Zagazig University

Faculty of Medicine

دليل قسم الميكروبيولوجيا الطبيه والمناعة

كلية الطب جامعة الزقازيق 2019

Medical Microbiology and Immunology Department

Contents

Introduction

Medical Microbiology and Immunology department is one of almost 36 departments of Faculty of Medicine, Zagazig University. It is in the 3rdfloor of academic building, Faculty of Medicine, Zagazig University. The department provides educational services for undergraduate medical students in subjects of Medical Microbiology and Immunology in the 3rdyear for undergraduate traditional system and in the 1stthree years of integrated system for medical students. In addition, it grants the postgraduate degrees (Master and Doctorate) in Medical Microbiology and Immunology, Master in infection control as well as the basic sciences for Clinical specialties (Diploma, Master and Doctorate) in most of clinical departments.

Our department shares in research work in medicine that help to discover the current issues in Medical Microbiology and Immunology.

Our objective is not only to provide the previously mentioned services but also, we have specialized well equipped Allergy unit that help to diagnose, manage and follow up different types of allergy for patients in Sharqia, Delta and Suez Canal governorates and to accomplish research work in this hot part of medicine.

Mission of Medical Microbiology and Immunology Department

The goal of the department of Medical Microbiology and Immunology is to build the competencies of the undergraduate medical students& postgraduate physicians especially, in the field of medical ethics, communication skills, and to provide basic Medical Microbiology and Immunology background to all medical students. Also, to promote the scientific researches in this field moreover to develop a new model for high quality medical education.

Preface

ان قسم الميكروبيولوجياالطبية والمناعة بكلية الطب البشرى جامعة الزقازيق يجعل من اهم اهدافه ان يتعرف طلاب الفرقة الثالثة بالنظام التقليدي والفرق الثلاث الاولي بالنظام التكاملي بالكلية علي الكائنات الدقيقة التي يمكن ان تسبب العدوي للإنسان مثل البكتريا والفيروسات والفطريات ومعرفة طريقة التشخيص المعملي لها كما يهتم بدراسة علم المناعة الطبية ويعتبر هذا من العلوم الاساسية لدراسة العلوم الطبية الإكلينيكية في السنوات التالية بالكلية .كما يمنح القسم درجات الماجستير والدكتوراة في الميكروبيولوجي والمناعة الطبية ودرجة الماجستير في مكافحة العدوي. بالإضافة الي ما سبق تقدم وحدة الحساسية والمناعة التابعة للقسم بجامعة الزقازيق خدمات التشخيص والعلاج والمتابعة لمرضي الحساسية بأنواعها المختلفة.

رئيس القسم

ا.د/ حنان السيد

السادة رؤساء القسم الذين شرف القسم برئـاستهم لـه:

ا.د يحيي البطاوى

أ.د/عمر الدالي

أ.د/سلوى بدر الصباح

أ.د/إنصاف عزازي

أ.د/رفعت صادق

أ.د/أحمد شاهين

أ.د/فاطمة عبد العزيز عامر

أ.د/سمية الشيخ

أ.د/عوني جاويش

أ.د/ماجدة عزب

أ.د حنان السيد

Zagazig University - Faculty of Medicine

Department of (Medical Microbiology and Immunology)

Course specifications

Course title: Medical Microbiology and Immunology (MIUG 03)

3rd year of M.B.&B.CH program

2018/2019

Programme(s) on which the course is given: 3rd year of M.B.&B.CH
Major or minor element of Programmes: Bacteriology, virology, immunology, mycology.
Department offering the course: Medical Microbiology and Immunology
Academic year/level: 2018/2019 3rd year.
Date of specification approval: 10/2018
Allocated marks: 200 degrees
Course director: Chairman Prof. Dr. / Hanan Elsayed
Course Coordinator: Prof. Dr. / Hanan Elsayed

A-BASIC INFORMATION

Allocated marks: 200 degrees

Course duration: 30 weeks divided as follow:
22 weeks (actual studying time) + 2 weeks (vacations)+ 2 weeks for exams
Course director: **Prof. Dr. Hanan Elsayed** head of the department of Medical Microbiology &Immunology and & Department Council.
Teaching Staff: (97) Total, (40) Professor, (10) Assistant Professor, (22) Lecturer, (13) Assistant Lecturer& (12) Demonstrator.
Course Goal: The main goal of the course of Microbiology &Immunology is to build the competencies of the undergraduate to interpret and recognize different microbial infectious diseases as well as components of the immune system and their reaction to different infections & health problems. know the basic skills in scientific research.

I. AIMS OF THE COURSE:

II. INTENDED LEARNING OUTCOMES:

I-INTENDED LEARNING OBJECTIVES [ILOs] OF A COURSE OF MICROBIOLOGY & IMMUNOLOGY

By the end of this course:

Through the following knowledge, skills & attitude the students will be able to:

1- Knowledge:

General principles and general bacteriology:

KU.01. Recognize the history of development of microbiology.

KU.02. Identify lab safety measures and principles of infection control.

KU.03. Recognize medical ethics about lab work

KU.04. Identify microbial morphology & structure.

KU.05. Define microbial metabolism & physiology.

KU.06. Identify methods of measurement of bacterial growth.

KU.07. Differentiate between G +ve, G –ve& acid-fast organism.

KU.08. Recognize different media for isolation & identification of different organisms.

KU.09. Recognize microbial genetics, the uses of genetic engineering and the flow of genetic information.

KU.10. Describe the control of organisms (in vivo & in vitro) i.e. Describe the sensitivity different organisms to different antimicrobials & define different methods of disinfections & sterilization.

KU.11. Identify the recent types of resistant strains of bacteria, their effect and how to detect them.

KU.12. Identify structure, pathogenesis and treatment of human pathogenic bacteria.

KU.13. Identify the different levels of host-parasite relationship & recognize microbial virulent factors.

KU.14. Study Koch's postulate and cycle of infection.

KU.15. Recognize basics of medicolegal practice.

Immunology:

KU.16. Recognize the natural barriers to infections [Innate immunity] & specific barriers [specific immunity].

KU.17. Describe the different cells of immune system and their functions.

KU.18. Identify the Ag-Ab reactions in vitro.

KU.19. Define the role of immune systems in health & disease states.

KU.20. Study types and applications of vaccines and antisera.

KU.21. Assess the cells in the immune system & immune response.

KU.22. State methods & application of immunomodulation in hypersensitivity, autoimmunity, transplantation and tumor.

Systematic Bacteriology, mycology & virology:

KU.23. Recognize taxonomic classification of microorganism.

KU.24. Recognize the diagnostic topics related to each organism.

KU.25. Describe the pathogenesis of each organism.

KU.26 List diseases caused by each organism [C/P of some of them].

KU.27. Identify methods of laboratory diagnosis.

KU.28. Describe control measures which include treatment and any specified suitable prophylaxis and vaccination against each microorganism.

Nosocomiology:

KU.29. Recognize practice against: aseptic techniques, hand washing.

KU.30. Study important organisms causing hospital acquired infection as MRSA, VRE and Cl. difficile.

KU.31. Recognize the importance of research.

KU.32. Identify the different types of research methods

KU.33. Know how to write scientific research in microbiology.

2- Skills:

2.1. Practical skills:

PS.01. Identify different types of lab tools.

PS.02. Examine different microscopes and instruments used in diagnosis.

PS.03. Practice and examination of Gram stained and Ziehl Neelsen smears.

PS.04. Examine different culture plates & Biochemical reaction.

PS.05. Examine antibiotic sensitivity plates.

PS.06. Examine Ag-Ab blood group & pregnancy tests.

PS.07. Examine agglutination, precipitation & complement fixation, ELISA, IF reactions.

PS.08. Study nontraditional methods for diagnosis like western blot and PCR.

PS.09. Acquire the team management in scientific research skill.

2.2. Intellectual skills:

IS.10. Differentiate between different types of specimens.

IS.11. Differentiate between different types of microscopes.

IS.12. Distinguish between different types of organisms in lab [Interpret smears + culture plate + biochemical reaction].

IS.13. Interpret antibiotic sensitivity methods describe different methods of sterilization of disinfection in lab & hospital.

IS.14. Distinguish between different serological tests in lab [for diagnosis of different infectious diseases & identification of different organisms].

IS.15. Interpret the different immunologic reactions.

IS.16. Write a Health record.

IS.17. Analyze normal data

IS.18. Summarize finding of project.

IS.19. Select the proper topic for the research.

2.3. General skills:

GS.20. Search midline data base for diagnostic measures in microbiology.

GS.21. Demonstrate understanding of scientific research

GS.22. Appraise research study.

GS.23. Adapt suitable measures for infection control.

GS.24. Use available IT resources.

2.4. Communication skills:

CS.25. Improve communication skills between students and their colleagues, supervisors and technicians in the lab.

CS.26. Respect the opinions of others and behave with integrity.

CS.27. Improve and build relationships between medical students and staff members.

CS.28. Implementstrategies to promote understanding, manage differences and resolve conflicts in a manner that supports collaborative work.

CS.29. Develop and implement sufficient leadership skills for better teamwork and learning environment.

CS.30. Effective use of constructive criticism to evaluate own's and other's work.

3. Attitude:

A.01. Respect assisting personal.

A.02. Demonstrate adherence to professional standards

A.03. Show respect to different culture beliefs

A.04. Appreciate team work in lab and research.

A.05. Respect measures of infections control to avoid spread of infection to his colleague, personal & staff.

A.06. Elevate self-confidence of medical students through involving them in real activities that make the scientific material easy and interesting.

III-Course content:

III-a : Topics :

1. General (General Principles &General Bacteriology).
2. Immunology.
3. Systematic bacteriology.
4. Mycology.
5. General Virology.
6. Systematic Virology.

III-b: content of each Topic:

1-General Principles: -Laboratory safety measures and ethics in lab work.

- Development of microbiology.

2-General Bacteriology: (Bacterial structure, bacterial physiology and metabolism, bacterial genetics, laboratory identification of bacteria, antimicrobial agents, Sterilization and disinfection, and bacterial pathogenicity)

3-Immunology: (Defense against infections, antigens, cells of immune response, lymphoid organs, lymphocytes, antibodies and humoral immunity, complement system, antigen-antibody reaction, cell-mediated immunity, protective immunoprophylaxis, hypersensitivity reactions, MHC System and transplantation, tolerance, autoimmune disorders, immune deficiency diseases and tumor immunology).

4-Systematic Bacteriology: (Staphylococci, Streptococci, Pneumococci, Neisseria, Spore-forming bacilli, Corynebacterium, Coliform bacteria, Salmonella, shigella, Vibrios, campylobacter, helicobacter, Yersinia, Brucella, Hemophilus, Bordetella, Pseudomonas, proteus, Morexella, Anaerobes, Coxiella, Mycoplasma, Spirochetes, Mycobacteria, Rickettsia, Chlamydia and different bacterial diseases according to site of infection, mode of transmission).

5- **General virology :**(General properties of viruses, viral replication, laboratory diagnosis of viral infections, antiviral drugs and viral vaccines).

6- **Systematic virology:** (ARBO&ROBO viruses, Picorna viruses, Orthomyxoviruses, Paramyxoviruses, Rabies virus, HIV, Hepatitis viruses, Pox viruses, Herpes viruses, oncogenic and slow viruses).

7- **Mycology:** Classification of fungi, laboratory diagnosis of fungal infections, superficial mycosis, cutaneous mycosis, opportunistic mycosis, systemic mycosis and antifungal drugs).

III-c : Schedule of topics :

Topics	No. of hrs		
	Lectures	**Small groups**	**Total**
*General (Principles & Bacteriology)	14	16	24
*Immunology	24	2	26
*Systematic Bacteriology:			
Staphylococci	2	2	3
Streptococci, Pneumococci	2	2	4
Neisseria	2	2	4
Coliform bacteria	2	2	3
Spore- forming bacilli	2	4	4
Corynebacterium diphtheria	2	2	3
Salmonella, Shigella, Vibrios	4	4	7
Yersinia, Brucella	2	2	4
Hemophilus, Bordetella, Morexella	2	2	1

Bacteroides, legionella, Mycoplasma Spirochetes Mycobacteria Rickettsia, Coxiella, Chlamydia	2 2 2 2	2 2 2 2	1 4 4 2
*General virology	4	0	5
*Systematic virology	18	0	14
*Mycology	2	2	4
*Infection prevention and control	2	2	
*Revision and assessment	1	10	21
*Examination	4	10	6
Applied	6	0	3
Total	103	72	175

IV- Teaching and learning methods

IV(a) : Teaching methods

I.L.Os	Lectures	Group discussion	Practical lab (demonst)	tutorials
(1) know.KU.01	--			
KU.02	--	--	--	--
KU.03		--		--
KU.04	--	--	--	
KU.05	--			
KU.06	--			
KU.07	--	--	--	--

KU.08	--	--	--	--
KU.09	--			
KU.10	--	--	--	--
KU.11	--	--	--	
KU.12	--			
KU.13	--			
KU.14	--			
KU.15	--			
KU.16	--			
KU.17	--	--	--	--
KU.18	--			
KU.19	--			
KU.20	--			
KU.21	--			
KU.22	--	--		
KU.23	--	--	--	
KU.24	--	--	--	
KU.25	--	--	--	
KU.26	--	--		
KU.27	--	--	--	
KU.28	--	--		
KU.29	--	--	--	--
KU.30	--	--	--	
KU.31	--	--	--	--
KU.32				
KU.33				
(2)skills				

(2.1)Practical skills				
PS.01		--	--	
PS.02		--	--	
PS.03		--	--	
PS.04		--	--	
PS.05		--	--	
PS.06		--	--	
PS.07		--	--	
PS.08				
PS.09				
(2.2) Intellectual skills				
IS.10		--	--	
IS.11		--	--	
IS.12		--	--	
IS.13		--	--	
IS.14		--	--	
IS.15				
IS.16				
IS.17				
IS.18				
IS.19				
(2.3) General skills				
GS.20		--		
GS.21		--	--	
GS.22		--		

GS.23				
GS.24				
(2.4) Communication skills				
CS.25				
CS.26				
CS.27				
CS.28				
CS.29				
CS.30				
(3) Attitude				
A.01		--		
A.02		--		
A.03		--		
A.04				
A.05				
A.06				

IV(b): Teaching plan:

For lectures:

- The students will be divided into three groups 1, 2 and 3.
- All groups will be given the same lectures in different places and by same teaching staff members.
- Two lectures will be given weekly for each group in the following times:
- **Group 1:**
  - Monday (1-3 pm).
  - Wednesday (1-3 pm).
- **Group 2:**
  - Saturday (9-11 am).
  - Monday (9-11 am).
- **Group 3:**
- Saturday (11-1 pm).
- Monday (11-1 pm).
- Starting from ***23/9/2018*** (in the first term), till ***13/4/2019***
- Total teaching hours 104 h.

For practical sections:

- Divide the students into small groups up to 10 in each group
- Assign a staff member with each group
- Co-operate to choose the topic that this group will act on
- Determine a due date to perform the activity which may be a power point presentation, a small research paper, or even a role play.
- Two practical hours will be given for each group in one session.
- Total practical hours 50 h.

V (c): Educational Resources

a. 3 labs
b. 5 white boards
c. one lecture hall in the department.
d. 2 Main lecture halls in the faculty
e. Microscopes (ordinary light and fluorescent)
f. ELISA reader, PCR thermocycler system and electrophoresis.
g. Slide projector
h. Overhead projector
i. Computer
j. Data show

.

VI- Student assessment:

VI (a) Attendance criteria:

1- Every student must attend at least 75% of lectures and 75% of lessons of small group teaching

2- This attendance is measured by an attendance sheet to be filled by the lecturer and round selection during lab. Session.

3- Ten degrees for their activity.

VI (b) Assessment tool and schedule:

- Determine the role of each student with the supervisor of staff member
- Give marks depending on participation of each student alone and marks for the performance of the group as a whole

- Tackle each problem as soon as it appears and try to solve it, this is the role of the staff member who can act as a mentor of the group.

Tool	Purpose	Frequency
Participation	Knowledge, skills, attitude	Repeated during sections
Research, self-learning	Knowledge, skills	Once
Written examination	Knowledge, skills	One course exam all through the year and a final exam.
Oral examination	Knowledge, skills, attitude	Once after the final written exam.
Practical exam.	Knowledge, skills, attitude	Once before the final written exam.

VI (c): Formative assessment:

Providing the student with continuous, confidential information on his progress. It should not be used by the teacher to make a certified judgement.

VI (d)Examination grading:

Examination type and description		Marks allocated	Percentage
Whole year assessment	• **Total** 1-Midterm examinations: (Short essay, MCQ) 2- Attendance 3- Frequent examinations 2-Activity	**40** 20 5 10 5	**20 %**
Final practical examination	▪ Spot diagnosis: interpretation of tests for final diagnosis of the	**50**	**25 %**

	causative organism and answering short question about each item.		
Final written examination	▪ Short essay ▪ Case study ▪ MCQ's	**100**	**50 %**
Oral exam.		**10**	**5%**
Total marks		**200**	**100%**

VI (d) Assessment tools serving the ILOs:

Assessment tool / ILOs	Participation	Research	Written exam	Oral exam	Practical exam.
1.1	+	+	+	+	+
1.2	+	+	+	+	+
	+	+	+	+	+
1.3	+	+	+	+	+
1.4	+	+	+	+	+
	+	+	+	+	+
1.5	+	+	+	+	+
	+	+	+	+	+
1.6	+	+	+	+	+
1.7	+	+	+	+	+
1.8	+	+	+	+	+
1.9	+	+	+	+	+
	+	+	+	+	+
1.10					
	+	+	+	+	+
1.11	+	+	+	+	+
	+	+	+	+	+
1.12	+	+	+	+	+
1.13	+	+	+	+	+
	+	+	+	+	+
1.14	+	+	+	+	+
	+	+	+	+	+

1.15	+	+	+	+	+
	+	+	+	+	+
1.16	+	+	+	+	+
1.17	+	+	+	+	+
	+	+	+	+	+
1.18	+	+	+	+	+
	+	+	+	+	+
1.19	+	+	+	+	+
1.20	+	+	+	+	+
	+	+	+	+	+
1.21	+	+	+	+	+
	+	+	+	+	+
1.22	+	+	+	+	+
1.23	+	+	+	+	+
	+	+	+	+	+
1.24	+	+	+	+	+
1.25	+	+	+	+	+
	+	+	+	+	+
1.26	+	+	+	+	+
	+	+	+	+	+
1.27	+	+	+	+	+
1.28	+	+	+	+	+
	+	+	+	+	+
1.29	+	+	+	+	+
1.30	+	+	+	+	+
	+	+	+	+	+
1.31	+	+	+	+	+
2.1.a	+	-	-	+	+
2.1.b	+	-	-	+	+
2.1.c					
2.1.d					
2.1.e					
2.1.f					
2.1.g					
2.2.a					
2.2.b					
2.2.c					
2.2.d					

2.2.e 2.2.f 2.3.1 2.3.2 2.3.3 3.1 3.2 3.3					

VII. LEARNING AND REFERENCE MATERIALS:

VII-A) BASIC MATERIALS:

Theories in Medical Microbiology& immunology (staff)

VII-B) SUGGESTED MATERIALS:

1. Manual of Medical Microbiology and Immunology (Prof.Dr. AblaElMishad).

1. Medical Microbiology and Immunology (Professors of Medical Micrbiology and Immunology Department).
2. Medical microbiology (Prof. Dr. Samira Shoeb& Prof. Dr. Omar Eldaly).
3. Medical Microbiology (Brooks etal.,2004).
4. Internet for research.
5. Hospital Infection Control (prof. Dr. Fatama A. Amer) 1998.

Course Coordinator: Prof/Dr. Hanan Elsayed

Head of the Department: Prof/Dr. Hanan Elsayed

Date: October 2018.

Curriculum Matrix

#	Competency Area	Key Competency	ILOs	Delivery Mode (how, where)	Time of Delivery	Assessment Mode (How)	Time of assessment
2	**Health promotor**	2.9	**A.03**To adapt suitable measure for infection control	Demonstration in practical session.	Throughout the year	OSPE	Formative
3	**Health professional**	3.2	**A.02** Demonstrate adherence to professional standards	Role play in practical session	Throughout the year	DOE (checklist)	Formative
		3.2	**A.03** Show respect to different culture beliefs	Group discussion in practical session	Throughout the year	DOE	Formative
		3.6	**KU.15** Recognize basics of medicolegal practice	-Group discussion -Case study in practical session	Throughout the year	OSPE	Formative
5	**Health team**	5.2	**CS.25** -Work cooperatively with colleagues -communicate effectively	-Group discussion -Role play	Throughout the year	DOE (checklist)	Formative

		5.5	**IS.16** Health record	Role play	Throughout the year	DOE (checklist)	Formative
6	**Lifelong leaner and researcher**	6.7	**GS.21** Demonstrate understanding of scientific research	Conducting reaesrch	At the start of the year	Checklist	Last section
		6.8	**GS.22** Appraise research study	Journal club	Mid-year	Checklist	Second term
		6.9	**IS.17** Analyze normal data	Workshop	Mid-year	OSPE	Second term
		6.10	**IS.18** Summarize finding of project	Conducting research	Mid-year	OSPE	Second term

Disease and defense module: integrated system second module in first semester

Topic	ILOs of Microbiology
Bacterial structure and morphology	- Identify structure and function of cell wall of bacteria. - Define cell wall deficient bacteria. - Illustrate structure and function of cytoplasmic membrane of bacteria. - List the intracytoplasmic structures of bacterial cell. - Define capsule and its function. - Describe bacterial biofilm. - Distinguish between fimbriae and flagellae. - Describe structure and importance of endospores
Bacterial growth and metabolism	- Outline bacterial reproduction process. - Illustrate bacterial growth curve. - List factors that affect bacterial growth. - Differentiate between autotrophic and heterotrophic bacteria. - Categorize bacteria according to oxygen requirement.
The molecular basis of bacterial genetics	- Classify genetic elements of bacterial cell and identify their importance. - Illustrate genetic variability of bacteria(mutation and gene transfer). ✓ Define mutation and mention its causes. ✓ Define transformation ✓ Identify specialized transduction and generalized transduction ✓ Describe conjugation process and define conjugative plasmids and conjugative transposons. ✓ Illustrate mechanisms of transposition. - Define Recombinant DNA technology and explain its requirements, steps and uses of cloned DNA - Define Bacteriophages, their composition, reproduction process and importance
Antimicrobial drug resistance	- Describe mechanisms of antimicrobial resistance of bacteria. - Illustrate origin and control of bacterial resistance antimicrobial agents. - Identify principles of effective antimicrobial therapy. - Define antimicrobial stewardship and its goals.
Bacterial infection	- Differentiate between colonization, infection and disease. - Define carriers of infection, sites of carriage and th importance. - Distinguish between true pathogen and opportunistic pathoge - List types of infections. - Illustrate stages of bacterial infections. - Explain factors that govern disease process. - Explain virulence factors of bacteria. - Compare between exotoxin and endotoxin.

Host resistance to microbial linfection	- Identify the non specific host defence mechanisms. - Describe the phagocytosis process. - Define cells involved in the non specific immunity. - List the chemical barriers in blood, body fluids and tissue. - Explain non specific reaction to bacterial infection. - Enumerate constitutional factors governing host resistance to infection
General characteristics of viruses and viral replication	- Illustrate structure of viruses. - Describe virus like agents. - Mention important viral classifications. - Describe stages of virus replication
Viral pathogenesis and diagnosis of viral infection	- Explain outcome of virus infection - Mention important factors for pathogenesis of virus infection - Illustrate diagnosis of viral infection.
Mycology	- Identify general properties of fungi and fungal classification - Demonstrate reproduction of fungi
Specimen collection And microscopic examination of bacteria	- Identify and appreciate safety measures in the Microbiology laboratory - Identify general rules for specimen collection and transport. - Appreciate correct sampling method. - Identify value of wet film - Differentiate between Gram positive and Gram negative bacteria in a Gram stained film. - Comment on Ziehl-Neelsen stained film
Cultivation of microorganisms	- Show basic skills of microbiological techniques for cultivation and identification of micro-organisms. -Comment on nutrient agar, nutrient broth, blood agar, MacConky's agar, Chocolate agar, LJ media, Urease test, Oxidase test, API, Blood culture bottles, Petri dish, bacteriological loop and anaerobic Gas Pack system. - Illustrate methods of anaerobic cultivation. - List methods of identification of bacteria.
Antimicrobial susceptibility testing	- Describe different methods used for antimicrobial susceptibility testing. - Mention difference between MIC & MBC - Interpret antibiotic sensitivity tests properly
Lab diagnosis of fungal infection	- Mention steps of laboratory diagnosis of fungal infection - Comment on slides of hyphae and yeast forms of fungi

Zagazig University
Faculty of Medicine
Department of Medical Microbiology & Immunology

Course specification

Degree: Master in Medical Microbiology and Immunology

Course title: Microbiology and Immunology course (MIMS 01)

Programme (s) on which the course is given: Master degree in medical microbiology and immunology
Major or minor elements of Programme: Major
Department offering the course: Department of Medical Microbiology & Immunology
Academic year/level: First academic year
Date of specification approval:
Course director: Chairman Magda Azab
Course Coordinator: Prof. Laila El-Kadi

A- Basic information:

Title: Medical Microbiology and Immunology 1.
Code: MIMS 01
Course duration: 6 months
Total teaching hours: 236 hrs
Lectures: 126 hrs Practical: 110 hrs
Allocated marks: 250 marks (25% of the total mark)
Teaching staff: staff members of the department.

B-Professional information:

I. AIMS OF THE COURSE:

- **The aim of this course is to** prepare the candidate for the advanced course of medical microbiology and immunology by providing him/her the basic knowledge and skills in microbiology and immunology.

II. INTENDED LEARNING OUTCOMES:

A- Knowledge and Understanding

KU.01 Illustrate general bacterial taxonomy, morphology, physiology and genetics.

KU.02 Illustrate general viral taxonomy, morphology, physiology and genetics.

KU.03 Explain the host parasite and microbial pathogens.

KU.04 Describe the antigenic structure and virulence factors of pathogens of medical importance.

KU.05 Demonstrate a general awareness of significance of infections and impact on individuals as well as community.

KU.06 Identify the different antimicrobial agents (anti-bacterial as well as anti-viral agents).

KU.07 Explain the structure and function of human immune system and physiological immune response to different infectious agents.

KU.08 Explain the pathological conditions associated with immune response.

KU.09 Discuss different methods of immune response modulations, vaccines and drugs.

KU.10 Demonstrate different molecular techniques used for diagnosis of infections.

KU.11 Identify the different disinfection antisepsis and sterilization techniques.

B- Intellectual skills

IS.01 Analyze the relationship between mankind and pathogenic microbes.

IS.02 Appraise the methods suggested for overcoming microbial resistance to host defense mechanism.

IS.03 Analyze the short- and long-term effect of infectious diseases.

IS.04 Categorize a microorganism as a bacterium, virus or fungus according to standard taxonomy.

IS.05 Appraise a concise scientific activity according to standard scientific thinking and integrity.

IS.06 Appreciate the danger of handling and use of infectious agents on community and environment as a part of their ethical heritage.

C- Professional and Practical skills

PS.01 Master the basic diagnostic laboratory techniques in medical microbiology.

PS .02 Use the appropriate techniques for the diagnosis of infectious disease.

PS.03 Perform Quality assurance and control procedures.

D- General and transferable skills

GS.01 Exhibit honesty and integrity.

GS.02 Displays a professional commitment to ethical practice, team work and patient doctor confidentiality.

GS.03 Demonstrate communications and presentation skills.

GS.04 Learn from feedback and respond appropriately, work pragmatically to meet deadlines and critically evaluate own performance.

Matrix between ILOs of microbiology and immunology course (MIMS 01) and that of master (MSc) programme in Medical Microbiology and Immunology:

Items	ILOs of the programme	ILOs in course1 of Microbiology (MIMS 01)	Remarks
A-Knowledge and understanding	KU.1, KU.2	KU.1, KU.2	80 % fulfilled
	KU.3, KU.4	KU.3, KU.4	80 % fulfilled
	KU.5	KU.5	80 % fulfilled
	KU.6	KU.6	80 % fulfilled
B- Intellectual skills	IS.1, IS.2, IS.3	IS.1, IS.2, IS.3	80% fulfilled
	IS.6	IS.4	60% fulfilled

	IS.7	-----------	--
C- Professional/ practical skills	PS.1, PS.2	PS.1, PS.2	60 % fulfilled
	PS.3, PS.4	PS.	60% fulfilled
D- General and transferable skills	GS.1	GS.1, 3	50 % fulfilled
	GS.2	------------	---------------
	GS.3	GS.2	30 % fulfilled
	GS.4	GS.2, GS.4	20 % fulfilled

III. COURSE CONTENTS

A-Practical contents:

TOPIC	Contents	Hours	
		Lectures	Practical
Basic laboratory principles module practical sessions	1- **Safety in the laboratory:** Laboratory hazards: ▪ Biological ▪ Chemical ▪ Electrical ▪ Fire Safety measures and fire safety Decontamination Waste disposal	4	4
	2- **Microbiology laboratory organization**	4	-
	3- **Total quality control in the microbiology laboratory**	4	-
	4- **Essential laboratory equipment and supplies**	4	-
	5- **Titration in the laboratory**	8	4
	6- **Basic laboratory techniques**	6	6
General bacteriology module practical sessions	1- **Sampling**	6	-
	2- **Staining technique**	4	6
	3- **Cultivation of bacteria:** Types of culture media Preparation of bacteriological media	4	12

	Culture techniques Enumeration of bacteria		
	4- Conventional methods for bacterial identification: Examination of colonial morphology Microscopic examination Biochemical reactions	4	18
	5- Non-conventional methods for bacterial identification: Rapid multi-test systems Automated methods	6	12
	6- Antibiotic susceptibility test: Disc diffusion method	4	12
Immunology module practical sessions	**1- Blood film and types of blood cells**	4	6
	2- Conventional antigen antibody reactions: Agglutination tests ELISA	6	12
General virology module practical sessions	**1- Sampling:** Collection Transport Storage Processing	4	-
	2- Isolation of virus from clinical specimens: Tissue culture Inverted microscopy Chick embryo	6	18
Molecular biology module practical sessions	**1- Nucleic acid extraction:** DNA RNA Plasmid	4	18
	2- Electrophoresis and quantification of nucleic acids	2	6

B-Theoretical Contents

IV. TEACHING & LEARNING METHODS:

IV-A) METHODS USED:

TOOL	PURPOSE (ILO)
Lectures	KU.1-11
Practical Classes	PS.1-3 IS.5, 6
Seminars **Current Topics in Microbiology (CTIM)**	IS.1-3
Tutorials	GS.3
Group work	GS.3
Self-directed learning	IS.4, 5, GS.4
Student Presentations	GS.1-4
BUGS computer cases	KU.1-6, IS.1-4

IV-B) TEACHING PLAN:

Lectures: Division of students into1 group /week for each topic, time from10 am to 1 pm
Practical classes: Division of students into 2 groups /week, time from10 am to 1 pm
Seminars and CTIM: Once per week (Monday from 10 am to 11 am)
Student presentations: Each candidate has 3 presentations per semester
BUGS computer cases: Once per week (Wednesday from 10 am to 11 am)

IV-C) TIME PLAN: appendix 1

Item:	Time schedule	Teaching hours	Staff member
General Bacteriology		50 h	
General Virology		30 h	
General and advanced immunology		92 h	
Basic Microbial Genetics		64 h	

V. EDUCATIONAL RESOURCES

Lecture hall, seminar room in Medical Microbiology department
Bacteriology, virology, immunology and molecular biology laboratories
Data show, white boards, computers

VI. STUDENT ASSESSMENT:

VI-A) ATTENDANCE CRITERIA:
The candidate must achieve 75% attendance for lectures and practical sessions and seminars

VI-B) ASSESSMENT TOOLS:

TOOL	PURPOSE (ILO)
Written exam	KU.1-11, IS.1-6
Oral exam	KU.1-6, IS.4, GS.1, 3
Practical exam	PS.1-3, GS.1-4

VI-C) ASSESSMENT SCHEDULE:

	Exam	Date	
1	Written	May	September
2	Practical	Within two weeks after written exam	
3	Oral	Declared after completion of written exam	

VI-D) FORMATIVE ASSESSMENTS:

Written test (100 marks)	**Marks**
Bacteriology	12 marks
Virology	20 marks
Immunology	60 marks
Molecular Biology	8 marks

Practical exam (75 marks)

Bacteriology	25 marks
Immunology	40 marks
Molecular Biology	10 marks

VI-E) EXAMINATION DESCRIPTION:

<table>
<tr><th>Examination</th><th>Description</th><th>Marks</th></tr>
<tr><td>Written paper</td><td>Bacteriology, virology, immunology and genetics
(Long essay + SEQs, + MCQs)</td><td>100</td></tr>
<tr><td>Practical exam</td><td>Unknown samples (bacteriological, immunological and genetics) for 5 successive days</td><td>75</td></tr>
<tr><td>Oral exam</td><td>Each student will be examined orally by at least 5 questions covering the course studied. Five groups of examiners will be responsible to evaluate the candidate in 4 sessions.
<table>
<tr><td>General bacteriology</td><td>Molecular biology</td><td>General virology</td><td colspan="2">Immunology</td></tr>
<tr><td></td><td></td><td></td><td>G</td><td>S</td></tr>
<tr><td>15</td><td>10</td><td>20</td><td>20</td><td>10</td></tr>
</table></td><td>75</td></tr>
<tr><td>TOTAL</td><td></td><td>250 Marks</td></tr>
</table>

VII. LEARNING AND REFERENCE MATERIALS:

VII-A) BASIC MATERIALS:

- **Medical Microbiology and Immunology book** by professors of Microbiology and Immunology Department.
- **Schaechter's Mechanisms of Microbial Disease**,5th edition.
- **Medical Microbiology & Immunology**, by Jawetz, Melnick &Adelberg.
- **Medical Microbiology**, (Baron, 2nd edition; 4th edition on-line).

VII-B) SUGGESTED MATERIALS:

- **Rippon-medical Microbiology**- Jounders comp.
- **Infectious Disease: A Clinical Short Course** by F.S. Southwick, McGraw-Hill, 2013.
- **Infectious Disease and Medical Microbiology**, (Braude, 2nd edition).

Head of the Department: Prof. Hanan Elsayed

Date:

Department of Medical Microbiology & Immunology

Course specification

Degree: Master in Medical Microbiology and Immunology

Course title: Microbiology and Immunology (MIMS 02)

Programme (s) on which the course is given: Master degree in Medical Microbiology and Immunology
Major or minor elements of Programme: Major

Department offering the course: Department of Medical Microbiology & Immunology

Academic year/level: second academic year
Date of specification approval:
Course director: Chairman Prof. Magda Azab
Course Coordinator: Prof. SalwaBadr

A- Basic information:

Title: Medical Microbiology and Immunology 2
Code: MIMS 02
Course duration: 6 months
Total teaching hours: 366hrs
Lectures: 200hrs Practical sessions: 166hrs
Allocated marks: 750 marks (75% of the total mark)
Teaching staff: Staff members of the department

B-Professional information:

I. AIMS OF THE COURSE:

- **The aim of this course** is to provide graduates that can master the scientific basis of traditional and novel microbiological concepts, specialist practical skills and critical awareness to enable them to pursue careers in the microbiological field, whether in the hospital, laboratory, industrial or research settings.

II. INTENDED LEARNING OUTCOMES:

A- Knowledge and Understanding

KU.1 Illustrate medically important viruses, bacteria, fungal taxonomy, morphology, physiology and genetics.

KU.2 Explain the host parasite relationship and microbial pathogens.

KU.3 Describe the antigenic structure, pathogenesis, mode of transmission and virulence factors of bacteria of medical importance.

KU.4 Describe the antigenic structure, pathogenesis, mode of transmission and virulence factors of viruses of medical importance.

KU.5 Describe the antigenic structure, pathogenesis, mode of transmission and virulence factors of fungi of medical importance.

KU.6 Demonstrate a general awareness of significance of infections and impact on individuals as well as community.

KU.7 Discuss the components of infection control program in different health care facilities.

B- Intellectual skills

IS.1 Analyze the relationship between mankind and pathogenic microbes.

IS.2 Appraise the methods suggested for overcoming microbial resistance to host defense mechanism.

IS.3 Analyze the short- and long-term effect of different infectious diseases.

IS.4 Interpret results of microbiological, serological and molecular tests.

IS.5 Formulate a systematic approach for laboratory diagnosis of common infectious diseases and select the most appropriate and cost-effective tool leading to the identification of the causative organism.

IS.6 Differentiate the causative organisms causing same clinical diseases.

IS.7 Report and appraise a concise scientific activity according to standard scientific thinking and integrity.

IS.8 Correlate the signs and symptoms of disease to specific immunological disorder.

IS.9 Appreciate the danger of handling and use of infectious agents on community and environment as a part of their ethical heritage.

IS.10 Develop strategy for prevention and control of infection in health care facilities.

IS.11 Analyze numerical data using simple statistical methods.

C- Professional and Practical skills

PS.1 Master the basic diagnostic laboratory techniques in medical microbiology.

PS.2 Use the appropriate techniques for the diagnosis of infectious diseases and immunological disorders.

PS.3 Perform Quality assurance and control procedures.

PS.4 Assess the infection control needs in the community.

PS.5 Undertake their own research work.

PS.6 Evaluate the literature and proposes new hypotheses relevant to their research project.

PS.7 Write medical reports.

D- General and transferable skills

GS.1 Exhibit honesty and integrity.

GS.2 Displays a professional commitment to ethical practice, team work and patient doctor confidentiality.

GS.3 Demonstrate communications and presentation skills.

GS.4 Learn from feedback and respond appropriately work pragmatically to meet deadlines and critically evaluate own performance.

GS.5 Retrieve, manage and manipulate information by all means including electronic means.

GS.6 Work effectively within a team.

GS.7 Manage her/his time properly.

GS.8 Acquire the capacity of continuously educating him/herself.

Matrix between ILOs of Microbiology and Immunology course (MIMS 02) and that of master (MSc) programme in Medical Microbiology and Immunology:

Items	**ILOs of the programme**	**ILOs in course** Microbiology and Immunology **(**MIMS 02**)**	**Remarks**
A-Knowledge and understanding	KU.1-KU.3	KU.1-3	80 % fulfilled
	KU.4	KU.4	50% fulfilled
	KU.5	---------------	---------------
	KU.6	KU.5, 6	50% fulfilled
B- Intellectual skills	IS.1	IS.1	80% fulfilled
	IS.2-5	IS.2-5	60% fulfilled
	IS.7	IS.11	20%fulfilled
C- Professional/ practical skills	PS.1, PS.2	PS.1, PS.2	50 % fulfilled
	PS.3, PS.4	PS.3, PS.7	80% fulfilled
D- General and transferable skills	GS.1	GS.5	30 % fulfilled
	GS.2	----------------	-----------------
	GS.3	GS.2	30 % fulfilled
	GS.5, 6	GS.7, 8	20 % fulfilled

III. COURSE CONTENTS:

A-Theoretical Contents:

Units	**TOPIC**	**Hours**	
		Lectures	Practical
Unit 14	DNA viruses	24	14
	RNA viruses	24	10
Systemic virology	Virus like agents and slow virus diseases	4	2

	Emerging viral diseases	2	2
Unit 15 Gram positive And Negativecocci	*Staphylococcus aureus* (cutaneous infections, food poisoning, endocarditis, toxic shock syndrome, etc.)	12	12
	Staphylococcus epidermidis (endocarditis, catheter and shunt infection)		
	Enterococcus (UTI, septicemia, etc.)		
	Streptococcus pyogenes (pharyngitis, impetigo, erysipelas, rheumatic fever, etc.)		
	Streptococcus pneumoniae (pneumococcal pneumonia, otitis media, sinusitis, meningitis, etc.)		
	Streptococcus agalactiae (neonatal diseases, etc.)		
	Neisseria gonorrhoeae (gonorrhea, PID, etc.)		
	Neisseria meningitides (meningitis, etc.)		
Unit 16 Gram positive bacilli	*Bacillus anthracis* (anthrax)	10	10
	Listeria monocytogenes (neonatal disease, etc.)		
	Corynebacteriumdiphtheriae (diphtheria)		
	Clostdridiumperfringens (gas gangrene and food poisoning)		
	Clostridium tetani (tetanus)		
	Clostridium botulinum (botulism)		
	Clostridium difficile (diarrheal diseases)		
	Erysipelothrixrhusiopathiae (erysipeloid)		
Unit 17 Gram negative bacilli	*Escherichia coli*	18	20
	Klebsiella and citrobacter		
	Salmonella (gastroenteritis, enteric fevers, etc.)		
	Shigella (shigellosis)		
	Yersinia (plague and enterocolitis)		
	Vibrios (cholera, gastroenteritis, etc.)		
	Campylobacter (gastroenteritis)		
	Helicobacter (gastritis, duodenal ulcer, etc.)		
	Pseudomonas aeruginosa		
	Bordetella pertussis (whooping cough)		
	Francisellatularensis		
	Brucella		
	Haemophilus		
	Legionella pneumophila		
Unit 18 Anaerobes	Actinomyces	4	4
	Propionobacterium		
	Anaerobic Gram-negative bacilli		
	Nocardia		
Unit 19 Mycobacteria	*Mycobacterium tuberculosis*	4	8
	Mycobacterium leprae		
	Atypical mycobacteria		
Unit 20 Spirochetes	*Treponemapallidum*	4	8
	Borrelia (relapsing fever, lyme disease)		

Unit 21 Mycoplasma Rickettsia And chlamydia	Mycoplasma	8	6
	Rickettsia rickettsiae		
	Rickettsia prowazekii		
	Rickettsia typhi		
	Coxiellaburnetii		
	Chlamydia trachomatis		
	Chlamydia pneumonia		
	Chlamydia psittaci		
Unit 22 General mycology	General characters and classification	6	6
	Medical importance of major fungal pathogens		
	Fungal cell structure		
	Fungal morphology		
	Fungal replication		
	Fungal pathogenesis		
Unit 23 Systemic mycology	Mechanism of fungal pathogenesis	22	12
	Superficial mycosis (pityriasisversicolor, tineanigra, black piedra, etc.)		
	Cutaneous mycosis (etiology, ecology, epidemiology and clinical manifestations)		
	Subcutaneous mycosis (lymphocutaneoussporotrichosis, chromoblastomycosis, phaeohyphomycosis, etc.)		
	Systemic and opportunistic mycosis (reticuloendothelialcytomycosis, blastomycosis Gilchrist's disease, North American blastomycosis, paracoccidiodomycosis (South American blastomycosis), coccidiodomycosis, cryptococcosis, candidiasis, aspergillosis, zygomycosis, *pneumocystis carinii* pneumonia		
Unit 24 Infection control	Basic rules, cycle of infection, important organisms, hospital acquired infections	6	6
	Antibiotic policy	6	6
	Sterilization and disinfection & evaluation of disinfectant	6	6
	Hospital engineering	6	4
Unit 25 Applied microbiology	Commensal and pathogenic microflora (flora of major human body systems, dual nature of normal flora with respect to disease	4	4
	Infections of upper and lower respiratory tracts	6	6
	Infections of the gastrointestinal tract	6	6
	Infections of the genitourinary tract	6	6
	Infections of the CNS	6	4
	STDs	6	4

B-Practical Contents:

TOPIC	Contents	Hours	
		Lectures	Practical
Urinary tract Infection	These topics cover: 1- Clinical history and case study 2- Laboratory investigation 3- Microbiological diagnosis 4- Clinical and laboratory aspects of newly recognized or reemerging infectious diseases 5- Recently developed antimicrobial agents and their applications 6- New diagnostic laboratory technology	4	18
CNS Infection		4	18
Blood Stream infection		4	18
Body fluid infection		4	18
Upper respiratory tract infection		4	18
lower respiratory tract infection		4	18
Gastrointestinal tract infection		4	18
Wound infection		4	18
Sexually transmitted diseases		4	12
Medical Virology Module Practical Sessions	**1. Laboratory diagnostic markers of hepatitis viruses (HBV & HCV)**	4	6
	2. Laboratory diagnostic markers of HIV infection	4	6
Mycology Module Practical Sessions	**1. Microscopic Examination of medically important Fungi**	3	6
	2. Slide Culture techniques and Identification	3	12

IV. TEACHING & LEARNING METHODS:

IV-A) METHODS USED:

TOOL	PURPOSE (ILO)
Lectures	KU.1-4
Practical Classes	IS.5-8 PS.1-4
Seminars **Current Topics in Microbiology (CTIM)**	IS.1-4
Tutorials	GS.3
Group work	GS.3
Self-directed learning	PS.5-7
Case discussion **Student Presentations**	KU.1-7 IS.4-11 GS.1-3
Clinical Microbiological Conferences	GS.4-8
BUGS computer cases	KU.1-6 IS.4-8

IV-B) TEACHING PLAN:

Lectures: Division of students into 1 group /week, time from 10 amto1 pm

Practical classes: Division of students into 2 groups /week, time from 10 amto12 am

Seminars and CTIM: Once per week (Tuesday from 10-11 am)

Student presentations: Each candidate has 3 presentations per semester

BUGS computer cases: Once per week (Tuesday from 11-12 am)

IV-C) TIME PLAN:

Appendix 1

Item:	Time schedule	Teaching hours	Staff member
Systemic Bacteriology		128 h	
Systemic Virology		82 h	
Mycology		46 h	

Infection Control		46 h	
Applied Microbiology		64 h	

V. EDUCATIONAL RESOURCE

Lecture hall, seminar room in Medical Microbiology department
Bacteriology, virology and mycology laboratories
Data show, white boards and computers.

VI.STUDENT ASSESSMENT:

VI-A) ATTENDANCE CRITERIA:
The candidate must achieve 75% attendance for lectures and practical sessions and seminars.

VI-B) ASSESSMENT TOOLS:

TOOL	PURPOSE (IL O)
Written exam	KU.1-7,IS.1-11
Oral exam	KU.1-7, IS.4-8, GS.3
Practical exam	PS.1-4, GS.1-3

VI-C) ASSESSMENT SCHEDULE:

	Exam	Date	
1	Written	May	September
2	Practical	Within two weeks after written exam	
3	Oral	Will be declared after completion of written exam	

VI-D) FORMATIVE ASSESSMENTS:

Written test (300 marks)	**Marks**
Bacteriology	30%
Virology	30%

Mycology	20%
Infection Control	10%
Applied Microbiology	10%
Practical exam (250 marks)	
Bacteriology	40%
Virology	20%
Mycology	30%
Infection control	10%

VI-E) EXAMINATION DESCRIPTION:

<table>
<tr><th>Examination</th><th>Description</th><th>Marks</th></tr>
<tr><td>Written paper</td><td>Paper I involve systemic bacteriology, systemic virology and applied microbiology (SEQs + cases + MCQs)
Paper II involves general and systemic mycology and infection control</td><td>150
150</td></tr>
<tr><td>Practical exam</td><td>Unknown specimens working for 5 successive days</td><td>250</td></tr>
<tr><td>Oral exam</td><td>Each student will be examined orally by at least 5 questions covering the course studied. Six groups of examiners will be responsible to evaluate the candidate in 5 sessions
<table>
<tr><th>Bacteriology</th><th>Mycology G</th><th>Mycology S</th><th>Virology</th><th>Applied microbiology</th><th>Infection control</th></tr>
<tr><td>50</td><td>10</td><td>30</td><td>50</td><td>30</td><td>30</td></tr>
</table></td><td>200</td></tr>
<tr><td>TOTAL</td><td></td><td>750 Marks</td></tr>
</table>

VII. LEARNING AND REFERENCE MATERIALS:

VII-A) BASIC MATERIALS:

- **Medical Microbiology and Immunology book** by professors of Microbiology and Immunology Department.
- **Schaechter's Mechanisms of Microbial Disease**,5th edition.
- **Infectious Disease: A Clinical Short Course** by F.S. Southwick, McGraw-Hill, 2013.
- **Medical Microbiology**, (Baron, 2nd edition; 4th edition on-line).
- **Infectious Disease and Medical Microbiology**, (Braude, 2nd edition).

- **Rippon-medical Microbiology**- Jounders comp.
- **Koll and Kathrine practical Mycology**.

VII-B) SUGGESTED MATERIALS:

- **Medical Microbiology &Immunology**, byJawetz, Melnick&Adelberg.

Head of the Department: Prof. Hanan Elsayed

Date:

Zagazig University

Faculty of Medicine

Department of Medical Microbiology & Immunology

Postgraduate Course Specification

Degree: Doctorate (MD) in Medical Microbiology and Immunology

Course title: Medical Microbiology and Immunology course (Micro 4)

Program on which the course is given: MD degree in Medical Microbiology and Immunology
Major or minor elements of program: major
Department offering the course: Department of Medical Microbiology & Immunology
Academic year/level: Third academic year
Date of specification approval:
Course coordinator: Prof. Awny Gawish
Prof. Nahla Abd El Hameed

A. Basic information:

Title: Medical Microbiology & Immunology Micro 4
Code: Micro 4
Course duration: 12 months
Total teaching hours: 644 h
Lectures: 356 h Small group sessions: 288 h
Allocated marks: 400 marks (60% of the total mark)
Teaching staff: staff members of the department

A- Professional information:

I. AIMS OF THE COURSE

The aim of this course is to produce candidates able to master the scientific bases of traditional and novel microbiological concepts, having practical skills and critical awareness to enable them to pursue careers in the microbiological field, whether in the hospital, laboratory, industrial or research settings.

II. INTENDED LEARNING OUTCOMES (ILOs):

A- Knowledge and Understanding:

KU1 Demonstrate the structure, taxonomy, physiology, and genetics of bacteria, viruses, and fungi and to correlate these to the pathogenesis of the diseases they cause.

KU2 Explain the pathogenesis of the major infectious diseases, including their causative agents, epidemiology, and virulence mechanisms.

KU3 Explain the laboratory procedures used in the diagnosis of microbial diseases and the circumstances in which they are used.

KU4 Explain laboratory hazards and precautions against them.

KU5 Describes the signs and symptoms of the major diseases caused by infectious microorganisms and how to develop differential diagnosis for them.

KU6 Outline the classification of antimicrobial agents and the principles of their function.

KU7 Outline the principles of diagnosis, treatment, and prevention of the major infectious diseases.

KU8 Explain the structure and function of the human immune system; how it protects against infection and how it may contribute to the pathogenesis of infectious diseases.

KU9 Discuss different methods of immune response modulations, vaccines, and drugs.

KU10 Discuss the components of infection control program in different health care facilities.

KU 11 Identify the difference between the different research methods.

KU 12 Identify the sources of data and its types, different sampling techniques, sample size and screening tests.

KU 13 Describe tests of significance.

KU 14 List the different aspects of plagiarism and the methods to avoid this misconduct.

B-Intellectual skills

IS1 Categorize a microorganism, bacterium, fungus, or a virus according to standard taxonomy.

IS2 Analyze the relationship between mankind and pathogenic microbes.

IS3 Analyze clinical presentations of infectious diseases using the knowledge of host-parasite relationship.

IS4 Formulate a systemic approach for laboratory diagnosis of common infectious diseases and select the most appropriate and cost-effective tool leading to identification of the causative organism.

IS5 Interpret the results of microbiological, serological, and molecular tests.

IS6 Plan for overcoming microbial resistance to host defense mechanisms.

IS7 Develop strategy for prevention and control of infection in health care facilities.

IS8 Appraise a concise scientific activity according to standard scientific thinking and integrity.

IS9 Evaluate the validity of internet health information.

IS10 Analyze numerical data using simple statistical methods.

IS11 Formulate a scientific paper.

C-Professional/practical skills (PS)*:*

PS1 Process all routine specimens received in the laboratory.

PS2 Perform diagnostic microbiological, serological, and molecular tests.

PS3 Work safely in a laboratory.

PS4 Perform quality assurance and control procedures.

PS5 Assess the infection control needs in the community.

PS6 Able to undertake their own research.

PS7 Evaluate the literature and propose new hypotheses relevant to their research project.

PS8 Prepare a medical report, fact sheet or PowerPoint presentation regarding the contemporary medical topics in a reputable site.

D- General and transferable skills (GS)

GS1 Use information and communication technology effectively.

GS2 Search electronic databases and use the internet as a learning and communication resource.

GS3 Display a professional commitment to ethical practice, teamwork and patient doctor confidentiality.

GS4 Evaluate their work and that of others using constructive feedback.

GS5 Acquire the capacity of continuously educating himself/herself.

GS6 Represent researches in scientific meetings.

GS7 Exhibit honesty and integrity.

GS8 Consider the privacy aspects of data manipulations.

III. COURSE CONTENTS

Units	Topic	Hours			% of Total
		Lectures	Practical	Total	
Unit I Advanced Virology	Viral classification	4	2	6	0.9
	Viral structure	4	2	6	0.9
	Viral replication	4	2	6	0.9
	Mechanisms of viral pathogenesis	12	6	18	2.8
	Parvoviruses, Paramyxoviruses, Orthomyxoviruses and Reoviruses	6	2	8	1.2
	Rhabdoviruses, miscellaneous viruses and prions	6	2	8	1.2
	Togaviruses and Bunyaviruses	6	2	8	1.2
	Retroviruses	6	4	10	1.6
	Papillomaviruses, Polyomaviruses, Adenoviruses and Poxviruses	10	6	16	2.5
	Hepatitis viruses	6	4	10	1.6
	Herpesviruses	8	4	12	1.9
	Oncogenic viruses	4	2	6	0.9
	Slow viruses	2	2	4	0.6

Unit 2 Advanced Bacteriology	Introduction	2	2	4	0.6
	General principles	2	2	4	0.6
	Bacterial classification, morphology and structure	4	2	6	0.9
	Bacterial growth and metabolism	6	2	8	1.2
	Mechanisms of bacterial pathogenesis	2	2	4	0.6
	Sterilization, disinfection and antisepsis	2	4	6	0.9
	Laboratory identification of bacteria	2	6	8	1.2
	Antimicrobial agents	2	4	6	0.9
	Transmission of infectious microbial diseases	2	2	4	0.6
	Gram positive cocci	12	12	24	3.7
	Gram positive bacilli	10	10	20	3.1
	Gram negative bacilli	18	20	38	5.9
	Anaerobes, Antinomycetes	4	4	8	1.2
	Mycobacteria	4	8	12	1.9
	Spirochetes	4	8	12	1.9
	Mycoplasma, rickettsia and chlamydia	8	6	14	2.2

Unit 3 Advanced Mycology	Basic biology of fungi	6	6	12	1.9
	Superficial, cutaneous and subcutaneous fungi	12	6	18	2.8
	Systemic and opportunistic mycosis	10	6	16	2.8

Unit 4 Advanced Immunology	Defense against infection, antigens, expectations, etc.	8	4	12	1.7
	Cells of immune response, lymphoid organs	8	6	14	2.2
	Antibodies and humoral immunity	6	4	10	1.6
	Complement system, antigen antibody reactions	6	6	12	1.7
	Cell mediated immunity, protective immunoprophylaxis, hypersensitivity reactions	6	6	12	1.7
	MHC system and transplantation immunology	10	6	16	2.5
	Immune deficiency disorders	6	6	12	1.7
	Tolerance and Autoimmune diseases	6	6	12	1.7
	Immunity to tumors	6	6	12	1.7
	Vaccines and immune modulation	6	4	10	1.6
	Hypersensitivity reactions	6	4	10	1.6

Unit 5 Infection Control	Basic rules, cycles of infection, important organisms, hospital acquired infections	9	7	16	2.5
	Antibiotic policy	9	7	16	2.5
	Sterilization, disinfection and evaluation of disinfectant	9	7	16	2.5
	Hospital engineering	9	7	16	2.5

Unit 6 Applied Microbiology	Commensal, pathogenic human microflora	4	4	8	1.2
	Infections of upper and lower respiratory tract	6	6	12	1.9
	Infections of gastrointestinal tract	6	6	12	1.9
	Infections of genitourinary system	6	6	12	1.9

	Infections of CNS	**6**	**4**	**10**	**1.6**
	STDs	**6**	**4**	**10**	**1.6**

Unit 7 **Advanced Genetics**	**Bacterial genome, extrachromosomal elements, gene organization (operons, cistrons, etc.)**	**8**	**7**	**15**	**2.3**
	DNA replication, binary fission, polymerase chain reaction and gene expression, etc.	**8**	**8**	**16**	**2.5**
	Mutations, DNA repair, gene transfer, mechanisms of DNA recombination	**8**	**7**	**15**	**2.3**
Total		**356**	**288**	**644**	**100**

IV- TEACHING AND LEARNING METHODS

IV-A) METHODS USED

TOOL	**PURPOSE (ILO)**
Lectures	K1,K2,K3,K4,K5,K6,K7,K8,K9,K10
Practical classes	PS1,PS2,PS3,PS4,PS5,IS6
Seminars Current Topics in Microbiology (CTIM)	IS9,PS7,GS7
Tutorials	GS3
Group work	GS3
Self-directed learning	K11,12,13, GS1,2,4
Case discussion Student Presentations	K2,3,4,5,6,7, IS3,4,5

Journal articles review	K3,IS4,6
Clinical Microbiological Conferences	PS6,7,8, GS1,3
BUGS computer cases	K1,2,3,4,5,6,7,8,9, IS4,6

IV-B) TEACHING PLAN

Lectures: Division of students into only one group / week, Time from 10 am to 1 pm

Practical classes: Division of students into 2 groups / week, Time from 10 am to 1 pm in 2 labs.

Seminars and CTIM: once per week (Wednesday from 9-11 am).

Student presentations: each candidate has 3 presentations per semester.

BUGS computer cases: once per week

IV-C) TIME PLAN

Item	Time schedule	Teaching hours	Staff member
Advanced Bacteriology	Saturday	178 h	Prof. AzzaElSharkawy
Advanced Virology	Sunday	118 h	Prof. EnsafAzzazy
Advanced Mycology	Monday	46 h	Prof. Magda Azab
Advanced Immunology	Tuesday	128 h	Prof. AwnyGawish
Infection control	Wednesday	46 h	Prof. Fatma Amer
Applied Microbiology	Thursday	64 h	Prof. Hany Mowafy
Microbial Genetics	Saturday	64 h	Prof. SalwaBadr

V. EDUCATIONAL RESOURCES

Lecture hall and seminar room in Medical Microbiology Department.

Bacteriology lab, Immunology lab, Molecular biology lab, and Virology lab.

Data show, white boards and computers.

VI.STUDENT ASSESSMENT

VI-A) ATTENDANCE CRITERIA

The candidate must achieve 75% attendance for lectures and practical sessions and seminars.

VI-B) ASSESSMENT TOOLS

Tool	Purpose (ILO)
Written exam	KU 1-10, IS 1-6
Oral exam	KU 1-10, IS 1-6, GS3,6
Practical exam	IS1-6, PS1-6, GS6

VI-C) ASSESSMENT SCHEDULE

	Exam	Date	
1	Written	May	November
2	Oral	According to the success in written exam	
3	Practical	According to the success in written exam	

VI-D) SUMMTIVE ASSESSMENT

TEST	% OF GRADE
WRITTEN EXAM (200 mark)	
Bacteriology (60 mark)	30%
Genetics (10 mark)	5%
Virology (40 mark)	20%
Immunology (40 mark)	20%
Mycology (20 mark)	10%
Infection control (20 marks)	10%
Applied Microbiology (10 marks)	5%
PRACICAL EXAM (100 mark)	
Bacteriology and Applied (35 mark)	35%
Genetics (5 mark)	5%
Virology (20 mark)	20%
Immunology (20 mark)	20%
Mycology (10 mark)	10%
Infection control (10 marks)	10%

VI-E) EXAMINATION DESCRIPTION

<table>
<tr><th>Examination</th><th>Description</th><th>Marks</th></tr>
<tr><td>Written paper</td><td>Paper I Bacteriology, Mycology, and Infection Control

Paper II Virology, Immunology, Genetics, and Applied microbiology short essay Q, MCQ and cases</td><td>100

100</td></tr>
<tr><td>Practical exam</td><td>- Unknown specimens working for 5 successive days.

- Theoretical background of practical exam.

- Journal article review.</td><td>100</td></tr>
<tr><td>Oral exam</td><td>- Each student will be examined orally by at least 5 questions covering the course studied. Seven groups of examiners will be responsible to evaluate the candidate in 7 sessions.

<table>
<tr><th>Bacteriol.</th><th>Virol.</th><th>Immunol.</th><th>Mycol.</th><th>Infection control</th><th>Applied</th><th>genetics</th></tr>
<tr><td>30</td><td>20</td><td>20</td><td>10</td><td>10</td><td>5</td><td>5</td></tr>
</table>
</td><td>100</td></tr>
<tr><td>Total</td><td></td><td>400</td></tr>
</table>

VII. LEARNING AND REFERENCE MATERIALS:

VII-A) BASIC MATERIALS

- **Medical Microbiology and Immunology** by professors of Microbiology and Immunology Dpt.
- **Schaechter's Mechanisms of Microbial Disease,** Fourth edition.
- **Infectious Diseases: A clinical short course** by F.S. Southwick, McGraw-Hill, 2007.
- **Medical Microbiology,** Baron, 2nd edition, 4th edition on line
- **Infectious Disease and Medical Microbiology** (Braude, 2nd edition)
- **Rippon Medical Microbiology-** Jounders comp.

- **Koll and Kathrine Practical Mycology**
- **Journal of Medical Microbiology**

VII-B) SUGGESTED MATERIALS

- **Medical Microbiology & Immunology,** by Levinson and Jawerz (Appleton and Lange).

Course Coordinator: Prof. Awny Gawish

Prof. Nahla Abd El Hameed

Head of Microbiology and Immunology Department:

Prof. Hanan ElSayed

Date:

Zagazig University

Faculty of Medicine

جامعة الزقازيق

كلية الطب

Staff members

DEPARTMENT OF MEDICAL MICROBIOLOGY AND IMMUNOLOGY

DEGREE: Master in Infection Prevention and Control

(MSc)

Program Specification

2016/2019

<u>Date</u>: November 2016

A-Basic Information

1- Program Title: Master in **Infection Prevention and Control** (MSc).

2- Final Award: Master degree (MSc) in **Infection Prevention and Control** **Program type**: Single e Multip √

4-Responsible Department: Medical Microbiology and immunology Dep.

5- Program duration: 3 academic years

6- Number of Program Courses: 16courses(RM,ET,CS,CPR,IPMS1-11,THMS and one optional course(FE)

7-Coordinator: Prof. Fatma Ahmed Amer Mousa

8-External evaluators: Prof. Ahmed Ashraf Wegdan, Professor of Microbiology and Immunology –ElFayoum University

9-Last date of program specifications approval:

10- Program management team:

Prof. Fatma Ahmed Amer Mousa

- Dr Rehab H. Elsokkary

- Dr Rehab M. Elsaid

B-Professional Information:

1-Program aim:

To produce candidates equipped with the knowledge, specialist practical skills and critical awareness to enable them to be highly qualified infection prevetionists who can lead the infection control team and guide the health care providers for best practice in infection control.

To Provide candidates with the opportunity to participate in, and contribute to current infection control research programs within the department & hospitals.

To equip the candidate with critical understanding of the current issues and problems at the infection control &to focus on best practice throughout different levels and departments of health care facilities so the candidate will be able to plan, implement, and audit the infection control practices.

2- Intended Learning Outcomes (ILOs):

By the end of the Master program in Infection Prevention and Control the candidate will be able to:

A- Knowledge and Understanding

KU1 Identify general viral, bacterial, fungal taxonomy, morphology, physiology and genetics.

KU2 Identify the parasites (helminthes and protozoa) with important impact on infection transmission in health care facilities and community

KU3 Explain the host parasite relationship and microbial pathogens

KU4 Demonstrate a general awareness of epidemiology and pathophysiology of infectious disease process and its impact on individuals as well as community

KU5 Describe the antigenic structure and virulence factors of pathogens of medical importance

KU6 Identify the different antimicrobial agents (anti-bacterial antifungal ,anti-viral agents as well as anti-protozoal and anti-helminthic agents), their mode of action, adverse effects and mechanisms of microbial resistance.

KU7 Apply proper sterilization and disinfection methods.

KU8 Describe the structure and function of human immune system and physiological immune response to different infectious agents

KU9 Explain mechanism of opportunistic infections.

KU10 Define Principles of active and passive immunization.

KU11 Describe Common immunologic/serologic tests**.**

KU12 Describe the principles and basis of quality in the professional practices of applied microbiology, immunology and parasitology.

KU13 Explain the basics and ethics of both scientific research & professional practices in microbiology.

KU 14 Outline the principles of diagnosis and management of clinical syndromes such as respiratory tract infections, blood stream, urinary tract infections. .etc

KU15 Define basic concepts of Infection Control.

KU16 Identify risk factors for nosocomial infection transmission.

KU17 Define health Care Acquired infections.

KU18 Plan for IC program and resource allocation.

KU19 Identify organizational structure and Job description for IC positions.

KU20 Apply surveillance strategies of nosocomial infections.

KU21 Apply National and international guidelines for standard and general Infection Control measures.

KU22 Identify strategies for isolation precautions and appropriate patient placement.

KU23 Describe the audit cycle and interaction with surveillance cycles.

KU24 Define Performance indicators and quality improvement.

KU25 Discuss measures for patient safety.

KU 26 Identify indications for environmental microbiologic monitoring.

B: Intellectual Skills

IS1 Analyze the relationship between mankind and pathogenic microbes.

IS2 Plan for overcoming microbial resistance to host defense mechanism**.**

IS3 Analyze the short- and long-term effect of infectious diseases.

IS4 Interpret results of microbiological, parasitological, serological and molecular tests.

IS5 Formulate a systematic approach for laboratory diagnosis of common infectious diseases and select the most appropriate and cost-effective tool leading to the identification of the causative organism.

IS6solvespecific problems related to opportunistic infection

IS7 Analyze numerical data using simple statistical methods in infection control.

IS8 Manage infection control (IC) program

IS 9 Manage occupational health program

IS10 solve problems related to the epidemiology of the health care acquired infections

IS11critically explain infection control measures simply and effectively to both healthcare workers and patients

IS12utilize guidelines of infection/disease prevention and control

IS13 compare and contrast the common symptoms of infectious diseases

IS14 produce accurate letters/reports and other written correspondence with clear conclusions

IS15 Plan an independent research proposal to a high professional and ethical standard.

IS16: Plan, undertake and report an independent research project

IS17 Apply principles of adult learning

C- Professional/practical skills

PS1 Master the basic diagnostic laboratory techniques in medical microbiology and parasitology

PS 2 Use the appropriate techniques for the diagnosis of infectious disease.

PS3 Perform Quality assurance and control procedures.

PS4 Write and evaluate medical reports

PS5 Adhere to and comply with laboratory health and safety practice

PS6 Formulate a policy on the use of sterilization and disinfection in the laboratory, hospital or community.

PS7 Perform a risk assessment when required for all clinical and laboratory procedures undertaken in health care facilities.

PS8 Implement national guidelines

PS9 Supervise collection, safe handling and processing of all routine specimens received in the laboratory

PS10 Recommend appropriate tests leading to the identification of all common pathogens including the use of commercially produced kits (e.g. kits for enzyme assays) and rapid diagnostic kits (e.g. latex agglutination).

PS11 Differentiate between infection, colonization and contamination.

PS12 Interpret the results of different antimicrobial susceptibility testing including disc diffusion, MIC and MBC.

PS13 Evaluate critically the need for emerging techniques within the laboratory

PS14 Includ cost effectiveness and effects on staffing levels and working practices.

PS15 Recommendthe referral of specimens to reference facilities when indicated.

PS16 Provide informed advice on vaccination and immunization with all products normally available in Egypt

PS17 prepare standard operating procedures

PS18 prepare infection prevention reports

PS19 adhere to relevant precautions and safety procedures in various healthcare settings

PS20 Write well-structured and clear essays

PS 21 Evaluate the effectiveness of education and training

PS 22 Investigate for Outbreaks

D- General &Transferable skills

GS 1 Use information and communication technology effectively.

GS 2 Retrieve, manage, and manipulate information by all means, including electronic means.

GS 3 Work effectively within a team.

GS4 Evaluate their work and that of others using constructive feedback.

GS5 Manage his/her time properly.

GS6 Acquire the capacity of continuously educating him/herself.

GS 7 Learn from feedback and respond appropriately and effectively to supervision and guidance.

GS8 Work pragmatically to meet deadlines; critically evaluate own performance.

GS9 Communicate properly with colleagues, students, paramedical staff, patients and patients' family.

3. Academic standards:

3a. Generic academic Standards of Postgraduate Programs prepared by National Authority of Quality Assurance and Accreditation of Education (NAQAAE).

3b. External reference (Benchmarks)

1. Certification Board of Infection Control and Epidemiology (CBIC). Certification Board of Infection Control and Epidemiology, Inc. (CBIC), 555 E. Wells St., Suite 1100, Milwaukee, WI 53202: Web site: *www.cbic.org*
2. Association for Professionals in Infection Control and Epidemiology, Inc. (APIC) 1275 K St., NW, Suite 1000, Washington, DC. Washington, DC, apicinfo@apic.org

3c.Matrices:

i- Comparison between the ILOsof the Faculty of Medicine Zagazig university Master (MSc) in infection prevention and control program and that of theGeneric Academic standards of postgraduate programs prepared by National Authority of Quality Assurance and Accreditation of Education.

Generic academic standards of master program **المعايير الأكاديمية العامة لبرامج الدراسات العليا (برامج الماجستير)**	**ILOs of the MSc in infection prevention and control program Faculty of medicine Zagazig University**	**Remarks**
1-المعرفة و الفهم أ- النظريات والأساسيات المتعلقة بمجال التعلم وكذا في	• KU1, KU2, 8 KU14,15,17,18 • KU3,KU5,KU6,13,20,21	100 % is fulfilled

المجالات ذات العلاقة ب- التأثير المتبادل بين الممارسات المهنية وانعكاسها ت- التطورات العلمية في مجال التخصص. ث- المبادئ الأخلاقية والقانونية للممارسة المهنية في مجال التخصص. ج- مبادئ وأساسيات الجودة في الممارسات المهنية في مجال التخصص. ح- أساسيات وأخلاقيات البحث العلمي	• KU4, KU5,KU611,19,22,23 • KU7 KU24 • KU 24 • KU11, 22,23 • KU12	
المهارات الذهنية أ- تحليل وتقييم المعلومات في مجال التخصص والقياس عليها لحل المشاكل. ب- حل المشاكل المتخصصة مع عدم توافر بعض المعطيات ت- الربط بين المعارف المختلفة لحل المشاكل المهنية. ث- اجراء دراسة بحثية\ أو كتابة دراسة علمية منهجية لحل مشكلة بحثية. ج- تقييم المخاطر في الممارسات المهنية في مجال التخصص. ح- التخطيط لتطوير الأداء في مجال التخصص. خ- اتخاذ القرارات المهنية في سياقات مهنية متنوعة.	• IS 1,4, 5,7,15 • IS 5,6,10,12 • IS 9,13,14 • IS9,16,18 • IS3 • IS2,11 • • IS4,6,8	100% is fulfilled

المهارات المهنية أ -اتقان المهارات المهنية الأساسية والحديثة في مجال التخصص. ب -كتابة وتقييم التقارير المهنية. ت -تقييمالطرقو الأدوات القائمة في مجال التخصص	• PS1, 2,5,6,7,8,10,11,12,19 • PS4,17,18 • PS3,13,14,15,16	100% is fulfilled
المهارات العامة والمتنقلة أ -التواصل الفعال بأنواعه المختلفة ب -استخدام تكنولوجيا المعلومات بما يخدم الممارسة المهنية. ت -التقييم الذاتي وتحديد احتياجاته التعليمية الشخصية. ث -استخدام المصادر المختلفة للحصول على احتياجاته التعليمية الشخصية. ج -وضع قواعد ومؤشرات تقييم أداء الأخرين. ح -العمل في فريق وقيادة فرق في سياقات مهنية مختلفة. خ -إدارة الوقت بكفاءة. د -التعلم الذاتي والمستمر.	• GS1 • GS1,GS2 • GS4,7 • GS1,GS2 • GS4 • GS3 • GS5 • GS6	100% is fulfilled

ii- Comparison between the ILOs of the Master (MSc) Program in INFECTION prevention and control Faculty of medicine, Zagazig University and Certification Board of Infection Control and Epidemiology **(CBIC-2011).**

External Reference	Comparable ILOs in the faculty program	Remarks
I. Identification of Infectious Disease Processes	**KU5, , KU10 KU13,KU15,KU16 , KU26** **IS1-6** **PS1, PS2, PS9, PS10, PS11 , PS13**	**100% fulfilled**
II. Surveillance and Epidemiologic Investigation	**KU4 , KU3, KU16,KU19,KU21-23** **IS7-10** **, IS15, IS13** **, PS3, PS12, PS18**	**100% Fulfilled.**

III.	**Preventing/Controlling the Transmission of Infectious Agents**	**KU18** **PS8, PS6,** **PS13 – 17**	**100% fulfilled**
IV. **V.** **VI.**	**Employee/Occupational Health** **Management and Communication (Leadership)** **Education and Research**	**IS 9, IS8, IS13** **PS8, PS16, ,** **IS13,PS16,** **IS9, IS12, IS16, IS 18** **KU17, KU23 , KU24, KU25,** **IS8,IS 9, IS12, IS11, IS 15- 19**	**100% fulfilled** **100%Fulfilled** **100% fulfilled**

4- Programstructure:

Course	Credit hours	Academic year
RM, ET&CS	1.5	1st academic year
CPR	1	1st academic year
Optional course	5	1st academic year
IPMS 1,2,3,4,5,6	5.5	1st academic year

IPMS7,8,9,10,11	33	2^{nd}& 3^{rd}academic year
THMS	6	3rd academic year
Total	**56**	

5. Program courses:

Code No.	Title	Credit hours
RM, ET&CS	Research methodology –medical ethics- communication skills	1.5
CPR	Cardiopulmonary resuscitation	1
IPMS 1	Principles of Applied Medical Microbiology& Immunology	5.5
IPMS2	Principles of Med Parasitology & Entomology	
IPMS3	Principles of public health, epidemiology, ,biostatistics & surveillance	
IPMS4	Employee/Occupational Health	
IPMS5	Infection risks associated with health care	
	Optional course	5
IPMS6	Practical Training part 1	4
IPMS7	Principals of Infection prevention and control	4
IPMS8	Applied infection control practices	18
IPMS 9	Development and quality management	3
IPMS 10	Scientific activities	3
IPMS11	Practical training part 2	5
THMS	Research in infection prevention and control	6
Total		**56**

***Optional course:**

The candidate will choose one of the optional courses according to the bylaws of faculty of medicine

****Scientific activities:**

The students should participate in the scientific activities of the departments such as:

- Journal club (presenting scientific articles) once every 2 weeks.
- Seminars (including recent topics and controversial issues). Students are expected to participate in the discussions.
- Scientific meetings arranged by the department**.**
- Others e.g., conferences,etc

Each activity is monitored and registered in the candidate logbook.

*****Practical training program Part 1:** Medical Microbiology and Immunology **-** parasitology - clinical department**s**

******Practical training program Part**2 (Medical Microbiology and Immunology department – Zagazig University hospitals – different health care facilities of ministry of health)

6- Comparison between the ILOS of the Master (MSc) program in infection prevention and control and its courses <u>(APPENDIX 1)</u>

7-*<u>Program Admission Requirements</u>*

According to the bylaws of the Faculty of Medicine – Zagazig University for Post Graduate Programs, applicants should have MBBch or equivalent degree. According to Zagazig University requirements, all applicants for postgraduate studies should fulfill preliminary courses on the following subjects; – English language (TOEFL or equivalent degree) – Computer skills (ICDL). Selection criteria will be established by the Council of the Medical Microbiology and Immunology Department including the minimum score of the Bachelor Degree.

Also, physicians with a post-graduate degree (Master or Doctorate) after MBBch or equivalent degree are eligible to apply for this Master. Selection criteria will be established by the Council of the Medical

Microbiology and Immunology Department provided that candidates should be exempted from equivalent course(s) they have already passed.

8- Regulations for progression and program completion

Assessment Methods

1. **Continuous assessment**:

a) Written assignments

b) Presentation provided by candidate in context of teaching other health practitioners

c) Acquired laboratory skills as reported by supervisors

2. **End stage assessment**:

d) Written examinations

e) Practical examinations

f) Oral examinations

g) Project acceptance

h) Thesis acceptance

At the end of 1st AcademicYear

* **Fulfillment** of the attendance, effective discussion in seminars and performance in practical lab.

* PassExamination of the course**s** of first academic year.

2nd and third Academic Year:

Prerequisite

- Pass Examination of the courses of first academic year

***** Registration of the thesis protocol.

* Perform the master thesis in new area of Infection Prevention& Control : fulfillment of the supervisors report every 3 months.

* Perform a seminar about the thesis results.

* Acceptance of the Master thesis from judgment committee nominated by department council after public discussion.

*Pass examinationofcourse**IPMS**7,8 and acceptance of the project of **IPMS9**.

9- Evaluation of program intended learning outcomes

Evaluator		Tool	Sample
1- Exams results		Results analysis Report	All the students
2- Students		Questionnaires	All the students
3-Graduates after achieving MSc degree		Questionnaires – group discussion	10 at least
4-Stakeholders	*- teaching staff. *- Technicians. *- Regional medical institutes *- International medical institutes. *- other Governmental faculties *- Nongovernmental faculties	Interviews Internet contact Phone calls Questionnaires	10 at least
5-External Evaluator		Questionnaires	1 at least
6-Others (If Present) hospital managers		Questionnaires	**3 at least**
Patients		Questionnaires	**10 at least**

10-References:

10.a. basic materials

- Amer F A. Hospital infection control. 2nd ed. Cairo, 2012
- APIC text of infection control and epidemiology
- basic concepts of infection control (2011) The International Federation of Infection Control (IFIC)
- Infection Control guidelines of U.S. centre for disease control and prevention (CDC)
- Friedman C, Newsom W. Basic concepts of infection control. 2nd edn. International federation of infection control; 2011.
- World health organization. Tile of publication [Internet]. Year of publication [cited 2012] Available from: who.org.
- وزارة الصحة والسكان – جمهورية مصر العربية – الدليل القومي لمكافحة العدوى- الجزء الأول: الاحتياطات القياسية لمكافحة العدوى- الطبعة الثانية- 2008.
- وزارة الصحة والسكان – جمهورية مصر العربية – الدليل القومي لمكافحة العدوى – الجزء الثاني: مكافحة العدوى في الأقسام المختلفة في المنشأة الصحية – الطبعة الثانية – 2008.
- Association of professionals in infection control and epidemiology (APIC) guidelines.

9. b SUGGESTED MATERIALS:

- Medical Microbiology & Immunology, by Levinson and Jawetz (Appleton and Lange
- The Royal College of pathologists for specialist training in medical microbiology and virology (2010)
- Heymann, David L..control of communicable disease manual 18thed Washington DC American Public Health Association,2004
- Brooks, Kathy , ready reference for microbes APIC 2007

11-Supports for Candidates and their Learning:

Candidates and their learning are supported in a number of ways:

- ✓ Printed copies of the program and infection prevention and control courses (Candidates aware of the ILOs and requirement of the Master degree in infection prevention and control
- ✓ Availability of University central library.
- ✓ Availability of the Faculty postgraduate library
- ✓ Availability of the faculty digital library.
- ✓ Availability of the other educational resources included in every course.
- ✓ Supervisors of the Master thesis (three Staff members according to the research specialtyfor each candidate)
- ✓ Websites available in the department.

11-Methods used for improving the program:

- ✓ Peer teaching observations and feedback to the program management team and the coordinator (written reports at the end of the courses).
- ✓ Faculty appointed external examiners.
- ✓ Candidates' evaluation of teaching (Questionnaires).

12-Committee with responsibility for monitoring and evaluating quality:

- ✓ Internal Evaluators:
  1- Prof. Fatma Ahmed Amer Mousa (Head of Medical Microbiology and Immunology Department).
  2- Member from Quality unit in the faculty.

- ✓ External Evaluator:

Prof. Ahmed Ashraf Wegdan, Professor of Microbiology and Immunology – ELFayoum University

13- Regulations of assessment by-laws of the master (MSc) degree postgraduate of the faculty of medicine:

course.	Total	Written	Oral	practical	Total 1350
RM, ET&CS	75	50	25	-	
IPMS 1	90	50	15	25	
IPMS2	85	50	15	20	
IPMS3	75	50	25	-	375
IPMS4	50	50	-	-	
IPMS 5	75	50	25	-	

First academic year					**450**
IPMS7	390	170	70	150	
IPMS8	390	170	70	150	
IPMS9	120	-	-	120	
2nd& 3rd academic year					**900**

- **First academic year:**

- Attendance of at least 75% of the teaching courses.
- Log book fulfilled and approved by the head of each department.
- optional course has written, oral and practical exam and the candidate pass when gets 60% of total marks, this is not included in the total marks
- **IPMS 1**(Basic Medical Microbiology & Immunology): one-hour written exam (including short essay and multiple-choice questions) + oral and practical exam by Med Microbiology & Immunology Dept.
- **IPMS** 2(Principles of Medical Parasitology & Entomology): One hour written exam by Medical Parasitology Dept. + oral & practical exam by Medical Parasitology Dept.
- **IPMS** 3 (Principles of public health, epidemiology, med biostatistics & surveillance): One hour written exam (including short essay and multiple-choice questions) + oral exam by Community Medicine Dept.
- **IPMS** 4 (Employee/Occupational Health): One-hour written exam (including short essay and multiple-choice questions) by Occupational Health Dept.
- **IPMS**5 (Risks of infections): One-hour written exam for of the Internal Medicine Dept, Pediatric Dept, Surgery Dept and Intensive care Medicine Dept

- **second and third academic years**

- Pass the exams of courses of first academic year (at least 60% of total Mark).
- Attendance of at least 75% of the teaching courses.

- Log book fulfilled and approved by the head of the department.
- IPMS7 **(Principals of Infection prevention and control)**: Three-hour written exam (including short essay, multiple choice questions and cases scenario); Oral exam and Practical exam by Med Microbiology & Immunology Dept.
- IPMS8 **(Applied aspect of infection control):** Three-hour written exam (including short essay, multiple choice questions and cases scenario); Oral exam and Practical exam by Med Microbiology & Immunology Dept
- IPMS9 **(Development and quality management)** : quality improvement project to be evaluated& graded by scientific committee designated by the Microbiology & Immunology Dept

NB: Examinations are conducted twice yearly.

THMS

*- Preregistration seminar.

*- Registration of the thesis title.

*- Perform the thesis within at least 6 months of registration.

*- After finishing the Master thesis Candidate perform a seminar about the thesis results.

*- Three progression reports are introduced by each supervisor (one every 3 months).

*- Master thesis acceptance by the supervisors.

*- Master thesis acceptance by the judgment committee in an advertised public session by three professors including one of the supervisors, one from the faculty and third from other faculty.

*- Four copies of the thesis must be given to the postgraduate library.

13-Rules for awarding the Master Degree in Infection Prevention & Control:

* Candidates must pass the final exam of courses**of first academic year**as a prerequisite to register at the master thesis.

* Master thesis must be accepted by the judgment committee before attend the final exam of **second & third academic year**

*Candidates must pass the final exams of courses**2nd , 3rd academic year** (at least 60%).

Head of Microbiology&Immunology Department:

Prof. Magda MostafaAzab

Staff members

مسلسل	الأسم	الوظيفة	ت. محمول	ت. المنزل	E-mail	العنوان	
1.	عمر الدالي.	أستاذ	0106999700	0552329700		ش عثمان بن عفان فيلل الجامعة	توفى الى رحمة الله
2.	سلوي بدر الصباح.	أستاذ	0101747885	0552365091		مساكن الجامعة ش الإمام علي	
3.	عزة الشرقاوي.	أستاذ	0121053981	024104889		القاهرة	
4.	إنصاف عبد الجواد	أستاذ	0123630643	024038060		القاهرة	
5.	أحمد شاهين.	أستاذ	010676434	0552850047		10ش النادي بلبيس	
6.	ماجدة عبد الرحمن.	أستاذ		0552351495		فيلل الجامعة 1ش عاشور	سفر
7.	احمد شاهين	أستاذ	0123134810			الزقازيق	
8.	فوزية نوفل.	أستاذ	0122900556	0552356926		7ش المدرسة القومية	
9.	زهيرة فتحي.	أستاذ	01090593123	0552342086		القاهرة	
10.	هانى موافى	أستاذ	01063778687			الزقازيق	
11.	عوني جاويش.	أستاذ	0105057954	0502244036		12ش جمال الدين المنصورة	
12.	مصطفي سلطان.	أستاذ	0115394476	0552319965		القوميه الزقازيق	
13.	مني شلبي.	أستاذ	0123660128	0552314447		حي الزهور – الزقازيق	
14.	فايزة فتحي.	أستاذ	0161796165	0552590360		ههيا	
15.	حسام عبد العزيز.	أستاذ	0118443766	022745200		70ش حسن مأمون مدينةنصر	
16.	نجوي أحد الباز.	أستاذ	0122375282	022751328		16ش محمود سامي مدينة نصر	
17.	أحمد رشدي.	أستاذ	0123103365	0552322545		ع عبدالعظيم فراج ش عبدالعظيم فراج	
18.	سمية الشيخ.	أستاذ	0103357533	0552326626		القومية 10ش أحمد إسماعيل	
19.	ليلي القاضي.	أستاذ	0100089922	0552302679		الزقازيق	
20.	أشواق فؤاد.	أستاذ	0122870266	0552302679		3 طريق جمال عبد الناصر	
21.	ماجدة عزب.	أستاذ	0121724852	0552321196		القومية – الزقازيق	
22.	علاء هدهود.	أستاذ	01227004781			72ش عمار بن ياسر مصر الجديدة	
23.	سمية سمور.	أستاذ	0122380878	026245756		72ش عمار بن ياسر مصر الجديدة	سفر

24.	إلهام سامي.	أستاذ	0122182327	026429479		184ش النزهة مصر الجديدة	
25.	نانا عبد الرحمن	أستاذ	0127881429			التجمع الخامس – القاهرة	
26.	منى رشاد	أستاذ	0122496903				سفر
27.	منال عبد التواب	أستاذ	0122496903	0552321486		الرحاب – القاهرة	
28.	حنان السيد.	أستاذ	0165106791	0552354749		الزقازيق	
29.	كمال فهمي.	أستاذ	0119898702	0552331499	kamfahmy@yahoo.com	الزقازيق ش د/ طلبة عويضة	
30.	أحمد عامر	أستاذ	0101099890	023472680		8ش جامعة الدول المهندسين	
31.	عبداللهالبيبلي.	أستاذ	0127886322	0502213060		المنصورة المشاية برج أجياد	
32.	هبة مهتدي	استاذ	0101747935	0552353740	heba1001@hotmail.com	ش مكة حى السلام خلف فيلل الجامعة	
33.	جيهان الشناوي	استاذ	0121232300	0552346364		ش القومية أمام السوق المركزي	
34.	ألفت محفوظ.	أستاذ م		0225897079		1ش الدعاء عمارات عثمان الميرلاند	توفت الى رحمة الله
35.	حسام الشرقاوى.	أستاذ	0110073260			الزقازيق	
36.	سوزان بكير.	أستاذ م	0123249928	0552344866		القومية 7ش احمد إسماعيل	
37.	ايمن مرعى	أستاذ	0122925505			الزقازيق	
38.	ايمن علام	أستاذ	01069749705			الزقازيق	
39.	مرفت سليمان	استاذ	0127580193	0552353674		ش جودة مفارق موقف المنصورة	
40.	أمل عطا	استاذ	0105052070	0552297633		القومية امام مستشفى السلام الزقازيق	
41.	إيمان البهيدى	استاذ	01098177980	0552356187		تقسيم المهنيين خلف سور الري	
42.	رغدة عبد اللطيف	استاذ	0123996914	0506915454		دقادوس - ميت غمر	
43.	نهلة عبد الحميد	استاذ	0121053991			ميت غمر	
44.	مي مأمون	استاذ	0121135313	025167154		القاهرة المعادي الجديدة	
45.	هند السيد	أستاذ	0127881625	0552357355	Hendsharaf2002@yahoo.com	3 ش عمار بن ياسر فيلل الجامعة	سفر
46.	تقوي السيد	أستاذ	0151146290	0552308002		حي الزهور أمام مدرسة الشبان المسلمين	
47.	غادة سمير	أستاذ	01283508665			الزقازيق	
48.	مها كمال	أستاذ	0100101819			الزقازيق	
49.	راندا صديق	أستاذ	0123540864	0552371428	randa@yahoo.com	ش السلام صيدناوي الجامعة	
50.	شيماء عبدالعظيم	أستاذ	0102686208	0553987775		أمام محطة بنزين أسو فاقوس	

51.	مروة عبدالعظيم	أستاذ	0100089876	0553940582		أمام محطة بنزين أسو فاقوس	
52.	داليا الحصري	استاذ م	0127972253	0552316884	Dalia_ezaat73@yahoo.com	القومية ش د/ طلبة عويضة	سفر
53.	تيسير صابر	أستاذ م	0124509789	0552332458		برج المدينة المنورة حي الزهور	سفر
54.	رحاب السكرى	أستاذ م	0105650273	0552306016		12 ش اللواء عبد العزيز علي	
55.	إيناس عبدالظاهر	أستاذ م	0100837372	0552323505	enasatantawy@yahoo.com	6 ش هثمان بن عفان فيلل الجامعة	
56.	ماريان أسعد	استاذ م	0103819530	0643344905		حي السلام الإسماعلية	
57.	سمر سعيد	استاذ م	0124607245	0552333122		5 ش 10 حي الزهور	سفر
58.	ريهام الشبراوي	استاذ م	0105275672	0552320400	Reham-elshabrawy@yahoo.com	11 شارع عطية الغمري، حي المستشارين، القومية	
59.	نسرين البدوي	استاذ م	010192377	055363802 2	Nissreen_badawy @hotmail.com	2 ش الفردوس حي السلام	
60.	أحمد الصادق.	أستاذ م	0105356630	0552341813		القومية ش الملك الصالح	
61.	رحاب الطحلاوي	مدرس		0552356583	rehablab@yahoo.com	حي الزهور أمام مدرسة الناصرية	سفر
62.	سعيد عبد المحسن	مدرس					سفر
63.	رحاب السعيد.	مدرس	0126526164	0552317840			
64.	منار حسن سليمان	مدرس	01006198706			3ش عثمان بن عفان فلل الجامعة	
65.	رغداء عبد العزيز	مدرس	01285066581			الزقازيق	
66.	عماد عبد الحميد محمد	مدرس	01141572949		Emadmorad2010 @yahoo.com	ميت غمر شارع المنصورة عقار الصالح الدور الرابع	
67.	هبة محمد قدري	مدرس	0121381452	0552303704	heba_mk@yahoo.com	مساكن الشيراتون المنطقهالرابعه .القاهره.	سفر
68.	فريدة حسن	مدرس					سفر
69.	نيهال الشبراوي	مدرس					سفر
70.	شيماء حسن سليمان يحيى	مدرس	01000089547	0552361543	shymaa.yahia@yahoo.com	شارع مستجد خلف الثانويه بنين -بلبيس -الشرقيه	سفر
71.	وفاء صلاح عبدالحليم	مدرس	0106954222	0553765110	drwafaa.salah@yahoo.com	شارع عبد الغفار المتفرع من شارع السوق.. ديرب نجم شرقية	
72.	عالية عبد المنعم محمد	مدرس	0123561365	0552304600	aliaabdelmonem @yahoo.com	2ش المدير منشية أباظة	

	ش محمد النادي من ش مدرسة القومية	rania_aamir80@yahoo.com	0552328242	0124883040	مدرس	رانيا محمد محمد ابراهيم عامر	73.
	هيهيا خلف مدرسة الزهراء الثانوية بنات		0552552299	0106832589	مدرس	ماهر الشافعي.	74.
اجازة				01202302071	مدرس	عزة عمر	75.
	6 شارع السعودية المساكن التعاونية – القومية	anisreham@yahoo.com	055/ 2379705	01011210712	مدرس	ريهام حسن	76.
	القوميه – الزقازيق			0100711138	مدرس	مى مالك	77.
سفر					مدرس	رشا عادل	78.
	ابو حماد – ش المزلقان الجديد	dr_hm55@yahoo.com		01273467516	مدرس	هناء محمد اسماعيل	79.
	منيا القمح امام المدرسة الفنية الصناعية	hebadiab2005@gmail.com		01008054194.	مدرس	هبة عبد العزيزمحمد	80.
	منياالقمح ش طاهر كف خلف مدرسة الزراعة	drshimo82@yahoo.com		01009816616	مدرس	الشيماء لطفى عبدالحفيظ	81.
	19ش سوريا بجوار مدرسة اللغات بنات حى ثان الشرقية			01223512499	مدرس	دعاء الحسينمصطفى	82.
	فلل الجامعة ش الامام على- الزقازيق	dr.rehabrabie@yahoo.com	0552339692	01003308765	مدرس	رحاب احمد ربيع محمد	83.
				01002630954	مدرس	منار جودة محمد جبريل	84.
	ش صالح أبو رحيل متفرع من ش فاروق اول الزقازيق	dr_nightingale@hotmail.com	0552281148	0124264909	مدرس	نهى محمد السيد حماد	85.
	الزقازيق عمارات الاسكان والتعمير عماره 8	ayat_233@yahoo.com	0552334111	01068223380	مدرس	غادة عبد المنعم مختار	86.
	برج السليم 3 القومية الزقازيق ثان	nemetwaly@yahoo.com		01007246201	مدرس	نورا السيد	87.
	الزقازيق			01282564234	مدرس	شيرين عاطف	88.
	8 ش الصفا و المروه -حى السلام -الزقازيق	alqurashilobna@yahoo.com	055_2315503	01061488652	مدرس	لبنى عبد العزيز	89.

01146894594

معامل القسم(Department’s labs)

1-معامل الطلاب (Students’ labs): ثلاث معامل

1- الطاقة الاستيعابية للمعامل: لا تزيد عن 40 طالبا..
2- التأثيث: بنشات/ كراسى للطلاب / منضدة المحاضر/ دواليب حفظ الكيمياويات والنماذج/ أرفف.
3- درجه الحراره: وجود وسائل لتلطيف درجات الحراره من مرواح ووسائل تهويه.
4- التهويه: جيده
5- الاضاءه: جيده
6- الفنيون: فني مختبر/ العمالة غير الفنية
7- الأبواب والمخارج: تفتح الابواب للداخل.

<u>قاعات التدريس</u>

1- الطاقة الاستيعابية للقاعات: مناسبة لعدد الطلاب.

2- المساحة الأرضية المخصصة للطلاب: ملائمه.

3- التأثيث: كراسى للطلاب/ منضدة المحاضر (ملائمة) .

4- درجه الحراره: وجود وسائل لتلطيف درجات الحراره من مرواح ووسائل تهويه.

5- التهويه: جيده

6- الاضاءه: جيده / الستائر (ملائمه)

7- الأبواب والمخارج: تفتح الابواب للداخل

<u>تجهيزات</u>

1- يتوافرعددمناسب من المناضد لكل معملوقاعةتدريس.

2- تتوافر سبورات بيضاء مع مستلزماتها لكل معمل وقاعةتدريس.

3- تتوافر منضدة للمحاضر.

4- وجود اتصال دائم بالكهرباء.

5- الوسائل السمعيهوالبصريه: تتوافر الوسائل البصريه للازمه لمتطلبات العمليهالتدريسيه من الداتا شو وشاشاتعرض .

<u>متطلبات الامن والسلامة</u>

1- خطة الاخلاء / مسئول الاخلاء / مطافيء: لا يوجد داخل المعمل.

2- مصدر للمياه: يوجد..

<u>متطلبات النظافة</u>

يتم التنظيف الدورى للمعامل بحيث تكون مصدرا أمنا من العدوى لاعضاء هيئة التدريس والطلبة داخل المعمل.

2- معامل الدراسات العليا (postgraduates' labs)

أ- معمل البكتريولوجي: وهو المعمل الاساسي بالقسم ومن خلال ما يحتويه من اجهزة يستطيع الباحث فصل البكتريا والتعرف عليها بالطرق المختلفة ومعرفة حساسيتها للمضادات الحيوية.

ب- معمل المناعة: هذا المعمل يتم فيه تدريس الجزء العملي للمناعة الطبية لطلاب الماجستير والدكتوراة كما يقدم خدمة تشخيص بعض الامراض المناعية من خلال قياس الاجسام المضادة في الدم

ج-معمل البيولوجيا الجزئية: يوفر هذا المعمل عمل الاختبارات الجزيئية مثل فصل الحامض النووي وتفاعل البلمرة المتسلسل لتشخيص الامراض المختلفة ويحتوي هذا المعمل علي العديد من الاجهزة التي تخدم البحث العلمي

د- قاعة تدريس دراسات عليا: وهي قاعة مجهزة للتدريس لطلبة الدراسات العليا

ه- وحدات خاصة

1- وحدة الحساسية والمناعة بكلية الطب البشري – جامعة الزقازيق(Allergy and Immunology Unit)

تاريخ الإنشاء :سنه 1989 بقرار رقم (32) بتاريخ 1989/3/8

العنوان: الدور الأول مبنى المعامل (الأكاديمي)- كلية الطب البشري - جامعة الزقازيق والدور الخامس بمبني العيادات الخارجية

الرؤية والرسالة:
تسعي وحدة الحساسية والمناعة بجامعة الزقازيق لتقديم خدمات التشخيص والعلاج والمتابعة لمرضي الحساسية بأنواعها المختلفة بمحافظات الشرقية والدلتا والقناة وذلك وفقاً لنتائج الأبحاث العلمية الحديثة والمعايير العالمية وذلك من خلال نخبة من الخبراء والمتخصصين في هذا المجال، كما تقوم الوحدة علي نشر الوعي المجتمعي والجامعي عن أحدث طرق الوقاية والعلاج من خلال تنظيم الندوات والمؤتمرات العلمية.

أهداف الوحدة:

- تشخيص أمراض الحساسية عن طريق التقييم الإكلينيكي للحالات التي يشتبه إصابتها بالحساسية وعمل اختبارات الجلد لأنواع الحساسية المختلفة بهدف التعرف علي مسببات هذه الحساسية.
- علاج مرضي الحساسية المختلفة بالعلاج المناعي.
- متابعة المريض إكلينيكيا ومعمليا لمعرفة مدي استجابته للعلاج.
- إجراء الأبحاث العلمية المختلفة فى مجال الحساسية.
- وضع خطة تدريبية مناسبة في مجال أمراض الحساسية لتطوير وتحسين الخدمة الصحية.

مجلس الإدارة:

- أ.د/ عميد الكلية (رئيس مجلس الإدارة)
- أ.د/ وكيل الكلية لشئون خدمة المجتمع وتنمية البيئة (نائباً للرئيس)
- أ.د/ رئيس قسم الأمراض الصدرية والحساسية (عضواً)
- أ.د/ رئيس قسم الميكروبيولوجيا والمناعة الطبية (عضواً)
- أ.د/ بقسم الميكروبيولوجيا والمناعة الطبية (مديرا للوحدة وأمينا ًللمجلس)

وقد كانت البداية مع ....

نخبة من أساتذة قسم الميكروبيولوجيا والمناعة الطبية:

أ.د/كمال فهمي أ.د/محمد المسلمي أ.د/أحمد مراد

أ.د/أحمد عامر أ.د/طارق غيث .د/محمد الأحمدي

أ.د/لبنى عبد الفتاح أ.د/عبد الله البيلي أ.د/عزة عبد العزيز

تحت مظلة ورعاية ....

السادة الأساتذة رؤساء قسم الميكروبيولوجيا والمناعة الطبية على مدار سنوات عمل وحدة الحساسية والمناعة