COURSE CODE *FSM 202*
COURSE TITLE: *Public Health and Foodservice Interface*
NUMBER OF UNITS: *3 Units*
COURSE DURATION: *Three hours per week*

COURSE DETAILS

Course Coordinator: Dr. Olusegun Atanda B.Sc., M.Sc., MBA., Ph.D.
Email: Olusegunatanda@yahoo.co.uk
Olusegunatanda@unaab.edu.ng
Office Location:
Other Lecturers:

COURSE CONTENT:

Identification and sources of micro-organism in foodservice operations. The causes and prevention of Food borne illness are stressed. Importance of Microbiology concept to human health. Principles and practices involved in safe handling of food products including HACCP procedures.

COURSE REQUIREMENTS:
Students are expected to participate in all the course activities and have minimum of 75% attendance to be able to write the final examination.

READING LIST:
1.Frazier, W. C.and D.C. Westhoff. *Food Microbiology*. Tata McGraw-Hill ed. New Delhi, England. Tata McGraw-Hill Publishing Company Limited, 1995.

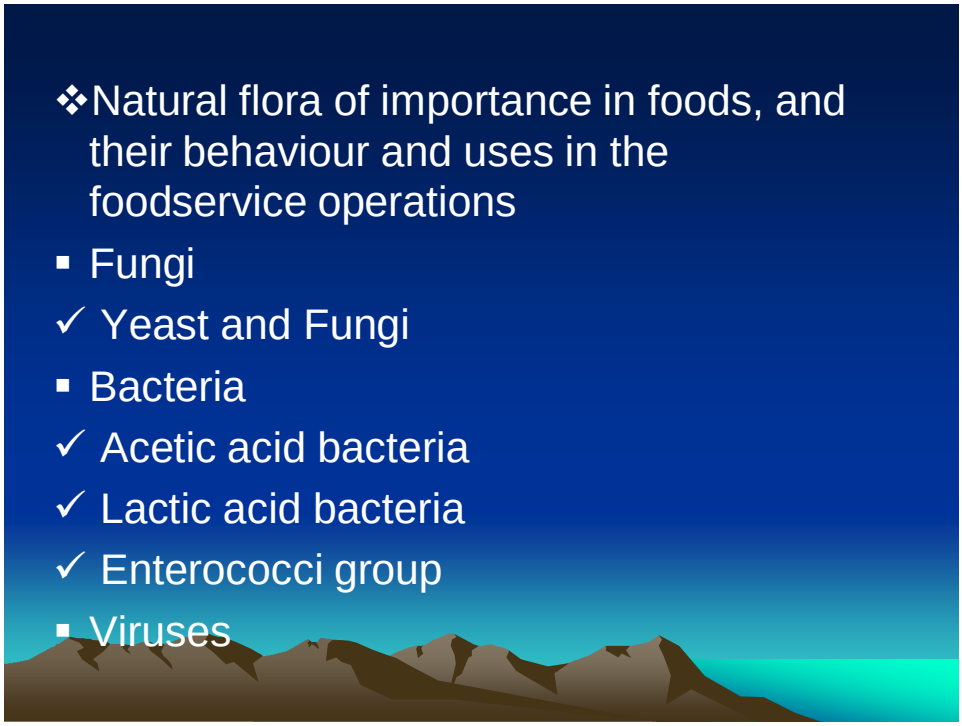
2. *Preventing Food contamination. A Guide for many of Florida's Food Service* Industries. http://www.doh.state.fl.us/environment/community/food/fbi.htm. Accessed 12th February, 2011.

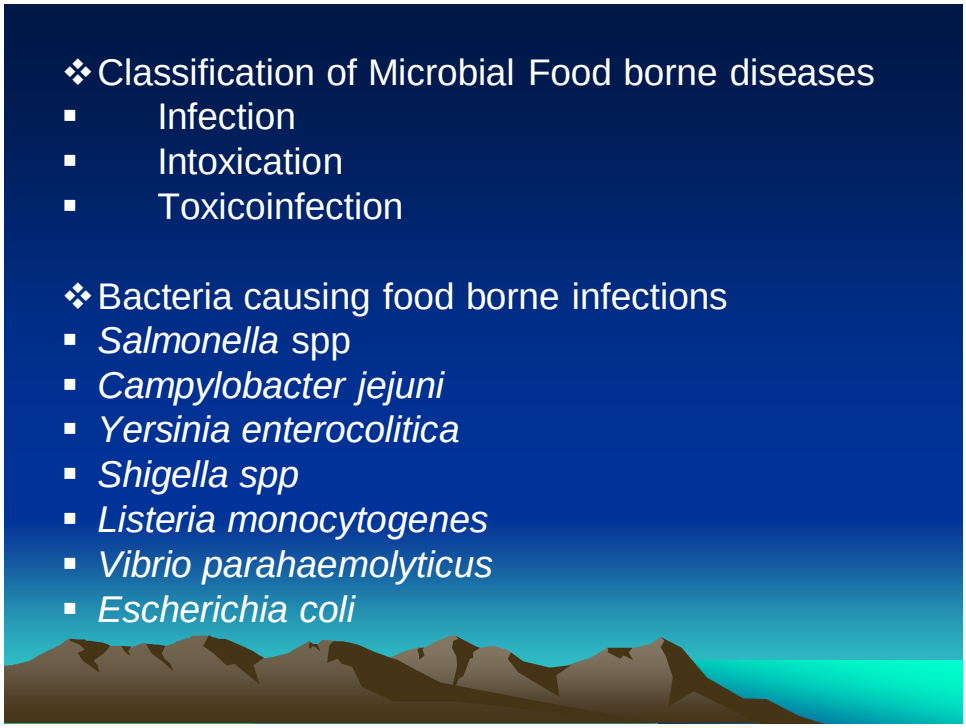
3.Fawole, M.O. and B.A., Oso. Laboratory Manual of Microbiology. Ibadan, Nigeria: Spectrum Books limited.1998.

4. Stainer, R.Y., M. Douroroff, and E.A. Adelberg. General Microbiology New Jersey, USA: Prentice- Hall, 1976.

5. Anon. Putting the HACCP Pieces together. The Canadian Food Safety Enhancement Programme. HACCP and You. Science and Technology Unit. Canadian Food Inspection Agency, Canada. 2004.

LECTURE NOTES:





- Bacteria causing Food Intoxication
  - *Clostridium botulinum* etc
- Bacteria causing Food toxicoinfection
  - *Bacillus cereus* etc
- Control of Food infection and intoxication
- Identification of food poisoning micro-organisms

- Mycotoxins
  - Aflatoxins
- Paralytic shellfish poisoning
- Anthrax
  - Causes
  - Mode of transmission
  - Treatment

- Principles and practices involved in safe handling of food products
- Sanitation as a way of life
- Personal health and work habits
- Safe food practices
- Pest control
- Good house keeping
- Safe and sanitary facilities, equipment and utensils
- Fundamental five of safe Foodservice

What does HACCP do?

- **Ensures that preventive food safety controls, based on science , will be applied in a systematic and consistent manner**

Codex recognises HACCP as the foundation of global food safety.

HACCP is seen as a Total Quality Management (TQM) approach based upon a systematic, scientifically-based preventative approach to food safety.

General Principles of Food Hygiene

- Recommend a HACCP based approach as a means to enhance food safety and indicates how to implement HACCP Principles.
- Provide guidance for codes which are specific to the food chain, processes or commodities in order to amplify the hygiene requirements specific to those areas.

General Principles of Food Hygiene

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Guidelines for the utilization of Quality Assurance systems in food.

- Incorporates HACCP steps and principles into QA system
- Provides guidance for certification and recognition of QA systems
- Outlines auditing and role of auditing authorities (eg. Governments, competent authorities)

FAO/WHO Food Standards - Normes Alimentaires FAO/OMS - Normas Alimentarias FAO/OMS

- End product testing is limited in assessing food safety.
- Statistically impossible for end product testing to ensure the safety of foods.
- Microbiological testing is most properly utilized to verify the proper implementation of HACCP.

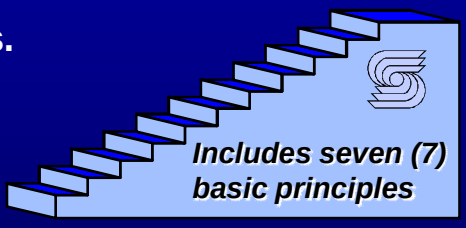
Report of the 32nd session of Codex committee on Food hygiene
Nov 29- Dec 04/ 99 , Washington, DC.

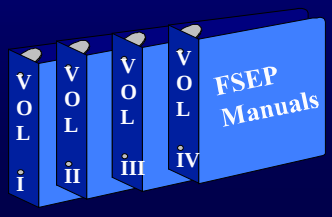
The Seven Principles of HACCP

Principle 1. Conduct a hazard analysis.
Principle 2. Determine the Critical Control Points (CCPs).
Principle 3. Establish target levels/critical limits.
Principle 4. Establish monitoring procedures.
Principle 5. Establish corrective action.
Principle 6. Establish verification methods.
Principle 7. Establish documentation systems.

HACCP APPLICATION

- Twelve (12) steps.





Uses a systematic and structured approach to the development of a HACCP plan.

LOGICAL SEQUENCE OF 12 STEPS

1. Assemble HACCP team
2. Describe product
3. Identity intended use
4. Construct process flow and plant schematic
5. On site verification of flow and schematic
6. List hazards associated with each process step (principle #1)

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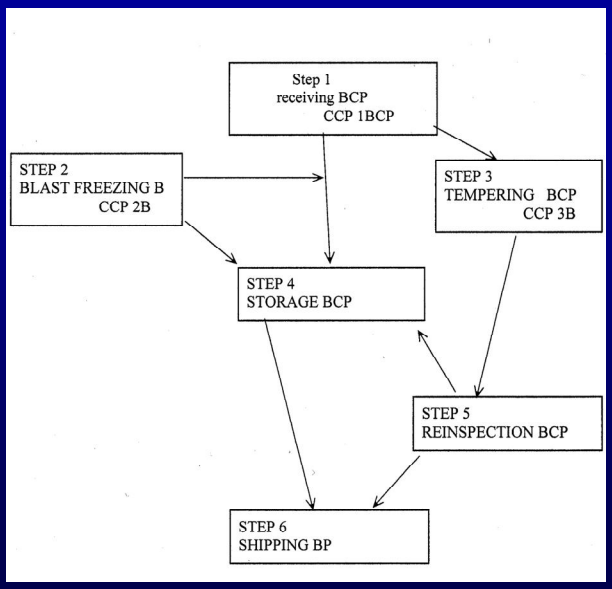
Product Description

- Product Name(s)
- Important Product Characteristics
- How it is to be used
- Packaging
- Shelf Life
- Where it will be sold
- Labelling Instructions
- Special Distribution Control

Product Description

- List of Product Ingredients and Incoming Materials

Construct Process Flow Diagram



Plant Schematic

Establishment's Plant Schematic

Hazard Identification

- List all hazards related to ingredients, incoming materials, processing, product flow, etc., creating separate lists for biological, chemical and physical hazards.
- Identify each hazard and where or by what pre-requisite program it is to be controlled.
- Situate each hazard according to both incoming material and to process steps.

Biological Hazard Identification

Identified Biological Hazards	Controlled at
All Process Steps	
Step 1 - Receiving - Microbial growth due to time/temperature abuse *during transport*	
Step 1 - Receiving - Microbial growth due to time/temperature abuse at *receiving*	

CCP Determination

- For each identified hazard, first determine if it can be *fully controlled* by a pre-requisite program(s).

If YES, then indicate these programs and proceed to the next identified hazard.

If NO, then proceed to Question 1.

CCP Determination (cont.)

Q1. Could a control measure(s) be used by the operator?

If NO, then it is not a CCP.

If YES, describe and continue to Question 2.

CCP Determination (cont.)

Q2. Is it likely that contamination with the identified hazard could exceed acceptable levels or could increase to an unacceptable level?

If NO, then it is not a CCP.

If YES, continue to Question 3.

CCP Determination (cont.)

Q3. Is this process step specifically designed to eliminate/reduce the likely occurrence of the identified hazard to an acceptable level?

If NO, continue to Question 4.

If YES, then the step is a CCP.

CCP Determination (cont.)

Q4. Will a subsequent step eliminate the identified hazard or reduce the likely occurrence to an acceptable level?

If NO, then step is a CCP.

If YES, then step is not a CCP, identify subsequent step and proceed to next identified hazard.

Biological Hazard Identification

Identified Biological Hazards	Controlled at
All Process Steps	
Step 1 - Receiving - Microbial growth due to time/temperature abuse *during transport*	CCP-1BCP
Step 1 - Receiving - Microbial growth due to time/temperature abuse at *receiving*	Personnel, Transportation & Storage Pre-requisite Programs

Hazards Not Addressed

List any biological, chemical and physical hazards which are not addressed at the establishment:

- hazards not addressed by the HACCP plan
- indicate the way the hazard could be addressed (cooking instructions, public education, use before date, …)

HACCP Plan

Steps 8 to 12 are incorporated into a HACCP Plan which summarises:

- All CCPs and situates each in the appropriate process step
- Hazard Description and Critical Limits
- Monitoring Procedures
- Deviation Procedures
- Verification Procedures
- HACCP Records/Documentation to be used