

CHAPTER 1

THE FOOD-SERVICE INDUSTRY

Chapter Goals

After studying this chapter, the student should be able to:

1. Name and describe four major developments that have significantly changed the food service industry in the 20th century.
2. Identify seven major stations in a classical kitchen.
3. Explain how the size and type of an operation influence the organization of the modern.
4. Identify and describe three skill levels of food production personnel.
5. Identify eight behavioral characteristics that food service workers should develop and maintain to achieve the highest standards of professionalism.

Chapter Outline

Points of emphasis

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| I. | A History of Modern Food Service | The development of modern kitchens and cooking techniques.

The importance of Escoffier's contributions.

The influence of modern technology on food service. |
| II. | The Organization of Modern Kitchens | The purpose of kitchen operations; types of food service operations; stations or positions in modern kitchens; skills required for various jobs. |
| III. | Standards of Professionalism | Importance of professional attitudes; importance of experience. |

Chapter Overview and Suggestions

This chapter gives the students an overall view of the profession they are entering. Most instructors find that students like to read this kind of background information, to help them put the industry in perspective. Instructors with limited class time may wish to assign this chapter as outside reading.

The discussion of professionalism has the most direct bearing on the students' ultimate success in their careers.

The topics of *sous vide* and *molecular gastronomy* are introduced in this chapter, but more detailed discussion of these topics is included in Chapter 4.

If time is available: visit a commercial kitchen, either as a class or as individual assignments. Students write a report on their observations, including the following information:

Type of facility (restaurant, hospital kitchen, etc.) and the type of foods being prepared.

Size of facility (number of employees, number of meals served).

Titles of employees, tasks being performed by each, and the skills required.

Follow with class discussion of observations and impressions.

Key Points to Review

How have the following developments changed the food service industry: development of new equipment; availability of new food products; greater understanding of food safety and nutrition?

How have international cuisines influenced and changed cooking in North America?

What are the major stations in a classical kitchen? What are their responsibilities?

How do the size and type of a food service operation affect how the kitchen is organized?

What are the three basic skill levels of modern kitchen personnel?

What are eight personal characteristics that are important to the success of a food service professional?

CHAPTER 2 SANITATION AND SAFETY

Chapter Goals

After studying this chapter, the student should be able to:

1. Describe steps to prevent food poisoning and food-borne diseases in the following areas: personal hygiene; food handling and storage techniques; cleaning and sanitizing procedures; and pest control.
2. Demonstrate safe workplace habits that prevent injuries from the following: cuts, burns, operation of machinery and equipment, and lifting.
3. Identify safe workplace habits that minimize the likelihood of fires and falls.

Chapter Outline

Points of emphasis

Sanitation

I. Food Hazards

Hazards:

Biological
Chemical
Physical

Conditions for bacteria growth:

Food
Moisture
Temperatures between 41° and
135°F (5° and 57°C): Food Danger
Zone
Air (for aerobic bacteria) or lack of
air (for anaerobic bacteria)
Time

Protection:

Keep bacteria from spreading
Keep bacteria from growing.
Kill bacteria

Emphasize means of prevention of the
diseases listed.

II. Personal Hygiene

Most food-borne diseases are caused by
bacteria spread by food workers.

- III. Food Storage
 - Prevent contamination of foods.
 - Prevent growth of bacteria in foods
 - The Food Danger Zone

- V. Food Handling and Preparation
 - Prevent cross-contamination
 - Keep foods out of the Food Danger Zone
 - Minimum Safe Internal Temperatures

- VI. Cleaning and Sanitizing Equipment
 - Emphasize proper procedures.

- VII. Rodent and Insect Control
 - "Build them out" is the best protection.

- VIII. Setting Up a System for Food Safety
 - Introduction to HACCP

Safety

- I. The Safe Workplace
 - Safety as an attitude.

- II. Preventing Cuts
 - Discuss safety as related to practical situations, not just as a list of rules to be memorized.

- III. Preventing Burns

- IV. Preventing and Dealing with Fires

- V. Preventing Injuries from Machines and Equipment

- VI. Preventing Falls

- VII. Preventing Strains and Injuries

Chapter Overview and Suggestions

It is important to introduce students to principles of sanitation and safety before they actually begin to work in the laboratory. You may wish to combine this chapter with Chapter 3 (Tools and Equipment) as part of the students' orientation to the laboratory.

Discuss and demonstrate equipment necessary for cleaning, sanitation, and food storage.

Emphasize personal hygiene, clean, neat uniforms, etc.

Demonstrate safe practices such as how to carry knives, lift and carry heavy objects, and move safely in a crowded, busy kitchen.

Identify dangerous equipment and demonstrate safe use (see Chapter 3). Have students practice under careful supervision.

Key Points to Review

What six conditions are necessary for the growth of bacteria?

What are potentially hazardous foods?

What are the three ways to protect against bacteria?

Besides bacteria, what other hazards can make food unsafe?

What is cross-contamination?

What are the important rules of personal hygiene? List as many as you can.

What is the Food Danger Zone?

What is the four-hour rule?

What does *minimum internal cooking temperature* mean?

How should cooked foods be cooled?

What are the steps in the procedure for manual dishwashing? for mechanical dishwashing?

What are the four ways to protect against rodents and insects? Which of these is the most effective?

What does the term *flow of food* mean?

What does the term *critical control point* mean?

What are the seven steps of the HACCP system?

What workplace habits can help you prevent injuries from cuts and burn and from kitchen equipment?

How can you prevent fires in the kitchen?

CHAPTER 3 TOOLS AND EQUIPMENT

Chapter Goals

After studying this chapter, the student should be able to:

Identify the do's and don'ts associated with the safe and efficient use of standard cooking equipment, processing equipment, holding and storage equipment, measuring devices, and knives, hand tools, and small equipment.

Chapter Outline

<u>Outline and page numbers</u>	<u>Points of emphasis</u>
I. Introduction to Quantity Food Equipment	Importance of understanding the proper, safe handling and maintenance of all equipment. Importance of practicing energy conservation.
II. Cooking Equipment	Identification and correct use of all equipment in your laboratory and in students' tool kits.
III. Processing Equipment	
IV. Holding and Storage Equipment	
V. Pots, Pans, and Containers	
VI. Measuring Devices	
VII. Knives, Hand Tools, and Small Equipment	

Chapter Overview and Suggestions

This chapter is organized as a sort of catalog of basic equipment and can be used as a unit of study, as part of the students' orientation to the laboratory, and as a reference tool

throughout the students' lab work. Guidelines for use of large equipment are included. This information should be related to the specific equipment and models in your laboratory.

Demonstrate equipment in your lab, including use, safety features, location of printed instructions on the equipment's operation, breakdown, and cleaning.

After demonstration, have students practice under supervision or have them repeat your demonstration to the class.

Key Points to Review

What are the four basic types of cooktops?

What is the difference between a standard oven and a convection oven? List four guidelines operating each type?

What is the difference between a broiler, a salamander, a grill, and a griddle?

What are four guidelines for operating a standard deep fryer? Describe the general procedure for cleaning a deep fryer.

What are four guidelines for the safe operation of a vertical mixer? What three types of beater attachment are used most often on a mixer, and what are they used for?

What are five guidelines for the correct operation of a rotation chopper (buffalo chopper)?

What are five guidelines for the safe operation of a slicing machine?

What are five kinds of equipment used to keep foods out of the Food Danger Zone?

How does the metal used to make a cooking pan affect its cooking qualities?

What equipment is used to measure most recipe ingredients?

What are five kinds of equipment used to measure foods by volume?

What are the parts of a chef's knife? What metals are used to make high-quality knife blades?

What knife is the most often used in the professional kitchen? Name and describe other important knives and their purposes.

CHAPTER 4 BASIC PRINCIPLES OF COOKING AND FOOD SCIENCE

Chapter Goals

After studying this chapter, the student should be able to:

1. Name the most important components of foods and describe what happens to them when they are cooked.
2. Name and describe the three ways in which heat is transferred to food in order to cook it.
3. Describe two factors or changes in cooked foods that determine doneness.
4. List three factors that affect cooking times.
5. Explain the advantage of boiling or simmering in a covered pot. Describe three situations in which a pot should not be covered during simmering or boiling.
6. Explain how cooking temperature affects the doneness characteristics of a food item.
7. Explain the differences between moist-heat cooking methods, dry-heat cooking methods, and dry-heat methods using fat.
8. Describe each basic cooking method used in the commercial kitchen.
9. Identify five properties that determine the quality of a deep-fried product.
10. Describe the two main steps in the process of cooking *sous vide*.
11. List six safety guidelines for cooking *sous vide*.
12. Explain the difference between a seasoning and a flavoring ingredient and give examples of each.
13. Identify appropriate times for adding seasoning ingredients to the cooking process in order to achieve optimal results.
14. Identify appropriate times for adding flavoring ingredients to the cooking process in order to achieve optimal results.
15. List eleven guidelines for using herbs and spices in cooking.

Chapter Outline

Points of emphasis

Heat and Food

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| I. What is Heat? | The object of cooking is to create certain changes in foods: coagulation of proteins, gelatinization of starches, softening of fiber, and so on. Importance of knowing what these changes are so you can control them. |
| II. Heat Transfer | How different cooking processes depend on 3 types of heat transfer: conduction, convection, and |

radiation.

III. Heat Management

Time needed to cook to desired doneness depends on many variables: temperature, speed of heat transfer, characteristics of the food being cooked.

Cooking Methods

I. Moist-Heat Methods

Importance of knowing and using terminology correctly so that individuals can communicate with each other effectively.

II. Dry-Heat Methods

Relate cooking terms to equipment.

III. Dry-Heat Methods Using Fat

Detailed discussion of guidelines for deep-frying and care of frying fat.

IV. Microwave Cooking

V. Cooking Sous Vide

Emphasize safety measures.

VI. Molecular Gastronomy

VII. Summary of Cooking Terms

Building Flavor

I. Building Flavor Profiles

Primary and supporting flavors and how they function.

General concepts of flavor building:

Every ingredient has a purpose.

Ingredients work together in harmony or contrast.

Balance the ingredients.

Balance whole plate and whole meal, not just individual recipes.

Learning from classic flavor profiles.

II. Seasoning and Flavoring Ingredients

Importance of learning to judge and adjust flavors.

Main ingredients, not seasonings and spices, are main sources of flavor. Adding spices is

no substitute for careful cooking.

Avoid overuse of seasonings, herbs, and spices.

III. Using Herbs and Spices

Identification of basic seasonings, spices, fresh and dried herbs.

III. Converting Recipes

IV. Food Cost Calculations

V. Controlling Food Costs (120-122)

CHAPTER 5 MENUS, RECIPES, AND COST MANAGEMENT

Chapter Goals

After studying this chapter, the student should be able to:

1. Explain how the makeup of a menu depends on the type of meal and the institution using it.
2. Describe the differences between static and cycle menus, and between à la carte and table d'hôte menus.
3. List in order of their usual service the various courses that might appear in modern menus.
4. Devise balanced menus that contain an adequate variety of foods and that can be efficiently and economically prepared.
5. Describe the problems and limitations of written recipes and the importance of using judgment when you cook.
6. Discuss the structure and functions of standardized recipes.
7. Use and understand the recipes in this book to practice basic cooking techniques.

8. Measure ingredients and portions.
9. Convert recipes to higher or lower yields.

Chapter Outline

Points of emphasis

I.	Menu Forms and Functions	Central importance of the menu in any operation.
II.	Building the Menu	<p>Arrangement of courses in classical and modern menus.</p> <p>Factors to consider in writing balanced menus</p> <p>Importance of and techniques for complete utilization of foods.</p> <p>Importance of labeling menu items correctly.</p>
III.	The Written Recipe	<p>The limitations of written recipes, and why no recipe can be foolproof. The necessity for the cook to use judgment.</p> <p>Differences in recipe format and structure; standardized recipes and instructional recipes; incorporating HACCP into standardized recipes.</p>
IV.	Measurement	<p>Importance of measuring accurately.</p> <p>Measuring techniques. Systems of measurements.</p>
III.	Converting Recipes	Importance of math in the kitchen. Basic formulas and problems in converting recipes.
IV.	Food Cost Calculations	<p>Food service operations are businesses: ability to work with food cost calculations is an essential skill. Again, the importance of math in the kitchen.</p> <p>How to do raw yield tests and cooked yield</p>

tests; how to calculate portion costs.

V. Controlling Food Costs

Role of menu planning in cost control.

Guard against loss during all stages of flow of food, from purchasing to serving.

CHAPTER 7 MISE EN PLACE

Chapter Goals

After studying this chapter, the student should be able to:

1. Define *mise en place* and explain why care must be taken in its planning.
2. Describe five general steps used in planning *mise en place*.
3. Explain the difference in preparation requirements for set meal service and extended meal service.
4. List five guidelines to observe when sharpening a chef's knife.
5. Demonstrate major cutting techniques required in food preparation.
6. Describe basic precooking and marinating procedures.
7. Set up and use a standard breading station.
8. Define *convenience foods* in the context of *mise en place* and list eight guidelines for their use.

Chapter Outline

Points of emphasis

I.	Planning and Organizing Production	Critical importance of mise en place or setting up the station. How to plan production. How production planning depends on style of service.
II.	Using the Knife	Basic knife handling and cutting techniques. How to produce basic cuts and shapes. Why it is important to cut in uniform shapes and sizes: even cooking and better appearance.
III.	Preliminary Cooking and Flavoring	Reasons for blanching certain foods. Types of marinades and their ingredients. Guidelines for proper marination.
IV.	Preparation for Frying	Procedures for setting up a breading station and for breading foods correctly.
V.	Handling Convenience Foods	Importance of handling all foods, including convenience foods, with care. Guidelines for handling convenience foods.

Chapter Overview and Suggestions

The importance of planning and of good mise en place can't be stressed enough. Thorough pre-preparation is critical to efficient production, and students should be impressed with this fact early in their studies.

Knife handling techniques provide opportunity for intensive student lab experience before actually proceeding to later production chapters. After careful demonstration of your preferred methods for using the steel and sharpening stone and of basic cutting techniques, have students practice with such products as onions, potatoes, carrots, and turnips. Emphasize proper and complete setting up of cutting station before beginning to work.

Breading may be demonstrated and practiced at this point or reserved for actual production work at a later stage in lab classes. Either way, proper mise in place should be emphasized: setting up the breading station completely and properly before actually beginning to bread a product.