

## CULINARY ARTS /BAKING

Revised April 2005

### **I. DESCRIPTION**

This course teaches the student the evolutionary stages of baking. From such basics as cakes, bread baking, quick breads like muffins, pies, cookies, puddings, and icings. To advance stages like, cake decorating, wedding cakes, ice creams and frozen desserts, éclairs, fruit tarts, chocolate work, and show pieces. To showcase our student work a European pastry cart of their creations from the bakery is featured in our school restaurant, Chez Technique.

The importance of correct baking and cooking temperatures and storage is stressed. Emphasis is placed on weights and measures, types of flour, fruits used in production and the development of efficiency in baking.

In addition to the cooking aspect of our baking department, there is a strong enforcement to student's sanitation and appearance. No student is allowed in shop without his or her uniforms. Nails are maintained and short as to not hinder the student performance. Hairs net are worn over the head. A clean apron is a daily part of the uniform. Students are responsible for the upkeep of their uniforms. All these steps help and prepare the student for real world standards.

### **II. Course Objectives / Outline:**

#### **A. Working in a safe kitchen**

**Student well be able to:**

1. Establish personal standards of appearance, sanitation, safety, and behavior appropriate to a food service professional. CCCS: 9.1 and 9.2

#### **B. Ingredients Identification**

**Student well be able to:**

1. Identify and describe types and roles of strengtheners, shortenings, sweeteners, flavorings, leaveners, and thickeners. CCCS: 9.1 and 9.2
2. Explain the key differences between flours, flour grains and meals CCCS:

9.1 and 9.2

3. Define the different types of flour commonly used in bakeshop CCCS: 9.1 and 9.2
4. Identify the ingredients used in baking and their use in a formulas CCCS: 9.1 and 9.2
5. Enable the student to select formulas and ingredients, scale and mix ingredients. CCCS: 9.1 and 9.2

### **C. Equipment Identification (CONTINUED)**

#### **Student well be able to:**

1. Identify the various kinds of scaling and measuring tools used in professional bakeshops. CCCS: 9.1 and 9.2; CCCS: 9.1 and 9.2
2. Identify the various kinds of cutting tools used in professional bakeshops. CCCS: 9.1 and CCCS: 9.1 and 9.2
3. Identify the variety of other small tools used in professional bakeshops. CCCS; 9.1 and 9.2 CCCS: 9.1 and 9.2
4. Identify the various kinds of hand tools for sifting, straining, and pureeing used in professional bakeshops. CCCS: 9.1 and 9.2 ; CCCS: 9.1 and 9.2
5. Identify the various kinds of tools for pastries and cookies used in professional bakeshops. CCCS: 9.1 and 9.2 ; CCCS: 9.1 and 9.2
6. Identify the various kinds of tools for decor work used in professional bakeshops. CCCS: 9.1 and 9.2; CCCS: 9.1 and 9.2
7. Identify the various kinds of tools used for confectionery and decor work in professional bakeshops. CCCS: 9.1 and 9.2 ; CCCS: 9.1 and 9.2
8. Identify the various kinds of bake ware used in professional bakeshops. CCCS: 9.1 and 9.2; CCCS: 9.1 and 9.2
9. Identify the various kinds of kitchen equipment and refrigeration used in professional bakeshops. CCCS: 9.1 and 9.2; CCCS: 9.1 and 9.2

### **D. BAKING SCIENCE AND FOOD SAFETY**

#### **Student well be able to:**

1. Identify the five basic baking ingredients and their two subcategories. CCCS: 9.1 and 9.2
2. Define what a leaveners is and identify the most common products and methods used to leavening baked products. CCCS: 9.1 and 9.2
3. Identify the properties of sweeteners and how they are altered in baked products. CCCS: 9.1 and 9.2
4. Identify the properties of thickeners and how they are altered in baked products. CCCS: 9.1 and 9.2
5. Define an emulsion and describe its properties. CCCS: 9.1 and 9.2

6. Define an overview of the process of tempering chocolate. CCCS: 9.1 and 9.2
7. Discuss food safety and identify ways to prevent food-borne illness in the CCCS: 9.1 and 9.2
8. Professional bakeshop and pastry kitchen. CCCS: 9.1 and 9.2
9. Define HACCP and the method of implementing the food safety system into the professional bakeshop and pastry kitchen. CCCS: 9.1 and 9.2
10. Identify kitchen safety measures that when implemented daily reduce the risk of healthy hazards and injury. CCCS: 9.1 and 9.2
11. Discuss a general overview of regulations, inspection, and certification that pertain to the professional bakeshop and pastry kitchen. CCCS: 9.1 and 9.2

## **E. BAKING FORMULAS AND BAKERS' PERCENTAGES (CONTINUED)**

### **Student well be able to:**

1. Explain how to thoroughly review a formula in preparation for using it as part of baker's mise en place. CCCS: 9.1 and 9.2
2. Identify the different base measurements for both weight and volume. CCCS: 9.1 and 9.2
3. Define the term-standardized *formula*. CCCS: 9.1 and 9.2
4. Identify the component parts of standardized formulas and why they are important. CCCS: 9.1 and 9.2
5. Define and be able to apply formula conversion factors. CCCS: 9.1 and 9.2
6. Explain how to convert to common units of measure. CCCS: 9.1 and 9.2
7. Explain how to convert the number of portions in a formula. CCCS: 9.1 and 9.2
8. Master the conversion of volume to weight and weight to volume. CCCS: 9.1 and 9.2
9. Master the conversions between U.S. and metric measurement systems. CCCS: 9.1 and 9.2
10. Master an understanding of bakers' percentages and apply them effectively in formulas. Explain how desired dough temperature (DDT) and the total temperature CCCS: 9.1 and 9.2

## **F. QUICK BREADS AND CAKES**

### **Student well be able to:**

1. Explain the basic principles of quick bread and cake preparation. CCCS: 9.1 and 9.2
2. Describe proper pan preparation, cooling, and storing techniques for various

- mixing methods. CCCS: 9.1 and 9.2
3. Define and master the blending mixing method. CCCS: 9.1 and 9.2
  4. Define and master the creaming mixing method. CCCS: 9.1 and 9.2
  5. Define and master the two-stage mixing method. CCCS: 9.1 and 9.2
  6. Define and master the angel food mixing method. CCCS : 9.1 and 9.2
  7. Define and master warm and cold foaming methods. CCCS: 9.1 and 9.2
  8. Define and master the separated foam mixing method. CCCS: 9.1 and 9.2
  9. Define and master the combination mixing method. CCCS: 9.1 and 9.2
  10. Define and master the chiffon mixing method. CCCS: 9.1 and 9.2
  11. Explain the basic principles of cheesecake preparation. CCCS: 9.1 and 9.2

### **G. Icings, Glazes, and Sauces (CONTINUED)**

#### **Student well be able to:**

1. Make a common meringue. CCCS: 9.1 and 9.2
2. Describe the stages of meringues. CCCS: 9.1 and 9.2
3. Prepare different types of butter cream icing. CCCS: 9.1 and 9.2
4. Explain the process of whipping cream. CCCS: 9.1 and 9.2
5. Master the technique of a hard and soft ganache. CCCS: 9.1 and 9.2
6. Describe how to prepare fondant for glazing. CCCS: 9.1 and 9.2
7. Define the different applications for glazes. CCCS: 9.1 and 9.2
8. Produce a vanilla sauce. CCCS: 9.1 and 9.2
9. Prepare a fruit coulis and or sauce. CCCS: 9.1 and 9.2

### **H. Filled and Assembled Cakes and Tortes**

#### **Student well be able to:**

1. Master the basic assembly of cakes. CCCS: 9.1 and 9.2
2. Explain the functions of a garnish. CCCS: 9.1 and 9.2
3. Prepare molded cakes CCCS: 9.1 and 9.2
4. Master icing a cake. CCCS: 9.1 and 9.2
5. Prepare a gelatin-based filling. CCCS: 9.1 and 9.2
6. Master the basic assembly of a traditional layer cake. CCCS: 9.1 and 9.2
7. Master glazing a cake. CCCS: 9.1 and 9.2
8. Prepare cakes rolled icing (i.e. fondant and marzipan). CCCS: 9.1 and 9.2

## **I. COOKIES (CONTINUED)**

**Student well be able to:**

1. Identify the characteristics of drop cookies and master the technique of making them. CCCS: 9.1 and 9.2
2. Explain the basic principles of pan preparation and cooling for cookies CCCS: 9.1 and 9.2
3. Identify the characteristics of bar cookies and master the technique of making them. CCCS: 9.1 and 9.2
4. Identify the characteristics of traditional rolled and cutout cookies and master the technique of making them. CCCS: 9.1 and 9.2
5. Identify the characteristics of stenciled cookies and master the technique of making them. CCCS: 9.1 and 9.2
6. Identify the characteristics of molded cookies and master the technique of making them. CCCS: 9.1 and 9.2
7. Identify the characteristics of twice-baked cookies and master the technique of making them. CCCS: 9.1 and 9.2
8. Identify the characteristics of piped cookies and master the technique of making them. CCCS: 9.1 and 9.2
9. Identify the component parts of glazed petits fours and master the technique of making t CCCS: 9.1 and 9.2

## **J. PIES, TARTS, AND FRUIT DESSERTS**

**Student well be able to:**

1. Master the technique of rolling dough and lining a pie or tart pan. CCCS: 9.1 and 9.2
2. Explain how to choose a pie or tart filling. CCCS: 9.1 and 9.2
3. Produce pies and tarts using the different methods for filling. CCCS: 9.1 and 9.2
4. Describe blind baking and how it applies to the chapter. CCCS: 9.1 and 9.2
5. Produce desserts with puff pastry. CCCS: 9.1 and 9.2
6. Prepare and use fresh fruit in a dessert. CCCS: 9.1 and 9.2
7. Explain the difference between a pie, cobbler, crisp, and tart. CCCS: 9.1 and 9.2
8. Master the technique of making a traditional strudel. CCCS: 9.1 and 9.2

## **K. INDIVIDUAL PASTRIES (CONTINUED)**

**Student well be able to:**

1. Prepare a variety of tartlets CCCS: 9.1 and 9.2
2. Explain the process for poaching fruit CCCS: 9.1 and 9.2
3. Master the assembly of layered cakes and roulades. CCCS: 9.1 and 9.2
4. Describe the styles and materials available for creating molded pastries. CCCS: 9.1 and 9.2
5. Master the selection of containers for individual pastries. CCCS: 9.1 and 9.2
6. Produce pastries using phyllo dough. CCCS: 9.1 and 9.2
7. Prepare piped pastries using pate a choux and baked meringue. CCCS: 9.1 and 9.2
8. Create pastries using croissant and Danish doughs. CCCS: 9.1 and 9.2

## **L. PLATED DESSERTS**

**Student well be able to:**

1. Discuss trends in plated desserts. CCCS: 9.1 and 9.2
2. Explain the pastry contrast wheel. CCCS: 9.1 and 9.2
3. Master dessert station mise en place. CCCS: 9.1 and 9.2
4. Select plated desserts suitable for banquets. CCCS: 9.1 and 9.2
5. Select the appropriate sauces to accompany desserts. CCCS: 9.1 and 9.2

## **M. Custards, Creams, Mousses, and Soufflés**

**Student well be able to:**

1. Describe the preparation method for baked custard. CCCS: 9.1 and 9.2
2. Explain the importance of a water bath. CCCS: 9.1 and 9.2
3. Unmold baked custard. CCCS: 9.1 and 9.2
4. Caramelize sugar using the dry method. CCCS: 9.1 and 9.2
5. Prepare a stirred cream and or pudding. CCCS: 9.1 and 9.2
6. Define gelatin and describe its key functions as a thickening agent. CCCS: 9.1 and 9.2
7. Prepare a steamed pudding. CCCS: 9.1 and 9.2
8. Produce a mousse. CCCS: 9.1 and 9.2
9. Prepare a hot soufflé. CCCS: 9.1 and 9.2

## **N. CHOCOLATES AND CONFECTIONS (CONTINUED)**

### **Student well be able to:**

1. Explain the basic principles of cream and egg ganache preparation. CCCS: 9.1 and 9.2
2. Prepare flavored ganache for truffles. CCCS: 9.1 and 9.2
3. Describe proper preparation techniques for forming truffles and other ganache confections. CCCS: 9.1 and 9.2
4. Explain the proper procedure for melting chocolate. CCCS: 9.1 and 9.2
5. Prepare tempered chocolate. CCCS: 9.1 and 9.2
6. Describe the steps for preparing molded chocolates. CCCS: 9.1 and 9.2
7. Describe the method for making dragees.
8. Prepare rochers and knackerli. CCCS: 9.1 and 9.2
9. Explain the procedure for cooking sugar to different stages. CCCS: 9.1 and 9.2
10. Prepare soft caramels and brittle. CCCS: 9.1 and 9.2

## **O. YEAST DOUGHS**

### **Student well be able to:**

1. After reading and studying this chapter, you should be able to: CCCS: 9.1 and 9.2
2. Explain the process of direct fermentation. CCCS: 9.1 and 9.2
3. Define the stages of mixing bread dough and mixing times and speeds. CCCS: 9.1 and 9.2
4. Describe how to accurately substitute one type of yeast for another. CCCS: 9.1 and 9.2
5. Apply the principle of Desired Dough Temperature. CCCS: 9.1 and 9.2
6. Master the technique of bulk fermentation. CCCS: 9.1 and 9.2
7. Explain how the preparation of fiber-enriched doughs differs from other doughs. CCCS: 9.1 and 9.2
8. Explain how enriched doughs differ from other doughs. CCCS: 9.1 and 9.2
9. Master the technique of indirect fermentation and the use of pre-ferments. CCCS: 9.1 and 9.2
10. Master the technique of working with wet doughs. CCCS: 9.1 and 9.2
11. Master a comprehension and application of sour dough starters. CCCS: 9.1 and 9.2
12. Describe how flavorings and garnishes are added to doughs. CCW: 9.1 and 9.2

## **P. YEAST-RAISED BREAD AND ROLLS (CONTINUED)**

**Student well be able to:**

1. Explain the importance of scaling and preshaping in the preparation of doughs. CCCS: 9.1 and 9.2
2. Explain the importance of "resting" dough or intermediate fermentation. CCWCS: 9.1 and 9.2
3. Understand the importance of final shaping. CCCS: 9.1 and 9.2
4. Explain the process of final fermentation. CCCS: 9.1 and 9.2
5. Master finishing techniques for yeast-raised breads and rolls. CCCS: 9.1 and 9.2
6. Understand the principles at work when baking yeast-raised doughs. CCCS: 9.1 and 9.2
7. Identify and master the guidelines for successfully making bagel dough. CCCS: 9.1 and 9.2

## **Q. PASTRY DOUGHS AND BATTERS**

**Student well be able to:**

1. Understand and describe the component parts and common characteristics of rubbed doughs and how they are used.
2. Understand and describe the component parts and common characteristics of short Doughs and how they are used. >
3. Understand and describe the component parts and common characteristics of crumb crusts and how they are used. > Understand the properties of pate a choux and how it is used, and master the technique of making it.
4. Describe the properties of strudel dough and how it is applied. Understand and describe the component parts and common characteristics of laminated doughs, how they are made, and how they are used.
5. Describe the difference between the various puff pastry dough preparations and explain the advantages of using each.

## **III. TEXTBOOKS AND INSTRUCTIONAL MATERIALS**

The Culinary Institute of America, Baking and Pastry, Mastering the art and craft, 2004



Julia Hill and Linda Blocker, Culinary Math, 2004

Gisslen, Wayne, Professional Baking 2nd Edition. New York: John Wiley & Sons, 1994.

#### **IV. INSTRUCTIONAL STRATEGIES**

Various teaching methods are utilized in this course. The pastry chef will demonstrate procedures in baking. Then the students will demonstrate their mastery of these procedures. Related theory work will be given in a culinary lab. Videos, guest bakers, pastry chefs and field trips are integral to the instruction of the curriculum.

#### **VI. STUDENT MASTERY / EVALUATION**

Satisfactory completion of this course will be determined by a mastery of 70% of course proficiencies as measured by: (40%), classroom participation and shop assignments (10%), quizzes (10%), homework assignments (10%), and uniforms.

Key:  
I - Introduce  
D - Developed in Depth  
R - Reinforced

#### **VII. SCOPE AND SEQUENCE CHART**

Suggested Grade  
Levels

SKILL TO BE LEARNED	9 <sup>th</sup> Grade	10 <sup>th</sup> Grade	11 <sup>th</sup> Grade	12 <sup>th</sup> Grade
Maintaining standards of appearance,	ID	ID	ID	IDR

sanitation, safety, and behavior appropriate to a food service professional.				
Knowledge to select formulas and ingredients, scale and mix ingredients.	ID	ID	ID	IDR
Knowledge of common ingredients in baking.	ID	ID	ID	IDR
Understand the types and roles of strengtheners, shortenings, sweeteners, flavorings, leaveners, and thickeners.	ID	ID	ID	IDR
Know how to Calculate ingredient weights using baker's percentages.	ID	ID	ID	IDR
Know how to Convert recipes to a new yield.	ID	ID	ID	IDR
Know the Differentiate between lean doughs, rich doughs, sponge doughs, and sourdoughs and give examples.	ID	ID	ID	ID

SKILL TO BE LEARNED	9 <sup>th</sup> Grade	10 <sup>th</sup> Grade	11 <sup>th</sup> Grade	12 <sup>th</sup> Grade
Understand how to Proof bakeshop items.	ID	ID	ID	IDR
Understand how to Mix yeast dough using the straight mix method.	ID	ID	ID	IDR
Know how to Prepare and compare yeast breads.	ID	ID	ID	IDR
Know how to Prepare different types of quick breads and cake batters.	ID	ID	ID	IDR
Understand the main functions of icings and determine which are best suited for different baked goods.	ID	ID	ID	IDR

Know how to Prepare and describe steamed puddings and dessert soufflés.	ID	ID	ID	IDR
Know how to Prepare pie dough using the 3-2-1 method.	ID	ID	ID	IDR
Know how to State in their own words the procedure for baking blind.	ID	ID	ID	IDR
Understand how to roll-in dough, phyllo dough, and pâte à choux.	ID	ID	ID	IDR
Know how to Prepare cookies using various makeup methods.	ID	ID	ID	IDR
Understand how chocolate is made, including chocolate liquor, cocoa butter, and cocoa powder.	ID	ID	ID	IDR

SKILL TO BE LEARNED	9 <sup>th</sup> Grade	10 <sup>th</sup> Grade	11 <sup>th</sup> Grade	12 <sup>th</sup> Grade
Demonstrate how to store chocolate properly.	ID	ID	ID	IDR
Know how to temper chocolate.	ID	ID	ID	IDR
Demonstrate how crème anglaise, pastry creams, and Bavarian creams are made, and how they are used in desserts.	ID	ID	ID	IDR
Know the steps used to prepare poached fruits and tortes.	ID	ID	ID	IDR

## **X. STUDENT HANDOUT**

### **Course Overview**

This course teaches the student the evolutionary stages of baking. From such basics as cakes, bread baking, quick breads like muffins, pies, cookies, puddings, and icings. To advance stages like, cake decorating, wedding cakes, ice creams and frozen desserts, éclairs, fruit tarts, chocolate work, and show pieces. To showcase our student work a European pastry cart of their creations from the bakery is featured in our school restaurant, Chez Technique.

The importance of correct baking and cooking temperatures and storage is stressed. Emphasis is placed on weights and measures, types of flour, fruits used in production and the development of efficiency in baking.

In addition to the cooking aspect of our baking department, there is a strong enforcement to student's sanitation and appearance. No student is allowed in shop without his or her uniforms. Nails are maintained and short as to not hinder the student performance. Hairs net are worn over the head. A clean apron is a daily part of the uniform. Students are responsible for the upkeep of their uniforms. All these steps help and prepare the student for real world standards.

### **PROFICIENCIES**

1. Establish personal standards of appearance, sanitation, safety, and behavior appropriate to a food service professional. CCCS 9.1 and 9.2
2. Enable the student to select formulas and ingredients, scale and mix ingredients. CCCS 9.1 and 9.2
3. Identify and use common ingredients in baking. CCCS 9.1 and 9.2
4. Identify and describe types and roles of strengtheners, shortenings, sweeteners, flavorings, leaveners, and thickeners. CCCS 9.1 and 9.2
5. Calculate ingredient weights using baker's percentages. CCCS 9.1 and 9.2
6. Convert recipes to a new yield. CCCS 9.1 and 9.2
7. Differentiate between lean doughs, rich doughs, sponge doughs, and sourdoughs, and give examples. CCCS 9.1 and 9.2
8. Proof bakeshop items. CCCS 9.1 and 9.2
9. Mix yeast dough using the straight mix method. CCCS 9.1 and 9.2
10. Prepare and compare yeast breads. CCCS 9.1 and 9.2
11. Prepare different types of quick breads and cake batters. CCCS 9.1 and 9.2

## **PROFICIENCIES (Continued)**

12. Identify the main functions of icings and determine which are best suited for different baked goods. CCCS 9.1 and 9.2
13. Prepare and describe steamed puddings and dessert soufflés. CCCS 9.1 and 9.2
14. Prepare pie dough using the 3-2-1 methods. CCCS 9.1 and CCCS 9.2
15. State in their own words the procedure for baking blind. CCCS 9.1 and 9.2
16. Describe roll-in dough, phyllo dough, and pâte à choux. CCCS 9.1 and 9.2
17. Prepare cookies using various makeup methods. CCCS 9.1 and 9.2
18. Explain how chocolate is made, including chocolate liquor, cocoa butter, and cocoa powder. CCCS 9.1 and 9.2
19. Demonstrate how to store chocolate properly. CCCS 9.1 and 9.2
20. State how to temper chocolate. CCCS 9.1 and 9.2
21. Explain how crème anglaise, pastry creams, and Bavarian creams are made, and how they are used in desserts. CCCS 9.1 and 9.2
22. List the steps used to prepare poached fruits and tortes. CCCS 9.1 and 9.2