

**University:** Damanhur  
**Department:** Microbiology

**Faculty:** Veterinary Medicine

## **Bacteriology and Mycology Course Specifications (2010 - 2011)**

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

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

II. Second Semester

Topics	
<b>1</b>	Enterobacteriaceae group, Pasteurella, Spirochaetes and Campylobacter

<b>2</b>	Pseudomonas, Brucella, Mycoplasma and aemophilus
<b>3</b>	Staphylococcus and Streptococcus, Listeria, Anthrax bacilli
<b>4</b>	Clostridium, General characters and Classification
<b>5</b>	Corynebacterium, Actinobacillus, Mycobacterium
<b>6</b>	Rickettsiales, Chlamydiales, Classification of dermatophytes.
<b>7</b>	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	
<b>1.</b>	Safety Orientation
<b>2.</b>	Sterilization
<b>3.</b>	Collection, preservation and transport of specimens
<b>4.</b>	Stains and staining techniques
<b>5.</b>	media preparation and cultivation
<b>6.</b>	Biochemical tests
<b>7.</b>	Media and techniques used for isolation and identification
Total hours 30 hrs	

#### II. Second Semester

Topics	
<b>1.</b>	Cultural and morphological characters
<b>2.</b>	Preliminary Identification by metabolic characterization
<b>3.</b>	Detection of Gram Positive Bacteria in Clinical Specimens
<b>4.</b>	Detection of Gram Negative Bacteria in Clinical Specimens
<b>5.</b>	Identification of Fungi and Yeasts
<b>6.</b>	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 stuff 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:**

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

**Assessment Schedule (in each semester):**

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	<b>Exam</b>	<b>Week</b>
<b>Assessment 1</b>	Written Mid-term	8 <sup>th</sup>
<b>Assessment 2</b>	Written Final-term	15 <sup>th</sup>
<b>Assessment 3</b>	Practical Final-term	15 <sup>th</sup>
<b>Assessment 4</b>	Oral Final-term	15 <sup>th</sup>

**Weighing of assessments**

	<b>Exam</b>	<b>Per Semester (%)</b>	<b>Total (%)</b>
<b>Assessment 1</b>	Written Mid-term	10	20
<b>Assessment 2</b>	Written Final-term	25	50
<b>Assessment 3</b>	Practical Final-term	10	20
<b>Assessment 4</b>	Oral Final-term	5	10
	<b>Total</b>	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:**