

# Goals

Students will demonstrate the ability to:

- Goal 1: Analyze the impact of historical developments and advancements within the food production and food services industries.
- Goal 2: Select, use and maintain food preparation equipment.
- Goal 3: Plan menu items based on standardized recipes to meet customer needs.
- Goal 4: Apply food safety and sanitation procedures.
- Goal 5: Apply the fundamentals of time and temperature to cooking, cooling, and reheating a variety of foods.
- Goal 6: Evaluate the nutritional needs of individuals and families in relation to health in a commercial food preparation setting.
- Goal 7: Conduct laboratory preparation for all menu categories to produce a variety of food products.
- Goal 8: Explore current and emerging careers, prepare for employment and advancement in the field of culinary science.

# **Culinary Science**

## **Essential Curriculum Documents**

**This course is designed for the student who is interested in advanced culinary science techniques and/or a career in the professional food service industry. The course will introduce students to the basic culinary arts and sciences skills needed to give them the competitive edge in the work force. By using a hands-on, project oriented approach, students will work in teams to learn the science of food preparation skills and safety and sanitation applications. Students will also become knowledgeable in the use of professional equipment and tool operation. Students in this program must be in at least the 11th grade and have successfully completed Food and Nutrition Technology.**

### **UNIT I: INTRODUCTION TO CULINARY SCIENCE**

**Goal 1: Analyze the impact of historical developments and advancements within the food productions and food service industries.**

**Objectives - The student will:**

- 1.1 Describe the historical progression leading to modern cookery.
- 1.2 Identify the responsibilities of the modern kitchen brigade.
- 1.3 Name key historical figures responsible for developing the food service profession.
- 1.4 Describe the basic types of service and how they affect preparation.

### **UNIT II: TOOLS AND EQUIPMENT**

**Goal 2: Use maintain, and properly select tools and equipment for food preparation.**

**Objectives - The student will:**

- 2.1 Identify hazardous and non-hazardous equipment.
- 2.2 Identify common kitchen equipment.
- 2.3 Explain how to operate, clean, and sanitize common kitchen equipment.
- 2.4 Identify specialty kitchen equipment.
- 2.5 Explain how to operate, clean, and sanitize specialty kitchen equipment.
- 2.6 Identify kitchen hand tools, small wares, and utensils.
- 2.7 Discuss knife usage.
- 2.8 Demonstrate knife skills.

### **UNIT III: RECIPE USE AND TERMINOLOGY**

**Goal 3: Plan menu items on standardized recipes to meet consumer needs.**

**Objectives - The student will:**

- 3.1 Discuss the structure of a recipe.
- 3.2 Discuss the importance of using judgment when cooking.
- 3.3 Discuss the structure and functions of standardized recipes.
- 3.4 Explain terms associated with recipe usage.
- 3.5 Discuss terms associated with weights and measurements.
- 3.6 Identify common weight and measure abbreviations.
- 3.7 Measure ingredients and portions.
- 3.8 Convert recipes to higher or lower yields.
- 3.9 Explain the importance of Hazard Analysis Critical Control Point (H.A.C.C.P.) when handling food.
- 3.10 Write Hazard Analysis Critical Control Point (H.A.C.C.P.) guidelines into recipe directions.

### **UNIT IV: SANITATION**

**Goal 4: Apply food safety and sanitation procedures.**

**Objectives - The student will**

- 4.1 Explain why food safety is important.
- 4.2 Identify terms relating to foodborne illness.
- 4.3 Identify the causes of foodborne illness.
- 4.4 Explain the flow of food.
- 4.5 Explain how to effectively prevent contamination and cross-contamination.
- 4.6 Define the time and temperature principle.
- 4.7 Select, calibrate, and use a food thermometer.
- 4.8 Describe the proper techniques for thawing food items.
- 4.9 Identify temperatures for cooking, hot holding, cold holding, and reheating specific food items.
- 4.10 Describe the proper methods for cooling food items.
- 4.11 Discuss the standards for personal hygiene in a commercial kitchen.
- 4.12 Discuss the procedures for manual ware washing.
- 4.13 Discuss the procedures for automatic machine ware washing.
- 4.14 Discuss the need for a Hazard Analysis Critical Control Point (H.A.C.C.P.) food safety system in the foodservice operation.
- 4.15 Write Hazard Analysis Critical Control Point (H.A.C.C.P.) standards in a common recipe.

## **UNIT V: PRINCIPLES OF COOKING**

### **Goal 5: Apply the principles of cooking to a variety of foods.**

#### **Objectives - The student will:**

- 5.1 Explain the concept of heat transfer and its relation to food preparation.
- 5.2 Describe how and why heat removal affects food preparation.
- 5.3 Summarize the effects of heat on food.
- 5.4 List and discuss various cooking methods.
- 5.5 Explain the difference between dry and moist heat cooking methods.

## **UNIT VI: NUTRITION NEEDS**

### **Goal 6: Evaluate the nutritional needs of individuals and families in relation to health in a commercial food production setting.**

#### **Objectives - The student will:**

- 6.1 Assess the effect of nutrients on health.
- 6.2 Research the impact of food and diet fads, food additives and food -related illness or disease on commercial menu preparation.
- 6.3 Appraise sources of food and nutrition information, including food product labels and restaurant menu labels, related to individual and family health.

## **UNIT VII: LABORATORY PRACTICES**

### **Goal 7: Conduct the laboratory preparation for all new menu categories to produce a variety of food products.**

#### **Objectives - The student will:**

##### **Flavors and Seasons**

- 7.1 Identify and experience the four taste sensations.
- 7.2 Identify herbs and spices.
- 7.3 Compare fresh herbs and spices.
- 7.4 Discuss the origin and ethnic identity of major herbs and spices.
- 7.5 Identify other seasoning and flavoring ingredients.
- 7.6 Discuss the difference between seasoning and flavoring.

##### **Eggs**

- 7.7 Discuss the composition of eggs.
- 7.8 Discuss eggs as a cooking ingredient.
- 7.9 Explain egg grades and sizes.

- 7.10 Describe quality factors associated with purchasing eggs.
- 7.11 Discuss market forms of eggs.
- 7.12 Describe preparation of common egg dishes.
- 7.13 Explain proper egg storage.
- 7.14 Describe the nutritional value of eggs.
- 7.15 Discuss safe use of eggs.

### **Dairy Products**

- 7.16 Describe various types of milk available.
- 7.17 Define pasteurization and homogenization.
- 7.18 Define cream and its characteristics.
- 7.19 Define fermented and processed milk products.
- 7.20 Discuss cooking problems with dairy products.
- 7.21 Describe commercial forms of butter.
- 7.22 Identify the main types of cheeses and give examples of each.
- 7.23 Discuss cooking and storing cheese.
- 7.24 Summarize the nutritional value of dairy products.

### **Baking Essentials**

- 7.25 Identify and discuss the functions and characteristics of major baking ingredients.
- 7.26 Explain temperature as a tool of the baker.
- 7.27 Explain the importance of weighting baking ingredients
- 7.28 Demonstrate use of a baker's balance scale.
- 7.29 Identify quick breads.
- 7.30 Describe ingredients and mixing methods of quick breads.

### **Fats and Oils**

- 7.31 Explain the difference between fats and oils.
- 7.32 Describe the differences among saturated, mono-unsaturated, and poly-unsaturated fatty acids.
- 7.33 Discuss shortening, butter, and margarine.
- 7.34 Describe nutritional concerns associated with fats and oils.

### **Emulsions/Cold Sauces**

- 7.35 Define an emulsion.
- 7.36 Describe how emulsion is stabilized.
- 7.37 Explain how emulsions break down.
- 7.38 Identify types of cold sauces.
- 7.39 Differentiate between commercial and scratch-made cold sauces.
- 7.40 Discuss the nutritional concerns of cold sauces.
- 7.41 Summarize safe handling considerations for cold sauces.

### **Vegetables**

- 7.42 Identify cabbage family vegetables.
- 7.43 Identify stalk vegetables.

- 7.44 Identify leafy vegetables.
- 7.45 Identify salad greens.
- 7.46 Identify seeds, edible pods, and young shoots.
- 7.47 Identify vegetable fruits.
- 7.48 Identify bulb vegetables.
- 7.49 Identify mushrooms and truffles.
- 7.50 Identify specialty vegetables.
- 7.51 Discuss methods of preparing vegetables.
- 7.52 Discuss and apply cooking methods for vegetables.
- 7.53 Summarize handling of fresh, frozen, and canned vegetables.
- 7.54 Summarize the nutritional value of vegetables.

### **Potatoes and Other Tubers**

- 7.55 Identify tubers other than potatoes.
- 7.56 Identify common types of potatoes.
- 7.57 Discuss and apply cooking methods for potatoes.
- 7.58 Summarize the nutritional value of potatoes and other tubers.
- 7.59 Discuss handling, preparation, and storage of potatoes.
- 7.60 Discuss Hazard Analysis Critical Control Point (H.A.C.C.P.) standards for cooked potatoes.

### **Salads**

- 7.61 Discuss the different salad types.
- 7.62 Discuss salad composition and presentation.
- 7.63 Discuss using cooked vegetables in salads.
- 7.64 Discuss meat, poultry, and seafood salads.
- 7.65 Summarize quality issues in preparing and serving salads.
- 7.66 Identify handling and storing tips for vegetable salads.
- 7.67 Outline issues concerning food safety and nutrition in salads.

### **Fruit**

- 7.68 Identify the characteristics of fruit.
- 7.69 Describe the preparation of fresh fruit.
- 7.70 Analyze the effects of various cooking methods on fruit.
- 7.71 Identify market forms of fruit.
- 7.72 Summarize the selection, handling, and storage of fresh, frozen, and canned fruit.
- 7.73 Describe the nutritional value of fruit.

### **Stocks**

- 7.74 Identify types of stock
- 7.75 Discuss the preparation of stock.
- 7.76 Identify other preparations made from stocks.
- 7.77 Discuss court bouillon.
- 7.78 Compare convenience bases and stocks.

- 7.79 Discuss Hazard Analysis Critical Control Point (H.A.C.C.P.) safety during the cooling and storing process.

### **Hot Sauces**

- 7.80 Discuss the importance of sauces in culinary preparation.  
7.81 Identify the components of a sauce.  
7.82 Discuss the thickening agents used in sauces.  
7.83 Explain the reduction in sauces.  
7.84 Describe how to make a clear sauce.  
7.85 Discuss sauce consistencies.  
7.86 Identify four mother sauces, related compound sauces, and other sauces.  
7.87 Discuss the preparation of the mother sauces and compound sauces.  
7.88 Identify types of emulsified sauces.  
7.89 Discuss the preparation of emulsified sauces  
7.90 Discuss compound butters.  
7.91 Discuss miscellaneous sauces.  
7.92 Discuss Hazard Analysis Critical Control Point (H.A.C.C.P.) safety during preparation, cooking, and holding times.

### **Soups**

- 7.93 Identify soup classifications.  
7.94 Describe clear soups and their preparations.  
7.95 Discuss purees, coulis, and bisques.  
7.96 Discuss bechamel and Veloute based soups.  
7.97 Discuss vegetable soups.  
7.98 Describe specialty soups.  
7.99 Identify cold soups.  
7.100 Discuss soup garnish and service  
7.101 Compare convenience-packaged soups to ones made from stock.  
7.102 Discuss Hazard Analysis Critical Control Point (H.A.C.C.P.) safety during preparation, cooking, and holding times.

### **Farinaceous Cookery**

- 7.103 Distinguish between the major types of rice.  
7.104 Summarize methods of preparing rice.  
7.105 Discuss wild rice.  
7.106 Discuss composition and types of corn.  
7.107 Discuss composition and types of wheat.  
7.108 Summarize the principles of cooking cereals and grains.  
7.109 Describe the nutritional value of cereals and grains.  
7.110 Distinguish major kinds and shapes of commercial pasta.  
7.111 Describe factors in cooking and handling pasta.  
7.112 Describe noodles and their preparation.  
7.113 Identify other items that are part of farinaceous cookery.  
7.114 Discuss Hazard Analysis Critical Control Point (H.A.C.C.P) requirements with farinaceous foods.

### **Breakfast**

- 7.115 Define breakfast cookery.
- 7.116 Discuss the importance of *mise en place* in breakfast cookery.
- 7.117 Discuss egg cookery.
- 7.118 Discuss breakfast cereals.
- 7.119 Discuss breakfast meat preparation.
- 7.120 Discuss breakfast potato preparation.
- 7.121 Discuss waffle and French toast preparation.
- 7.122 Discuss fruits and juices used at breakfast.
- 7.123 Discuss the nutritional importance of breakfast.

### **Frozen Desserts**

- 7.124 Identify common varieties of frozen desserts.
- 7.125 Discuss the components of sherbet, ice cream, and sorbet.
- 7.126 Describe preparation methods of sorbet and ice cream.
- 7.127 Compare and discuss commercial forms of ice cream, sherbet, and sorbet.
- 7.128 Discuss Hazard Analysis Critical Control Point (H.A.C.C.P.) requirements in preparing, storing, and handling ice cream and sherbet.

## **UNIT VIII: CAREERS**

**Goal 8: Explore current and emerging careers, prepare for employability and advancement in the field of Culinary Science.**

### **Objectives - The student will:**

- 8.1 Identify sources of information about job availability.
- 8.2 Prepare a personal fact sheet or resume.
- 8.3 Complete a job application.
- 8.4 Identify factors that contribute to a favorable job interview.