Welcome to the
Seafood HACCP Alliance Training Course

Congratulations, you've successfully registered for the Internet course and are now ready to begin learning about HACCP, the FDA Seafood HACCP regulation, and how to use the FDA Fish and Fishery Products Hazards and Controls Guide.

As explained on the Course Site Map, the Internet course consists of 12 Modules that correspond to the first 12 chapters in the Seafood HACCP Alliance Training Curriculum manual. This is Module 1, Introduction to HACCP. In this module, you'll learn what HACCP is, how it was developed, and how it is different from traditional approaches to food safety. There are 14 pages and 4 questions in this Module.
What is HACCP?

HACCP stands for Hazard Analysis and Critical Control Point

You may not have heard the term "HACCP" (pronounced hassip) until recently, but it isn't a new term or a new concept.

HACCP is a preventive system of food safety controls rather than a reactive one. It's designed to help you anticipate and prevent food safety problems before they occur, rather than trying to fix or correct these problems after they've already happened.
**HACCP** requires that you review your operation and identify all of the important food safety hazards associated with your products and with your process. This review is called *Hazard Analysis*. Based on this analysis, a system of controls is developed at the *Critical Control Points* or CCPs in your operation. CCPs are processing steps where you can implement control procedures that will ensure that food safety hazards are prevented, eliminated, or reduced to an acceptable level in the products you produce or handle.

**HACCP is designed to help food processors produce safer food products for consumers.** The types of food safety hazards that are controlled in a HACCP system can include harmful microorganisms, harmful chemicals, and/or physical contaminants.
How was HACCP developed?—HACCP History 101

The Pillsbury Company pioneered the application of the HACCP concept to food production during its efforts to supply food for the U.S. space program in the early 1960s. Pillsbury decided that their existing quality control techniques didn't provide enough assurance that the food eaten by astronauts would not be contaminated during food production. The company found that the end product testing necessary to assure that all products were safe would be so extensive that hardly any food would be left for the space flights. Pillsbury concluded that the only way to ensure safety would be to develop a preventive system that kept all food safety hazards from occurring during the food production process. Since then, Pillsbury's approach has been recognized worldwide as the state-of-the-art system for controlling food safety.
The first time that the HACCP concept was applied to food processing in the U.S. was in 1973. Responding to several outbreaks of botulism, the FDA required the canned food industry to implement HACCP-type controls. These controls were used to ensure that all canned foods were processed adequately to eliminate the food safety hazard associated with the bacteria *Clostridium botulinum*, which causes botulism. Almost all cases of botulism from canned food have been eliminated since this system was implemented.
In the mid 1980s, the National Academy of Sciences was asked to evaluate the effectiveness of food regulation in the United States. **The Academy recommended that the HACCP approach be adopted by all regulatory agencies and that it be mandatory for all food processors.** This recommendation led to the formation of a National Advisory Committee on Microbiological Criteria for Foods (NACMCF). This committee standardized the HACCP concept so that it could be uniformly applied to all foods by both industry and regulatory authorities. **The NACMCF committee established the Seven Principles of HACCP that are the basis of this training program.**
The Seven Principles of HACCP

To establish a uniform way to apply the HACCP concept to the production of any food, seven HACCP principles were developed. These principles ensure that a HACCP plan:

- Identifies all food safety hazards that are reasonably likely to occur, and
- Establishes a system at the critical control points where these food safety hazards can be controlled.

The Seven Principles of HACCP are:

1. Conduct a Hazard Analysis.
2. Determine the Critical Control Points (CCPs) in the process.
3. Establish Critical Limits.
5. Establish Corrective Actions.
7. Establish Record Keeping Procedures.

Each of these seven principles of HACCP will be explained in more detail in Course Modules 5 through 11.
HACCP is being used in the U.S. and around the world

The FDA's Seafood HACCP regulation, the USDA's Meat and Poultry HACCP regulations, and other domestic and international HACCP control systems are all based on the Seven Principles of HACCP.

This standardized HACCP system has also been endorsed worldwide by organizations such as Codex Alimentarius (a commission of the United Nations), the European Union, and several countries including Canada, Australia, New Zealand and Japan.
HACCP is a dynamic system

It's important to understand that **HACCP is not a zero risk system**. HACCP is not a "magic bullet" that will make all food safety problems disappear. It is designed to prevent, eliminate, or minimize the risk that a food-safety problem will occur.

**The HACCP concept is also flexible.** New scientific information or new technologies that improve our ability to control or monitor different food safety hazards are continually being developed and incorporated into HACCP systems.

**HACCP is not a stand-alone system.** HACCP is built upon an existing foundation of food-safety programs or regulations such as the Good Manufacturing Practice (GMPs) regulations that address such issues as sanitation and personal hygiene. The GMPs and other requirements that form a foundation for HACCP will be explained in more detail in Module 3.
HACCP Inspections and Traditional Inspections

The HACCP concept is designed to get both food processors and regulators (inspectors) to focus their attention on the parts of a process that are most likely to affect the safety of the product. The inspection of plants operating under HACCP plans differs from traditional inspection methods. Traditional inspection methods evaluate processing practices on the day or days of the inspection. With a HACCP system, inspectors can look at what is happening in the plant on the day or days of the inspection as well as over a longer period of time by examining the firm's monitoring and corrective action records.

A traditional inspection could be compared to a photograph that provides a snapshot of what was occurring at the time the inspection was conducted. In contrast, a HACCP inspection would be more like a video because inspectors will use records to view what has been happening in the plant over a period of time.
HACCP requires a new regulatory approach

Since HACCP is focused on the processing system, both regulators and industry need to communicate and to work with each another. The industry's job is to develop and implement an adequate HACCP plan for their unique operations. The inspector's job is to verify that each firm's HACCP plan has properly identified all food safety hazards that are reasonably likely to occur, and that these hazards are being consistently controlled. The inspector will accomplish this by surveying the plant and then reviewing the HACCP plan and records. Regulatory inspections will also continue to look for compliance in areas such as sanitation, economic fraud, food standards, etc.

The national committee that developed the seven principles of HACCP defined the roles of industry and the regulatory agencies under a HACCP system in the following way: "It is the responsibility of the food industry to develop and implement HACCP plans, and for the regulatory agencies to facilitate this process." In other words, the role of the government is to ensure that the industry adheres to its role.
Definitions for HACCP Terms

As you learn more about HACCP, there will be many new definitions that you need to understand. Definitions for most of the HACCP words or terms used in this course are provided below. You don’t need to memorize these definitions, but it may be helpful to go back to them if you start to get confused.

A Definitions button has been added to the navigation tools. It will appear on each page of the remaining modules. You can click on the "Definitions" button at any time to come back to these definitions.

Definitions*

- **Continuous Monitoring**: Uninterrupted collection and recording of data such as temperature on a strip chart.
- **Control**: (a) (verb) To manage the conditions of an operation to maintain compliance with established criteria. (b) (noun) The state in which correct procedures are being followed and criteria are being met.
- **Control Measure**: Any action or activity that can be used to prevent, eliminate or reduce a significant hazard. (Before 1998 control measures were called preventive measures).
- **Control Point**: Any point, step or procedure at which biological, physical or chemical factors can be controlled.
- **Corrective Action**: Procedures followed when a deviation occurs.
- **Critical Control Point (CCP)**: A step at which control can be applied and is essential to prevent or eliminate a food-safety hazard or reduce it to an acceptable level.
- **CCP Decision Tree**: A sequence of questions asked to determine whether a control point is a CCP.
- **Critical Limit**: A maximum and/or minimum value to which a biological, chemical or physical parameter must be controlled at a CCP to prevent, eliminate or reduce to an acceptable level the occurrence of a food-safety hazard.
- **Deviation**: Failure to meet a critical limit.
- **HACCP**: A systematic approach to the identification, evaluation and control of food-safety hazards.
- **HACCP Plan**: The written document that is based upon principles of HACCP and that delineates the procedures to be followed.
- **HACCP System**: The result of the implementation of the HACCP plan.
- **HACCP Team**: The group of people who are responsible for developing, implementing and maintaining the HACCP system.
- **Hazard**: A biological, chemical or physical agent that is reasonably likely to cause illness or injury in the absence of its control.
- **Monitor**: To conduct a planned sequence of observations or measurements to assess whether a CCP is under control and to produce an accurate record for future use in verification.
- **Operating Limits**: Criteria that are more stringent than critical limits and that are used by an operator to reduce the risk of a deviation.
- **Prerequisite Programs**: Procedures, including Good Manufacturing Practices (GMPs) that address operational conditions providing the foundation for the HACCP system.
- **Severity**: The seriousness of a hazard (if not properly controlled).
- **Validation**: The element of verification focused on collecting and evaluating scientific and technical information to determine if the HACCP plan, when properly implemented, will effectively control the hazards.
- **Verification**: Those activities that determine the validity of the HACCP plan and that the system is operating according to the plan.

*Definitions are from the National Advisory Committee on Microbiological Criteria for Foods’ Hazard Analysis and Critical Control Point Principles and Application Guidelines, 1997.
Acronyms for HACCP Terms

As you learn more about HACCP, a number of different acronyms are commonly used that might be confusing to you. An acronym is a word formed from the first letter of each word in a series of words. The term HACCP is an acronym formed from the first letter of the words Hazard Analysis Critical Control Point. The following list has some other acronyms used in this training course. You don’t need to memorize these acronyms, but it may be helpful to go back to them if you start to get confused. You can click on the “Definitions” button at any time to come back to these acronyms.

**Acronyms**

- **CCP**: Critical control point
- **CL**: Critical limit
- **FDA**: Food and Drug Administration
- **GMP**: Good Manufacturing Practice
- **HACCP**: Hazard Analysis and Critical Control Point
- **MIG**: Mercury-in-glass thermometer
- **NAS**: National Academy of Science
- **NACMCF**: National Advisory Committee on Microbiological Criteria for Foods
- **PPM**: Parts per million
- **SOP**: Standard Operating Procedure
- **SSOP**: Sanitation Standard Operating Procedure
Check Your Knowledge

Now you need to return to Module 1 via the Internet.

Click through the text pages until you get to the Check Your Knowledge page (page 1-14). Submit your answers before moving on to Module 2.

Good Luck!