**Sanitation (HACCP)**

**TS1 (60 Hours)**

**Course Description:**

The major aim of this course is to deliver a comprehensive training of key food safety concepts. It is the ideal solution for the academic setting for students in need of more extensive food safety training. The content in this course goes beyond the principles found in cookbooks and adds greater depth and breadth of food safety practices by featuring expanded sections on food defense, high-risk populations, active managerial control, and crisis management. The course reflects the latest updates from the 2009 *FDA Food Code*, the HACCP new science-based and industry best practices. It also focuses more intensely on the preventative measures to keep food safe. The end result is content that is more focused, leading to stronger food safety practices and a better informed student.

This course is an all-inclusive global food defense solution intended to help students protect families, friends, colleagues, public health, their brands, and the food industry from deliberate contamination. Students are guided through creating a food defense culture, writing a food defense plan, and building the confidence of both managers and employees.

**Learning Outcomes:**

* Recognize the importance of food safety and sanitation as the basis for preventing food borne illness in retail food establishments.
* Identify the major types of potentially hazardous foods and the characteristics that are common to those groups of food.
* Identify potential problems related to temperature abuse of foods.
* Apply purchasing and receiving procedures that enhance the protection of food products.
* Recognize the usefulness of the HACCP system as a food protection tool.
* Identify the criteria that should be used when determining the need for each type of equipment.
* Describe the different processes that can be used to clean and sanitize equipment and utensils in a food establishment.

**Topics to Cover:**

1. Food safety and sanitation management
2. Hazards to food safety
3. Factors that affect foodborne illness
4. Following the food product flow
5. The hazard analysis critical control point (HACCP) system: A safety assurance process.
6. Facilities, equipments, and utensils
7. Cleaning and sanitizing operations

**Chapter One**

**Food Safety and Sanitation Management**

**Learning objectives:**

1. State the problems caused by foodborne illness for both; the individuals who became ill and the food establishment blamed for the incident.
2. Identify trends in menus and consumer use of food products prepared in food establishments.
3. Explain the role of government regulation in retail food safety.
4. Recognize the term Hazard Analysis Critical Control Point (HACCP) as a system for food protection.

**Contents:**

* 1. Food safety-why all the fuss
  2. Why me?
  3. Changing trends in food consumption and choices
  4. The problem: Foodborne illness
  5. Contamination
  6. Microorganisms (Germs or Microbes)
  7. The food flow
  8. A new approach to an old problem
  9. Facility planning and design
  10. Keeping it clean and sanitary
  11. Accident prevention and crisis management
  12. The role of government in food safety
  13. The role of the food industry in food safety

**Chapter Two**

**Hazards to Food Safety**

**Learning Objectives** :

After reading this chapter, you should be able to:

1. Identify and give examples of each of the three main types of food borne hazards.
2. Discuss how infections, intoxications, and toxin-mediated infections cause food borne illness.
3. List the factors that promote bacterial growth in foods.
4. Identify the food temperature in the danger zone.
5. Explain how temperatures in the danger zone affect bacterial growth.

**Contents**:

* 1. Foodborne Illness
     1. Symptoms
     2. Classification
  2. Foodborne hazards
  3. Bacteria
  4. Spoilage and disease-causing bacteria
  5. Bacterial growth
  6. What bacteria need in order to multiply
  7. Source of food
     1. Acidity
     2. Temperature
     3. Time
     4. Oxygen
     5. Moisture
  8. Potentially hazardous foods (PHF)
  9. Ready-to-eat foods
  10. Foodborne illness caused by bacteria
  11. Foodborne illness caused by non-sporeforming bacteria
  12. Foodborne illness caused by viruses
  13. Foodborne illness caused by parasites
  14. Foodborne illness caused by chemicals
  15. Added man-made chemicals
  16. Foodborne illness caused by physical hazards

**Chapter Three**

**Factors That Affect Foodborne Illness**

**Learning Objectives:**

1. Describe how to properly measure and maintain food temperatures to ensure that foods are safe for consumption.
2. Identify potential problems related to a food worker’s poor personal hygiene.
3. Explain how to improve personal hygiene habits to reduce the risk of foodborne illness.
4. Identify potential problems related to cross contamination of food.
5. Discuss procedures and methods to prevent cross contamination.

**Contents:**

* 1. Factors that contribute to foodborne illness
  2. What are time and temperature abuse?
  3. How to measure food temperatures
  4. Measuring food temperature
  5. Keep cold foods cold and hot foods hot
  6. The importance of handwashing and good personal hygiene
     1. Personal habits
     2. Personal health
     3. Cross contamination
     4. Avoiding cross contamination
     5. Other sources of contamination

**Chapter Four**

**Following the Food Product Flow**

**Learning Objectives:**

1. Recognize codes and symbols used to designate food products that have been inspected by governmental agencies.
2. Evaluate equipment used to transport food products to food establishments.
3. Use approved devices to measure temperatures in food products safely and accurately.
4. Recognize product defects and refuse acceptance of products that do not meet established food safety criteria.
5. Discuss safe methods to thaw frozen foods.
6. Identify internal temperature requirements for cooking foods.
7. Explain the proper methods used to cool foods.
8. Discuss the importance of employee health and hygiene related to food flow.

**Contents:**

* 1. A sound food supply
  2. Buying from approved sources
  3. Strategies for determining food quality
  4. Measuring temperatures at receiving and storage.
  5. Following the flow of food
     1. Receiving
     2. Packaged food
     3. Red meat products
     4. Game animals
     5. Poultry
     6. Eggs
     7. Fluid milk and milk products
     8. Cheese
     9. Butter
     10. Fish
     11. Vegetables and fruits
     12. Juice and cider products
     13. Frozen food
  6. Proper storage of food
     1. Types of storage
     2. Storage conditions for food
     3. Preparation and service
     4. Ingredient substitution
     5. Hand washing
     6. Avoiding temperature abuse
     7. Freezing
     8. Thawing
     9. Cold storage
     10. Cooking
     11. Cooling
     12. Hot-holding, cold-holding, reheating
     13. Reduced oxygen packaging
  7. Serving safe food
  8. Discarding or reconditioning food
  9. Refilling returnable containers
  10. Self-service bar
  11. Temporary and mobile food facilities
  12. Vending machines
  13. Home meal replacement

**Chapter Five**

**The Hazard Analysis Critical Control point (HACCP) System:**

**A Safety Assurance Process**

**Learning Objectives:**

1. Recognize the types of potentially hazardous foods that commonly require a HACCP system to ensure product safety.
2. Identify the principles involved in implementing a HACCP system.
3. Define: a) Hazard b) Hazard analysis c) Critical control point d) critical limit.
4. List hazards (risk factors) related to each product analyzed.
5. State measures used to correct potential problems.
6. Apply the HACCP system to analyze and protect food items from contamination during processing, preparation, and service.

**Contents:**

* 1. The problem
  2. The solution
  3. The HACCP system
  4. The seven principles in a HACCP system
     1. Principle 1-Hazard analysis (biological, chemical, physical)
     2. Principle 2-Identify critical control points (time as a public health control)
     3. Principle 3-Establish the critical limits (thresholds) which must be met at each CCP
     4. Principle 4-Estalish procedures to monitor CCPs
     5. Principle 5-Establish the corrective action to be taken when monitoring shows that a critical limit has been exceeded
     6. Principle 6-Estalish procedures to verify that the HACCP system is working
     7. Principle 7-Establish an effective record keeping system that documents the HACCP system
  5. Education and training
  6. Roles and responsibilities under HACCP

**Chapter Six**

**Facilities, Equipments, and Utensils**

**Learning Objectives:**

1. Identify ways in which the design and layout of facilities contribute to the efficiency and effectiveness of a food establishment.
2. Understand the importance of purchasing and properly maintaining equipment and utensils and the influence they have on food safety.
3. Describe how work tasks are conducted in work centers and how the preparation and service of food flows through a production area.
4. Understand the basic design and construction requirements that apply to floor-and table-mounted equipment.
5. Describe how proper installation and maintenance affect the operation of equipment used during the course of food production, storage, and service.
6. Explain the role of proper lighting in food production and warewashing.
7. Explain how proper heating, air conditioning, and ventilation affect food sanitation and worker comfort and productivity.

**Contents:**

* 1. Design, layout, and facilities
  2. Regulatory considerations
  3. Work center planning
  4. Equipment selection
     1. Need
     2. Cost
     3. Size and design
  5. Construction materials
     1. Metals
     2. Stainless steel
     3. Plastic
     4. Wood
  6. Types of equipment
     1. Cooking equipment
     2. Ovens
     3. Steam-jacketed kettles
     4. Refrigeration and low-temperature storage equipment
     5. Reach-in refrigeration
     6. Walk-in refrigerators
     7. Cook-chill and rapid-chill systems
  7. Other types of food equipment
     1. Slicers
     2. Mixers, grinders, and choppers
     3. Ice machine
     4. Single-service and single-use articles
  8. Dishwashing equipment
     1. Manual washing
     2. Mechanical washing
  9. Installation
  10. Maintenance and replacement
  11. Lighting
  12. Heating, ventilation, and air conditioning (HVAC)

**Chapter Seven**

**Cleaning and Sanitizing Operations**

**Learning Objectives:**

1. Recognize the difference between cleaning and sanitizing.
2. Identify the primary steps involved in manually and mechanically cleaning and sanitizing equipment and utensils.
3. Describe the factors that affect cleaning efficiency.
4. Identify the procedures used to clean environmental areas in a food establishment.

**Contents:**

* 1. Principles of cleaning and sanitizing
     1. removal of food particles
     2. Application of cleaning agents
     3. Soaking
     4. Spray methods
     5. Clean-in-place (CIP) system
     6. Abrasive cleaning
     7. Rinsing
  2. Factors Affecting cleaning efficiency
     1. Type of soil to be removed
     2. Water quality
     3. The detergent or cleaner to be used
     4. Water temperature
     5. Water velocity or force
     6. Time detergent remains in contact with the surface
     7. The concentration of cleaner
  3. Sanitizing principles
     1. Heat sanitizing
     2. Chemical sanitizing
     3. Factors that affect the action of chemical sanitizers
     4. Chlorine
     5. Iodine
     6. Quaternary ammonium
  4. Mechanical dishwashing
  5. Manual dishwashing
  6. Cleaning fixed equipment
  7. Cleaning environmental areas
     1. Ceilings
     2. Walls
     3. Floors
  8. Equipment and supplies used for cleaning

**Recommended Textbook: Essentials of Food Safety & Sanitation, Third Edition.**

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