



## COURSE SPECIFICATION

### (Environmental Microbiology)

Faculty of Medicine- Mansoura University

#### (A) Administrative information

(1) Programme Title & Code	-Postgraduate master degree of <b>Microbiology</b> and Medical Immunology - <b>Code: ICMic 507EM</b>
(2) Final award/degree	Master of science (MSc) medical microbiology
(3) Department responsible for teaching the course.	Medical Microbiology and Immunology
(4) Coordinator	Dr. <b>niveen adel el-wakeel</b>
(5) External evaluator (s)	
(6) Date of approval by the Department`s council	7/8/2016
(7) Date of last approval of programme specification by Faculty council	9/8/2016
(8) Course title	Environmental Microbiology
(9) Course code	ICMIC <b>507EM</b>
(10) Credit hours	4 Theoretical credit hours 2 practical credit hours
(11) Total teaching hours	<b>60 hrs lectures and 60 hrs practical</b>

## **(B) Professional information**

### **(1) Programme Aims.**

The broad aims of the Programme are to:

- 1-** Provide the candidate with detailed information about how different types of microorganisms can affect the surrounding environment including soil, nutrient cycling, food, drinking water, air, meat and milk and clearly show how they can deliriously affect health.
- 2-** Promote the candidate to understand and plane diagnostic strategies to diagnose the effect of different types of microorganisms on previously mentioned environmental components and to formulate a management strategy to ensure providence of safe environment free of all sources of infection or contamination.

### **(2) Intended Learning Outcomes (ILOs):**

Intended learning outcomes (ILOs); Are four main categories: knowledge & understanding to be gained, intellectual qualities, professional/practical and transferable skills.

On successful completion of the programme, the candidate will be able to:

#### **A- Knowledge and Understanding**

- A.1 recognize the habitats provided by soil.
  - A.2 list the microorganisms involved in nutrient cycling.
  - A.3 list water-borne diseases.
    - Cholera
    - Enteric fever
    - Bacilliary dysentery
    - Water-borne campylobacter infections
    - Water-borne virus infections
    - Water-borne protozoal diseases
  - A.4 Describe the meaning and causes of chemical contamination of food.
  - A.5 List food-borne infections.
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- A.6 describe how carbon, nitrogen, sulphur, and phosphorous are cycled.
  - A.7 identify how water contamination can be diagnosed.
  - A.8 recognize outdoor air microflora components.
  - A.9 List indoor air microflora components.
  - A.10 describe the sources of air contamination.
  - A.11 List internationally accepted standards of air microorganisms.
  - A.12 identify the effect of air contamination on health.

## **B- Intellectual skills**

- B.1 Test how water is examined to ensure that it is safe to drink.
- B.2 Apply how water is purified to ensure that it is safe to drink.
- B.3 Analyze how sewage is treated to make it safe.
- B.4 Interpret the role microbes have in food spoilage and preservation.
- B.5 Distinguish the causes food poisoning.
- B.6 Evaluate the knowledge how to purify water and ensure safe water recourses and to evaluate such planes.
- B.7 Test how microbes cause food spoilage.

## **C- Professional/practical skills**

- C.1 Assess perform tests required for water examination (total count and most probable number)..
- C.2 Interpret quality tests for water to ensure being safe for use.
- C. 3 Apply tests required for food examination.
- C.4 Perform tests required for milk examination.
- C. 5 Carry out tests required for air examination.
- C.6 Test required microbiological examinations of food handlers to ensure being free of infections.

## **D.Communication skills**

- D 1 Effectively utilize the library to access and search for information.
- D 2 Develop effective teaching skills by teaching junior colleagues and students as well as through conference presentations.
- D 3 Provide education to physicians and other hospital staff about infectious diseases in seminars, lectures and ward rounds.
- D 4 Search midline data base
- D 5 Work in a team in the laboratory.
- D 6 Utilize problem solving skills in practical situations.
- D 7 Report the facts using printable sheets in the field of microbiology
- D8 Communicate effectively with learners
- D9 Participate in multidisciplinary quality/performance improvement strategies.
- D10 Participate in research activities.

### Module 1

Subjects	Lectures
The microbiology of soil and of nutrient cycling	5 hours
The microbiology of drinking water	10 hours
The microbiology of milk	10 hours
Laundry policy	5 hours
Total	30 hours

### Practical

Skills	lab
tests required for water examination	10 hours
quality tests for water.	10 hours
tests for milk examination (methylene blue and phosphatase tests)	10 hours
Total	30 hours

### Module 2

Subjects	Lecture
The microbiology of Food	10 hours
The microbiology of meat	10 hours
Catering policy	5 hours
Microbiology of air	5 hours
Total	30 hours

### Practical

Skills	Lab
tests for food examination.	10 hours
tests for air examination using air sampler	10 hours
microbiological examinations of food handlers	10 hours
Total	30 hours

#### **4- Teaching methods:**

4.1 Lectures

4.2 Seminars

4.3 Laboratory classes

4.4 Attending workshops and conferences

4.5 Observation of assisting and discussion with senior medical staff

#### **5- Assessment methods:**

5.1 written exams for assessment of knowledge and intellectual ILOs

5.2 Structured oral exams for assessment of of knowledge and intellectual ILOs

5.3 practical exams for assessment of of knowledge, practical , transferable and intellectual ILOs

#### Assessment schedule

Written, Oral and OSPE exams :first part Msc after 2 semesters of MSc registration

MCQ continuous assessment exams: at the end of each semester

#### Percentage of each assessment to the total mark

written exams ..... 144 marks that is 48% of the total mark

Structured oral exams .....60 marks that is 20% of the total mark

MCQ exams..... 36 marks that is 12% of the total mark

OSPE .....60 marks that is 20% of the total mark

other types of assessment ..... none

#### Other assessment without marks:

1- Candidate log book which should be fulfilled and signed by the head of the department

2- Attendance criteria: Minimum acceptance attendance is 75%

6- References of the course:

6.1 Hand books Departement theoretical books

6.2 Text books

6.3 Journals

6.4 Web sites

Facilities and resourses mandatory for course completion

1- Lecture halls

2- Data shows and computer assistance

3- Lab techniques

**Head of the department: Prof. Dr. Mohammad Abou El ela**

**Date:**