and contrast a recipe from home and a standardized recipe
- 5.3 Identify the major components of a standardized recipe (e.g., title, yield, ingredients and amounts, method/directions for preparation, equipment, and temperature and time)
- 5.4 Read, follow, and execute a recipe
- 5.5 Use proper scaling and measurement techniques for recipe conversion factors (RCF) (e.g., multiplying or dividing for recipe yield)

#### **STANDARD 6.0 ANALYZE KITCHEN TOOLS AND COMMERCIAL EQUIPMENT**

- 6.1 Use hand-held kitchen tools during food preparation and cooking for specific applications (i.e., peelers, graters, spatulas, scrapers, wooden spoons, tongs, sifters, pots, pans, timers, colanders, thermometers, etc.)
- 6.2 Use electrical equipment and tools for cutting, chopping, mixing, stirring, and blending (i.e., food processors, blenders, stand mixers, immersion blenders, etc.)
- 6.3 Describe the proper use and maintenance for different knives (i.e., the right knife for the task, cutting boards, handling, cleaning, drying, storing, sharpening, etc.)
- 6.4 Operate different types of ovens, ranges, stoves, grills, and griddles
- 6.5 Identify types of refrigerator and freezer equipment and their uses (i.e., reach-ins for storing and accessing perishable items; walk-ins to store large quantities of perishable items; etc.)
- 6.6 Identify large commercial kitchen equipment for specific applications (i.e., ovens, ranges, freezers, refrigerators, dishwashers, etc.)
- 6.7 Demonstrate procedures for the care and maintenance of commercial kitchen equipment and tools (e.g., unplugging, cleaning, inspecting, and sanitizing)

#### **STANDARD 7.0 ANALYZE FOOD PREPARATION TECHNIQUES**

- 7.1 Demonstrate basic knife cuts (i.e., julienne; brunoise; batonnet; small, medium, and large dice; mince, chop, chiffonade, etc.)
- 7.2 Demonstrate mise en place to streamline meal prep, time management, and improve organization
- 7.3 Describe the guidelines for using common spices, herbs, seasonings, and salt (i.e., dried and fresh herb ratio, common spice blends, when to add dried vs. fresh herbs, etc.)
- 7.4 Identify different oils and vinegars by determining their smoke point, flavor, quality, storing, and shelf life
- 7.5 Identify different types of dressings (e.g., vinaigrettes, creamy, and cooked) and emulsifiers (e.g., egg yolks, Dijon mustard, and honey)

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- 7.6 Distinguish characteristics, preparation methods, and culinary purposes among marinades, rubs, and brines
- 7.7 Compare and contrast dry heat cooking methods (i.e., roasting, baking, grilling, broiling, sauteing, stir-frying, deep-frying, etc.)
- 7.8 Compare and contrast moist heat cooking methods (i.e., steaming, poaching, simmering, blanching, boiling, etc.)
- 7.9 Compare and contrast the combination cooking methods of braising and stewing
- 7.10 Identify back of house (BOH) positions in the kitchen brigade (i.e., executive chef, sous chef, garde manger, line cook, grill cook, prep cook, expeditor, saucier, dishwasher, BOH staff manager, etc.)
- 7.11 Perform side work for opening and closing food service shifts in BOH (i.e., restocking, inventory, cleaning, checklist, par list, etc.)

## **STANDARD 8.0 APPLY CULINARY SKILLS AND TECHNIQUES TO HOT FOODS**

- 8.1 Discuss common hot food preparation techniques (i.e., selecting and cleaning, cutting, seasoning, cooking, storing, etc.)
- 8.2 Identify primal cuts of beef (i.e., chuck, loin, brisket, round, etc.); pork (i.e., loin, leg, belly, butt, etc.); lamb (i.e., loin, leg, rib rack, etc.); and poultry (i.e., leg and thigh, wing, breast, etc.)
- 8.3 Demonstrate preparation and cooking techniques for meats, poultry, and seafood using dry heat, moist heat, or combination cooking
- 8.4 Demonstrate preparation and cooking techniques for fruits, vegetables, grains, and plant-based meat alternatives using dry heat, moist heat, or combination cooking
- 8.5 Demonstrate preparation and cooking techniques for breakfast meats, eggs, and batter products using dry heat, moist heat, or combination cooking
- 8.6 Identify various stocks, soups, and the five mother sauces (e.g., Hollandaise, Bechamel, Tomato, Velouté, and Espagnole) and their common derivatives (i.e., Bearnaise, Mornay, Bercy, Demi-Glace, etc.)
- 8.7 Identify food preparation techniques for banquet events that ensure efficiency and food quality (e.g., par cooking, batch cooking, and hot holding)
- 8.8 Demonstrate hot food presentation and plating techniques for visual appeal (i.e., garnishing, traditional, contemporary, etc.)

## **STANDARD 9.0 IMPLEMENT MODERN GARDE MANGER TECHNIQUES AND PRINCIPLES**

- 9.1 Discuss the responsibilities of a modern-day garde manger (i.e., preparing all cold food dishes; presenting and plating; menu planning; ingredient preparation; storage management; quality control; etc.)
- 9.2 Identify the tools (i.e., paring and channel knives, zesters, melon ballers, peelers, slicers, mandolines, etc.) and equipment used in garde manger preparation (i.e., walk-in and reach-in refrigerators and freezers, etc.)
- 9.3 Demonstrate fundamental skills in preparing cold food dishes (i.e., salads and dressings; soup made with fruits and vegetables; sauces; sandwiches; canapés and hors d'oeuvres; cheese and charcuterie trays; etc.)
- 9.4 Identify food presentation and garnish techniques that increase visual appeal for individual plating and banquet events (e.g., salads, fruit trays, and dessert stations)
- 9.5 Demonstrate quality control for cold food dishes (i.e., freshness and quality of cold food items, temperature control, storing, etc.)

## **STANDARD 10.0 EXPLORE TECHNIQUES FOR PREPARING BAKERY AND PASTRY PRODUCTS**

- 10.1 Define common baking terms, methods, and techniques (i.e., creaming, folding, kneading, proofing, whisking, egg washing, rubbing-in, blind baking, blending, docking, etc.)
- 10.2 Explain the functions of common baking ingredients (i.e., flour for structure; sugar for sweetness and moisture; salt for flavor and yeast control; eggs for texture and lift; etc.)
- 10.3 Explain the function of chemical and organic leaveners (i.e., the reaction of baking powder combined with moisture and heat; baking soda with an acidic ingredient and liquid; yeast fermentation from sugars in the dough; etc.)
- 10.4 Demonstrate techniques for preparing baked goods [i.e., use room temperature ingredients; measure ingredients accurately; use the correct mixing method and fold when instructed; prepare the appropriate pan size to prevent sticking (e.g., greasing and flouring and/or parchment paper); preheat oven/convection oven and set correct baking temperature and time; cool baked goods completely, etc.]
- 10.5 Demonstrate techniques and mixing methods for preparing yeast breads (i.e., activating the yeast; mixing the dough; kneading, shaping, and proofing the dough; punching down the dough to release excess gas; baking; etc.)
- 10.6 Demonstrate techniques and mixing methods for preparing quick breads (i.e., mix dry ingredients, mix wet ingredients, then combine; stir in add-ins; pour batter into prepared pan and bake; test for doneness; cool; etc.)
- 10.7 Explain techniques for preparing pastry (e.g., emulsification, aeration, thickening, and gelling)
- 10.8 Compare and contrast premade items and scratch-made preparations considering flavor and quality, nutritional differences, convenience, ingredients, and flexibility (i.e., laminated doughs, yeast doughs, cookie doughs, muffin mixes, etc.)

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- 10.9 Identify finishing techniques and decorative elements for baking and pastry products [i.e., icing, buttercreams, ganache, fondant, whipped cream, icing flowers, garnishes (i.e., nuts, fruits, chocolate, crumbs, etc.)]
- 10.10 Explain storage methods for baked goods and pastries to preserve freshness, flavors, and textures (i.e., wrapping with plastic wrap, resealable bags, airtight containers, room temperature, refrigeration and freezer storage, etc.)

## **STANDARD 11.0 PERFORM DINING AND BEVERAGE SERVICE OPERATIONS**

- 11.1 Discuss marketing, displaying, and packaging food for a successful dining and beverage service operation
- 11.2 Identify different types of food service operations and service styles (i.e., buffet, fast casual, formal casual, family, etc.)
- 11.3 Demonstrate the general rules of table setting and dining room layout for fine and casual dining (i.e., napkins, dishes, flatware, glassware, etc.)
- 11.4 Identify front of house (FOH) positions in food service (i.e., maître d'/manager, host, servers, banquet staff, food runners, dining room manager, banquet captain, etc.)
- 11.5 Demonstrate professionalism and effective customer service techniques (i.e., clear communication, attentiveness, problem-solving, maintaining a positive attitude, ensuring a respectful environment for customers, etc.)
- 11.6 Demonstrate cash handling procedures for processing guest checks, including point of sale systems (POS)
- 11.7 Practice sales techniques for service personnel including menu knowledge, suggestive selling, and special requests
- 11.8 Demonstrate fundamentals of acceptable dining etiquette and service etiquette (i.e., reactive and proactive approaches, etc.)
- 11.9 Perform front of house (FOH) side work for opening and closing food service shifts (i.e., refilling salt and pepper shakers, restocking dishware, rolling silverware, etc.)
- 11.10 Describe various menu styles (i.e., A la Carte, Prix Fixe, Table d'hôte, Tasting, Tapas, Du Jour, etc.)
- 11.11 Design a menu including specific consumer advisories and required disclosures (e.g., allergen warnings and notices for raw, or undercooked foods)
- 11.12 Demonstrate professional beverage service by ensuring proper drink preparation and presentation (i.e., hot or cold coffee, espresso, milkshakes, hot or cold tea, soda, lemonade, water, pitcher service, refilling beverages, tray carrying, etc.)

## **STANDARD 12.0 EXPLORE STANDARD ETHICAL AND LEGAL BEHAVIOR WITHIN THE CULINARY INDUSTRY**

- 12.1 Compare and contrast the relationship between ethical and unethical behavior in the culinary industry (e.g., laws, regulations, and standards that govern production, handling, marketing, and trade of food)
- 12.2 Apply ethical practices to prepare and serve food (i.e., fresh ingredients, valuing the health of the customer, personal hygiene, etc.)
- 12.3 Discuss guidelines and regulations specific to the food service industry (i.e., employee handbook, legal requirements for minimum wage, tips, overtime pay, etc.)

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