كليـــة الطب البيطرى
FACULTY OF VETERINARY MEDICINE

Specification for General Bacteriology, Immunology and Mycology

2025/2026

1-Basic information

Course title	General Bacteriology, Immunology and Mycology							
Course code	BIM.314							
Department/s participating in delivery of the course	Bacteriology, Immunology and Mycology department							
Number of units/credit hours	Theoretical	2	Practical	1(2)	Other	0	Total	3(4)
Course Type	√ **Obligatory** **Elective**							
Academic level at which the course is taught	3rd year							
Semester	Fall semester							
Academic program	Bachelor of Veterinary Medicine (BVM)							
Faculty	Benha University							
University	Veterinary medicine							
Name of course coordinator	Prof. Dr. Ashraf Awad Abd El-Tawab							
Course Specification Approval Date	Faculty council 27-8-2025							
Course Specification Approval (Attach the decision/minutes of the department /committee/council ....)	Department council on 8/7/2025							

2-Course overview

- **Course contents written in the program bylaw:**

Identify bacterial morphology and bacterial growth ; Bacterial physiology bacterial mutation and metabolic products; pathogenicity and virulence infection and anti chemotherapeutics. Fungi classification; nutrition and reproduction of fungi; Fungi diagnosis ; antifungal drugs; mycotoxins. Yeasts (classification and identification). Molds (dermatophytes, aspergillus,

zygomycetes); Dimorphic fungi. Immunology: Definitions and terminology; innate immunity antigen; acquired and humoral immunity; complement system antigen and antibody. Reaction; Hypersensitivity; immunology of tumors and their markers; immunology of transplantation and histocompatibility ; immune-prophylaxis.

3- Course Learning Outcomes CLOs

(NARS) outcomes		Program outcomes		Course outcomes	
Code	**Text**	**Code**	**Text**	**Code**	**Text**
2.7	Various causes of animal diseases, their pathogenesis, macro- and micro-scopic pathological lesions, and laboratory diagnosis	A7	Describe various causes of animal diseases, their pathogenesis, macro- and microscopic pathological lesions, and laboratory diagnosis	a1	classify procaryotes and differentiate between bacterial and fungal cells
2.9	General and specific epidemiological pattern of animal population diseases and the most effective immunization protocols.			a2	Describe the size and shape of bacterial and fungal cells
				a3	Identify the Structure of Bacterial and fungal cells and their function
4.4	Proficiently secure diagnostic reasoning, develop problem lists and differential diagnosis in order to deductively and critically reach the most appropriate solution (s) and management of the addressed clinical problems	**A9**	Designate the general and specific epidemiological pattern of animal population diseases and the most effective immunization protocols	b1	Distinguish between bacteria and fungi.
		B6	Interpret laboratory results for different samples of normal and diseased animal to reach accurate diagnosis		

		B7	Diagnose infectious, metabolic diseases and diseases of the different body systems and zoonotic diseases		
4.3	Inculcate a rigorous approach to problem identification and solving.	C4	Perform clinical examination of healthy and diseased animal and collect relevant samples to identify virus, bacteria, parasites and toxins and perform pathology and lab analysis.	b2	Compare between different types of microscopes and their usage in microbiology and how to use.
				b3	- Compare between different types of media used for propagation of bacteria
3.4	Perform clinical examination of diseased cases and collect relevant samples			c.1	approbriate use of the different types of microscopes
				c2-	Select suitable media for trials of isolation of different organisms.
3.1		C13	Minimize the risk of contamination, cross infection and predisposing factors of diseases by applying hygienic and control methods	c3-.	Get pure cultures of incriminated organisms.
				c4	Use the equipments and chemicals in the microbiology laboratory.
				c5	Deal with pathogens with the ability to select the effective antimicrobial agent
3.13				C6	Recognize different bacteria according to the morphology and other characteristics.
		D			
5.1	Work under pressure and / or contradictory conditions	D^1	Work under pressure and / or contradictory conditions.	d1	Cooperate and work in a team.
5.5	Search for new information and technology as well as adopt life–long self learning ethics	D^5	Search for new information and technology as well as adopting life–long self-learning.	d2	Searching skill information.
5.6	Utilize computer and internet skills	D^6	Utilize computer and internet skills.	d3	Communication skills
				d4	- Mural and culture of bacteriologist and the productive member in

					diagnostics labs for animal diseases
				d5	- problem solving skill.

4- Teaching and learning methods					
Lectures	√	**Discussion & seminar**	√	**Practical**	√
Presentation & movies	√	**Problem solving**	√	**Brain storming**	√
Others					

- Course Schedule:

Number of the Week	**Scientific content of the course (Course Topics)**	**Total Weekly Hours**		**Expected number of the Learning Hours**		
			Theoretical teaching (lectures /discussion groups/ .....)	**Training (Practical/ Clinical/ .....)**	**Self-learning (Tasks/ Assignments/ Projects/ ...)**	**Other (to be determined)**
W1	Structure of bacterial cell - Microscopes- 1	**3(4)**	**2**	**1(2)**		**0**
W2	Structure of bacterial cell - Microscopes 2	**3(4)**	**2**	**1(2)**		**0**
W3	Bacterial reproduction and growth1 Bacterial morphology and motility 1	**3(4)**	**2**	**1(2)**		**0**
W4	Bacterial reproduction and growth2 Bacterial morphology and motility 2	**3(4)**	**2**	**1(2)**		**0**
W5	Bacterial Products1 - sterilization 1	**3(4)**	**2**	**1(2)**		**0**

W6	Bacterial Products2 - sterilization 2	**3(4)**	**2**	**1(2)**		**0**
W7	Semester work including 1hour exam exam	----------				
W8	Bacterial genetic 1 - antibiotic sensitivity test 1	**3(4)**	**2**	**1(2)**		**0**
W9	Bacterial genetic2 - antibiotic sensitivity test 2	**3(4)**	**2**	**1(2)**		**0**
W10	Mycology1 - antibiotic sensitivity test 3	**3(4)**	**2**	**1(2)**		**0**
W11	Mycology2 Types of media 1	**3(4)**	**2**	**1(2)**		**0**
W12	Immunology 1 Types of media 2	**3(4)**	**2**	**1(2)**		**0**
W13	Immunology2 Diagnosis of mycotic infection	**3(4)**	**2**	**1(2)**		**0**
W14	Immunology3 Diagnosis of mycotic infection	**3(4)**	**2**	**1(2)**		**0**
W15	Practical exam	----------				

5- Methods of students' assessment

a- Assessment methods (summative and formative)

1. **Formative assessment**: including (weekly quizzes, homework assignments and surveys).
2. **Summative assessment** including (quizzes, class activities, semester 1 hour exam, practical exam, oral exams and final written exams).

b- Assessment schedule and weight

Assessment method	**Assessment Timing (Week Number)**	**Marks/ Scores**	Percent Percentage of total course Marks
Semester work	7^{th} week	10	10%

Formative assessment	Through the semester	----------	
Practical exam	15th week	30	30%
oral exam	End of semester	10	10%
Written exam	End of semester	50	50%
Assignments / Project /Portfolio/ Logbook	--------	-------	-------
Field training	--------	----------	-------
Other (Mention)	-------	--------	-------
Total		100	100%

6- Learning resources and supportive facilities:

Teaching and learning methods	**Main reference**	
	Essential books (text books)	Cruckshank, Mermion and Swain. Medical Microbiology. Vol. I & II. Merchant and Packer. Veterinary Bacteriology and Virology. Topley and Wilson. Textbook of Microbiology and Microbial infections. Wight, Hirsh, Maclachlan and Walker. Veterinary Microbiology. Quinn, Carter, Carter and Markey. Clinical Veterinary Microbiology.
	Periodicals, Web sites, . . . etc	Journal of Veterinary Microbiology. Benha veterinary medical journal http://www.microbe.org/microbes/virus_or_bacterium.asp . http://www.bact.wisc.edu/Bact330/330Lecturetopics . http://www.microbelibrary.org/ . http://www.mic.ki.se/Diseases/c2.html •
	Learning platform	Thinqi
Facilities required for	**Devices & instruments**	As listing in device guideline

teaching and learning		1-Teaching hall (Data show and White board) 2-Equipped Department laboratory (Instruments used for bacteriological isolation and identification)

Matrices:

A- Content and ILOs matrix:

Topic	A) Knowledge and understanding	B) Intellectual skills	C) Professional and practical skills	D) General and transferable skills
I- General bacteriology, Mycology and immunology	**a1, a2,a3**	**b1, b2, b3**	**C1, c2, c3, c4, c5, c6**	**d1, d2,d3, d4**
II- Practical course				
1- Microscopes	**a3**	**b1, b2**	**C1, c3**	**d2,d3,d4,d5**
2- Bacterial morphology and motility	**a3**	**b1, b2**	**C3, c4, c6**	**d2,d3,d4,d5**
3- Sterilization	**a3**	**b1, b2**	**C2, c3, c4, c5**	**d2,d3,d4,d5**
4- antibiotic sensitivity test	**a3**	**b1, b2**	**C2, c3, c4, c5**	**d2,d3,d4,d5**
5- Types of media	**a3**	**b1, b2**	**C2, c3, c4**	**d2,d3,d4,d5**
6-Diagnosis of mycotic infection	**a3**	**b1, b2**	**C4, c5, c6**	**d2,d3,d4,d5**

B- Teaching and learning methods and ILOs matrix:

ILOs		Teaching and Learning method					
		L	P&M	D&S	P	Ps	Bs
Knowledge and understanding	a1	√	√	√			√
	a2	√	√	√			√
	a3	√	√	√			√
	a4	√	√	√			√
	a5	√	√	√			√
	a6	√	√	√			√

	a7	√	√	√			√
	a8	√	√	√			√
Intellectual skills	b1	√	√	√		√	√
	b2	√	√	√		√	√
	b3	√	√	√		√	√
	b4	√	√	√		√	√
	b5	√	√	√		√	√
	b6	√	√	√		√	√
	b7	√	√	√		√	√
	b8	√	√	√		√	√
Professional and practical skills	c1		√	√	√	√	
	c2		√	√	√	√	
	c3		√	√	√	√	
	c4		√	√	√	√	
	c5		√	√	√	√	
General skills	d1			√	√	√	√
	d2		√	√	√	√	√
	d3		√	√	√	√	√
	d4	√	√				

L **:Lecture,** P&M**: Presentations & Movies,** D&S: **Discussions & Seminars P: Practical** Ps: **Problem solving,** Bs: **Brain storming**

C- Assessment methods and ILOs matrix:

ILOs		assessment method				
		Formative assessment	Semester 1 hour exam	Oral	practical	Written
Knowledge and understanding	a1					√
	a2	√	√	√		√
	a3	√	√	√		√
	a4	√	√	√		√
	a5	√		√		√
	a6	√		√		√
	a7	√		√		√
	a8	√		√		√
	b1	√	√	√		√
	b2	√	√	√		√
	b3	√	√	√		√

Intellectual skills	b4	√	√	√		√
	b5	√		√		√
	b6	√		√		√
	b7	√		√		√
	b8	√		√		√
Professional and practical skills	c1				√	
	c2				√	
	c3				√	
	c4				√	
	c5				√	
General skills	d1	√		√		
	d2	√		√		
	d3	√		√		
	d4	√		√		

-Course coordinator:

Course Coordinators: **Prof. Dr. Ashraf Awad Abd El-Tawab**

Head of the department: **Ass. Prof. Amira Mohammed Ali Rizk**

-Program coordinator: Prof. Dr. Mahmoud Abouelroos