Distance learning

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Processes in distance learning

1. Find a course
2. Receive access / materials
3. Receive feedback
4. Actively learn
5. Examination

Focus on examples
Processes in distance learning

Step 1:
The student finds a suitable institute and course
Where to find courses?
www.nvvm-onderwijs.nl
Processes in distance learning

Step 2: Access to digital learning materials
II. THE PROKARYOTIC CELL: BACTERIA

A. SIZES, SHAPES, AND ARRANGEMENTS OF BACTERIA

The overall purpose of this Learning Object is to recognize common bacterial shapes and arrangements, and appreciate the extremely small size of bacteria.

LEARNING OBJECTIVES FOR THIS SECTION

Bacteria are:

a. prokaryotic.

b. single-celled, microscopic organisms (Exceptions have been discovered that can reach sizes just visible to the naked eye. They include *Euplcosciurn fisheltoni*, a bacillus-shaped bacterium that is typically 80 micrometers (μm) in diameter and 200-600 μm long, and *Thiornargita namibiensis*, a spherical bacterium between 100 and 750 μm in diameter.)

c. generally much smaller than eukaryotic cells.

d. very complex despite their small size. Even though bacteria are single-celled organisms, they are able to communicate with one another through a process called quorum sensing. In this way they can function as a multicellular population rather than as individual bacteria. This will be discussed in greater detail in Unit 2.

Bacterial Communication: Quorum Sensing

To view a nice interactive illustration comparing size of cells and microbes, see the Cell Size and Scale Resource at the University of Utah.

Bacterial cell shape is determined primarily by a protein called MreB. MreB forms a spiral band – a simple cytoskeleton – around the interior of the cell just under the cytoplasmic membrane. It is thought to define shape by recruiting additional proteins that then direct the specific pattern of bacterial cell growth. For example, bacillus-shaped bacteria that have an inactivated MreB gene become coccolid shaped, and coccus-shaped bacteria naturally lack the MreB gene.

Source: DR. KAISER'S MICROBIOLOGY COURSE
http://student.ccbcmd.edu/~gkaiser/goshp.html
Our programme: www.dl-fsm.nl

International Distance Learning Programme on Food Safety Management

User Login

Register

This programme is offered by the European Chair in Food Safety Microbiology, Laboratory for Food Microbiology, Wageningen University. Read more about why this programme.

Overview

The courses in this program are meant to provide good awareness of the concepts and terminology underlying specific aspects of food safety management. They are more for the generalist than for the specialist. They can be used as part of continuous professional development, e.g. in combination with more specialized courses and, importantly, offer self-learning opportunities.

The Food Safety Management programme consists of the following courses:
1. Food Related Hazards
2. Good Hygienic Practices
3. HACCP
4. Hygienic Design
5. Food Preservation
6. Sampling & Monitoring

For whom is the Programme?

The programme is intended for students and professionals at BSc or MSc level in Food Safety, Food Science or Food Technology or for those with more specialised science skills
Processes in distance learning

Step 3: Feedback
2. Microbiological parameters

2.1 Relevant microorganisms
2.2 The organism's distribution in raw materials and ingredients
2.3 The organism's state
   2.3.1 Natural resistance
   2.3.2 Process susceptibility
2.4 Microbiological challenge testing
2.1.2 Viruses

For information on foodborne viruses, read page 13-20 of ILSI publication:

2.1.2 Question:
What is the most effective measure to reduce the risk of infection?

A  Acidification to pH 1.
B  Pasteurisation (70°C or equivalent, 2 min.).
C  Freezing.
D  Boiling.
E  Chlorination (0.5 mg free chlorine/liter, 1 min).
F  60°C 30 minutes.

D  Boiling.
Feedback

Question:
Water is contaminated with hepatitis A virus (HAV). What is the most effective measure to reduce the risk of infection? Try to rank the risk reduction whilst using Table 4 of the ILSI-publication.

Answer:
Freezing.

Feedback:
Freezing gives no reduction in viral infection risk.

Click on the other alternatives to view their feedback

A  Acidification to pH 1.
B  Pasteurisation (70°C or equivalent, 2 min.).
C  Freezing.
D  Boiling.
E  Chlorination (0.5 mg free chlorine/liter, 1 min).
F  60°C 30 minutes.
Processes in distance learning

Step 4: Active learning
Active learning

- Fill in, Click, Choose, etc.

Cognitive level

- Create
- Evaluate
- Analyse
- Apply
- Understand
- Remember
Learning how to evaluate: auditing assignment

Hygienic Design: the IceWorks ice cream factory case

• Visit the factory
• Does the equipment meet high standards?
• Upgrade needed?

You have an appointment with the Location Manager Mr. Frigo, who will guide you through the factory.

During your tour you should find all the points of hygienic design that need attention by hovering your mouse over the screen. By clicking each item you will have to discuss with him, in a multiple choice fashion, the relevant design aspect.
We are here in the mixing room, where all ingredients, except for the chocolate, are mixed.
First the liquid ingredients and then the bulk solids are added automatically.
Minor ingredients are added manually through the mix.
Mixing takes place in the pasteuriser, and then to the...
Now let's see: is there anything about which you have something to ask me?
We put some traps here, just to be sure.
Choose the smartest question:

- What is in the box?
- How often is the box checked?
- Do you ever catch mice here?
Processes in distance learning

Step 5:
Certification

Ongoing issue when at distance

Blended learning
Questions?

International Food Safety Management programme:
www.dl-fsm.nl
www.fhm.wur.nl

KNVM education:
www.nvvm-onderwijs.nl