

University: Damanhur
Department: Microbiology

Faculty: Veterinary Medicine

Bacteriology and Mycology Course Specifications (2010 - 2011)

Program(s) on which the course is given: BVSc
Department offering the program: ---
Department offering the course: Microbiology
Major or Minor element of programs: Major
Academic year /Level: 3rd Year 1st and 2nd semesters
Date of specification approval:

A. BASIC INFORMATION

Title: Bacteriology and Mycology

Code: 3ABACT, 3BBACT

Hours:

Lectures 2 hrs/week

Practical 2 hrs/week

Total 120 hrs

B. PROFESSIONAL INFORMATION

1. Overall aims of the course:

The course covers the fundamental principles related to bacteria and fungi mainly of veterinary importance and their interaction with host cells and molecular events during their replication.

2. Intended Learning Outcomes (ILOs) of the Course:

a. Knowledge and Understanding:

- a1 Knowledge and understanding of General bacteriology.
- a2 Basic knowledge about structures, growth, reproduction, virulence of bacteria and fungi.
- a3 Basic knowledge about sterilization, and methods of sterilization.

b. Intellectual Skills:

- b1. Critically assess laboratory results.
- b.2 Understand the principle and operation of relevant laboratory equipment.
- b.3 Able to correlate between different diseases and bacteria or fungi associated with them to reach to final diagnosis.
- b.4 Able to select the suitable sample and the suitable laboratory test for diagnosis.
- b.5 Able to choose the required measurements for prevention and control of

c. Professional and Practical Skills:

- c.1 Work safely in a medical laboratory.
- c.2 Be able to access relevant literature and review information.
- c.3 Ability to understand different methods of laboratory diagnosis.
- c.4 Practice different methods used for isolation of bacteria and fungi and their identification.
- c.5 Perform some serological tests used for detection of bacteria and fungi in clinical samples and analyze the results.
- c.6 Practice molecular techniques used for bacterial and fungal detection.

d. General and Transferable Skills:

- d.1. The ability to use simple word and IT skills (i.e., data processing, software, internet, and multimedia) and the library to find information.
- d.2. The ability to be self-motivated learners and responsive to feedback.
- d.3. Working in team (i.e., sharing presentations and discussions and solving problem).
- d.4. Enhancement of research capability through working in independent projects.
- d.5. Reporting of the facts using printable sheets in the field of animal bacteriology and mycology.
- d.6. Ability to write a full scientific reports in the field of animal bacteriology and mycology.

3. Contents:

3.1.Lecture Contents:

I. First semester

Topics	
1	Bacterial Structure: Morphology and Structure of Bacteria
2	Aseptic Techniques , Bacterial structures
3	Microbial reproduction and growth and factors affecting growth
4	Microbial products, Microbial genetics and Biotechnology
5	Pathogenesis and pathogenicity, Virulence and factors affecting virulence, Methods of attenuation and exaltation of virulence
6	Introduction of Growth and reproduction of mould
7	Growth and reproduction of Yeasts
Total hours 30 hrs	

II. Second Semester

Topics	
1	Enterobacteriaceae group, Pasteurella, Spirochaetes and Campylobacter

2	Pseudomonas, Brucella, Mycoplasma and aemophilus
3	Staphylococcus and Streptococcus, Listeria, Anthrax bacilli
4	Clostridium, General characters and Classification
5	Corynebacterium, Actinobacillus, Mycobacterium
6	Rickettsiales, Chlamydiales, Classification of dermatophytes.
7	Aspergillus species, The pathogenic Zygomycetes, Pathogenic yeasts and Dimorphic fungi, Mycotoxins and Mycotoxicosis
Total hours 30 hrs	

3.2. Laboratory Contents:

I. First semester

Topics	
1.	Safety Orientation
2.	Sterilization
3.	Collection, preservation and transport of specimens
4.	Stains and staining techniques
5.	media preparation and cultivation
6.	Biochemical tests
7.	Media and techniques used for isolation and identification
Total hours 30 hrs	

II. Second Semester

Topics	
1.	Cultural and morphological characters
2.	Preliminary Identification by metabolic characterization
3.	Detection of Gram Positive Bacteria in Clinical Specimens
4.	Detection of Gram Negative Bacteria in Clinical Specimens
5.	Identification of Fungi and Yeasts
6.	Media and techniques used for isolation and identification of bacteria and fungi
Total hours 30 hrs	

1. Teaching and Learning Methods:

4.1.Lectures

4.2.Practical (tutor presentation followed by students' small group sessions).

4.3.Independent (Laboratory and home assignments supervised by tutor):

- a) Writing reports/assignments.
- b) Preparation of colored posters and slide presentations.
- c) Group discussion.

4.3. computer courseware for independent study can be accessed at the education center beside recently developed web courseware

Method for disabled students: (no special arrangements are available now, however those student can consult our staff for help)

2.Students Assignment:

5.1. Assignment Methods:

- a) Mid and final term written examinations to assess knowledge and understanding.
- b) Periodical semester activities to assess general and transferable skills.
- c) Practical examinations to assess professional and practical skills.

Oral examination to assess intellectual skills, understanding of topics and ways of thinking in resolving problems

5. Student Assessment Methods:

Exam		
5.1	Written Mid-term	To assess the ability to understand and remember knowledge, and intellectual skills
5.2	Written Final-term	To assess the ability to understand and remember knowledge, and intellectual skills
5.3	Practical Final-term	To assess professional and practical skills
5.4	Oral Final-term	To assess skills of discussion

Assessment Schedule (in each semester):

	Exam	Week
Assessment 1	Written Mid-term	8 th
Assessment 2	Written Final-term	15 th
Assessment 3	Practical Final-term	15 th
Assessment 4	Oral Final-term	15 th

Weighing of assessments

	Exam	Per Semester (%)	Total (%)
Assessment 1	Written Mid-term	10	20
Assessment 2	Written Final-term	25	50
Assessment 3	Practical Final-term	10	20
Assessment 4	Oral Final-term	5	10
	Total	50	100

6. List of References:

6.1. Course Notes:

- Lecture notes by staff members

6.2. Essential Books:

- Clinical veterinary Microbiology (P.G. Quinn).
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- Veterinary Microbiology (Dwight C. Hirsh)
- Veterinary immunology (Ivan Tizard).
- Clinical immunology (Catherine Sheehan).

6.3. Recommended Books:

- Clinical veterinary Microbiology (P.G. Quinn).

6.4. Periodicals, websites, etc

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7. Facilities Required for Teaching and Learning

- Microscopes, computers (Personal & Notebook)
- Overhead projectors, video films
- Audio-video aids, mobile screens for exhibition.

Course Coordinator: Dr. Madeha salah ibrahim

Head of Department: Prof. Dr. Hatem Salah El-Din

Date: