

## **Course specification**

Programme(s) on which the course is given	Diploma of Microbiology
Major or minor element of programmes:	Major
Department offering the Programme:	Botany
Department offering the course:	Botany
Academic year / Level:	One year
Date of specification approval:	2012

### **A- Basic Information**

Title: <b>Food microbiology</b>	Code: B6812	
Credit Hour: 3h	Lecture: 2h	
Tutorial: 0	Practical: 2h	Total: 3h

Teaching staff: Prof.Dr. Mohamed Ali Afifi Hefnawy

### **B- Professional Information**

#### **1- Overall aims of course**

The course aims to give the student Knowledge, understanding and skills on food resources, food hazards and roles of microbes in food spoilage and preservation. The most common fungi and bacteria found in different types of foods. Spoiled and pathogenic bacteria and fungi that found as a food contaminant. Methods and techniques for counting microbes in food. Microbial toxins in food and methods of food preservations.

#### **2- Intended learning outcomes of course (ILOs)**

##### **a- Knowledge and understanding:**

The student should be able to:

- a.1- Have the knowledge about food hazards and roles of microbes in food spoilage
- a.2- Recognize the sources of food contaminant
- a.3- Identify pathogenic bacteria and fungi that found as a food contaminant.
- a- 4 Describe microbial toxins in food and methods of food preservations.
- A 5- have knowledge about beneficial microbes and their utilization in food technology

##### **b- Intellectual skills**

The student should be able to

- b.1- Evaluate microbial, chemical and physical hazards of food.
- b.2- Analyze the hazard and detect the critical control point
- b.3- Illustrate a plane to control food spoilage.

##### **c- Professional and practical skills**

The student should be able to

- C 1- Collect food samples an prepare it for microbial count
- c.2- Isolate, count and identify different microbes in a particular type of food.
- c.3- prepare selective culture media for specific microbes.

- c.4- Identify the pathogenic microbes that contaminate food.  
 C 5- Give report about food samples.

### 3-Contents

Topic	No. of hours	Lecture	Tutorial/Practical
Food sources. Preventing food losses and food preservation. Natural occurring toxins. Food hazards and Hazard analysis.	4	2	2
Sources of microbes in food. Parameter of growing microbes in food.	3	1	2
Estimating the number of bacteria in food. Preparing food samples. Techniques of total aerobic bacterial count	3	1	2
Techniques of isolation and enumeration of fungi from food.	3	1	2
Associated microorganisms with food. Microbial types in food. Food borne illnesses and their risk Symptoms of Food borne illnesses	6	2	4
Character of some food poisoning bacteria: Salmonella, E. coli, Yersinia enterocolitica, Listeria monocytogenes, Bacillus cereus, Vibrio parahaemolyticus	5	1	4
Moulds and food spoilage, spoilage of living fresh foods by fungi. Fungal spoilage of vegetables, dairy food, meat and cereals.	6	2	4
Fungal spoilage of stored dry foods	3	1	2
Bacterial toxins and mycotoxins and their action.	3	1	2
Principals of food preservations	3	1	2

### 4- Teaching and learning methods

- 1- Lectures
- 2- Writing Reports
- 3- Practical demonstration

### 5- Students assessment methods

- 1- Written and oral Exam to assess understanding competencies
- 2- Practical Exam to assess laboratory performance

## **Assessment schedule**

Assessment 1 Mid term	Week 4 and 7
Assessment 2 Semester activities	Week 5 and 8
Assessment 3 Final term practical exam	Week 13
Assessment 4 Final term written exam	Week 14

## **Weighting of assessments**

Mid Term Examination (written + practical)	20%
Final Term Examination (written + practical)	60%
Semester Work (written + practical)	20%
Total	100%

## **6- List of references**

### **1- Course notes**

Prepared notes describe the outline of the lectures are handed out to the students

### **2- Essential books ( text books)**

Text books under the title (Food Microbiology)

### **3-Recommended books**

Vashishta B. R 1984 Botany for degree students Part 1 Algae. S.Chand and company LTD, New Delhi -110055.

### **4-Periodicals, Web sites,..... etc**

Journal of microbiology

### **7- Facilities required for teaching and learning**

overhead and slide projectors, reserved and fresh specimens, microscopes, TV-demonstrating system

Course coordinator: Prof.Dr. Mohamed Ali Afifi Hefnawy

Head of Department: Prof.Dr. Mohamed Ali Afifi Hefnawy

Date: