

Course specifications

Programme(s) on which the course is given : M.Sc. 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 : 1 /2012

A – Basic Information

Title : Water Microbiology Code : B 689
Credit Hours : 3 Lecture : 2
Tutorial : 0.0 Practical : 2 Total : 3

Teaching staff : Dr/Mohamed Tawfiek Shaaban

B – Professional Information

1 – Overall aims of course

At the end of the course the student should be aware of the aquatic environment, microorganisms living in water, factors affecting their life and roles played by microorganisms in water.

2 – Intended learning outcomes of course (ILOs)

a - Knowledge and understanding :

- a.1- Have Knowledge of different types of aquatic environments.
- a.2- Have knowledge of microorganisms in aquatic environments.
- a.3- Understanding their modes of life and their roles there.

b - Intellectual skills :

- b.1- Being aware of Factors affecting aquatic life
- b.2- Being aware of the distribution at microbes in water
- b.3- To differentiate between fresh and marine water microbial life..

c- Professional and practical skills :

- c.1- Being able to measure different parameters in water
- c.2- Being able to collect water samples for different studies .
- c.3- Being able to isolate microorganisms from different aquatic habitats.

d- General and transferable skills

- d.1- Differentiate between different env. factors in water.
- d.2- Evaluation of the aquatic microbial life.
- d.3- Intreactions between diffenrent aquatic microbial populations.

3- Contents

Topic	No. of	Lecture	Tutorial/Practical
-------	--------	---------	--------------------

	Hours		
Characteristics of hydrosphere ecosystem (General)	4	2	2
Different habitats of fresh water	4	2	2
Microbial communities of freshwater	4	2	2
Marine water ecosystem	4	2	2
Microorganisms in lakes, streams and estuaries (functional classification)	4	2	2
The phytoplankton	8	4	4
Physical examination of water	4	2	2
Chemical characterization of water	4	2	2
Microbiological examination of water & Interlaboratory quality control	6	3	3
Waste water and sewage treatment	4	2	2
Water-borne pathogens and diseases	2	1	1

4- Teaching and learning methods

- 4.1- Lectures.
- 4.2- Discussion.
- 4.3- Practical demonstration.
- 4.4- Field measurements.

5- Student Assessment methods

- 5.1- Written exam to assess understanding competencies and comprehension.
- 5.2- Practical exam to assess laboratory performance and professionalism.
- 5.3- Class activities to assess attendance and interesting.

Assessment schedule

Assessment 1 Mid Term	week	7
Assessment 2 Semester Activities	week	5 and 10
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%
Oral examination	10%
Semester work (written + practical)	10%

Total 100

6- List of references

- 6.1- Course Notes
“Lectures in Aquatic Microbiology” Botany Department.

6.2- Essential Books (Tent Books)

Text Books Titled as “Water Microbiology, Hydrobiology”

6.3- Recommended Books

6.4- Periodicals, Web Sites,etc

7- Facilities Required for Teaching and Learning

Lecture theater & TV demonstrating system; microbiology Lab. Instruments for measuring different parameters in water (Temp., Dissolved O₂ etc...)

Course Coordinator : Dr. Mohamed Tawfiek Shaaban

Head of Department : Prof. Dr. Mohamed Ali Afifi

Date: / 1/2012