Master (MSc) Program and courses' specification for Medical Microbiology and Immunology

(2023)

University: MINIA

Faculty(s): MEDICINE

Department: Medical microbiology and Immunology

A- Basic Information:

1. **Program title and code:** Master Degree in Medical Microbiology & Immunology.MB200
2. **Program type:** √ Single □ Double □ Multiple
3. **Department responsible for offering the degree:** Medical Microbiology and Immunology
4. **Departments involved in the program:** Medical Microbiology and Immunology Department and Public Health and Community Medicine department.
5. **Number of program courses:** Two
6. **Coordinator:** Dr. Dalia Nabil
7. **External evaluators:** Prof Dr. Wafaa Zahran
8. **Internal Evaluator:** Prof Dr. Wafaa Khairy
9. **Program management team:**
   Prof Dr. Mohamed abdelhamid
   Prof Dr. Mahmoud Shokry
   Prof Dr. Mona abdelmonem
   Prof Dr. Mohamed Sayed
   Prof Dr. Rasha Khiry
   Prof Dr. Noha Anwar
   Prof ass Dr. sahar abo eloon
   Ass.prof Dr. Soha sameh
   Ass. Prof Dr. wedad mahmoud

B- Professional Information

1- Program aims

Graduate of Master degree in Medical Microbiology and Immunology should be able to:

1.1 Acquire scientific knowledge essential for practicing Medical Microbiology& Immunology according to the international standards.
1.2 Exhibit Skills necessary for preparing for proper diagnosis and management of patient problems in the field of Medical Microbiology& Immunology, and for conducting and supervising researches in Medical Microbiology& Immunology fields.
1.3 Acquire Ethical principles related to the practice in this specialty.
1.4 Show Active participation in community needs assessment and problems solving.
1.5 Acquire maintenance of learning abilities necessary for continuous medical education.
1.6 Exhibit maintenance of research interest and abilities.

2 - Intended learning outcomes (ILOs)

A- Knowledge and understanding:

By the end of the study the candidate should be able to:

A1 Identify the microbes affecting human beings all over the world including bacteria, viruses and fungi.
A2 Explain the geographical distribution and impact of each microbe in health and disease.
A3 Recognize the pathogenesis, clinical symptoms and complications of each microbe.
A4 outline the laboratory tests needed for diagnosis of each case.
A5 Identify the antibiotics and instructions used for treating each case, especially as regards drug complications and interactions.
A6 Recognize the basics of infection control measures, and their ever-increasing role in disease prevention
A7 Identify the basics of the immune system, and the role it plays in health and disease.
A8 Identify bacterial genetics and its implications with human genetics.
A9 Recognize the role of molecular genetics and molecular biology applications in general.
A10 Explain the scientific developments in the field of microbiology & immunology
A11 Identify the role of the environment in affecting the immune system and propagating infections whether singularly or in concert.
A12 outline the principles and fundamentals of ethics and legal aspects of professional practice in the field of microbiology & immunology.
A13 Identify the principles and fundamentals of quality in professional practice in the field of microbiology & immunology.
A14 Identify the basics and ethics of scientific research.
A15 Identify the recent methods in data collection and analysis.

A16 Explain the basics of the compulsory course related to the program (Applied and clinical Epidemiology).

B- Intellectual skills

By the end of the course the candidate must have the ability to:

B1 Appraise and interpret the basic structure and function of different microbes.
B2 Outline the pathogenesis, laboratory diagnosis and management of each group of infectants (bacteria, viruses and fungi).
B3 Demonstrate the role of the immune system in health and disease.
B4 Appraise and interpret the role of infection control practices in limiting nosocomial infections and propagation of sound health standards
B5 Correlate given data and use it in problem solving.
B6 Solve problems using self-learning skills.
B7 Plan for a research or scientific study on a research problem.
B8 Formulate analytical skills in anticipating risks and risk assessment.
B9 Plan for the development of performance in the field of microbiology & immunology
B10 Solve problems in the field of microbiology & immunology, and find their solutions
B11 Evaluate published papers and scientific material related to microbiology & immunology.
B12 Appraise and interpret the basics of the course related to the program (Applied and clinical epidemiology)

C- Professional and practical skills

By the end of the course the candidate should be able to:

C1 Demonstrate competency the basic and modern professional skills in the area of microbiology & immunology
C2 Write and evaluate professionally medical reports.
C3 Practice efficiently methods and tools existing in the area of microbiology & immunology.
C4 Design and manage epidemiological issues.

D- General and transferable skills

By the end of the course the candidate should be able to:

D1 Communicate effectively in different ways.
D2 Use information technology to serve the development of professional practice
D3 Assess himself and identify personal learning needs.
D4 Use different sources to obtain information and knowledge.
D5 Develop rules and indicators for assessing the performance of others.
D6 Work in a team, and team's leadership in various professional contexts.
D7 Manage time efficiently.
D8 develop plans for continuous learning

3- Program Academic Reference standards (ARS):

Minia faculty of medicine adopted the general national academic reference standards provided by the national authority for quality assurance and accreditation of education (NAQAAE) for all postgraduate programs (Faculty Council Decree No.6854, in its cession No.177 Dated: 18\5\2009). **{Annex I}.**

Faculty of medicine, Minia University has developed the academic standards (ARS) for Master(MSc) and approved in faculty Council decree No.7528, in its cession No.191, dated: 15\3\2010) and these standards (faculty ARS) have been updated and approved in faculty Council No.52/2 dated: 20/ 2 / 2023 **{Annex II}**

Then, in view of the adopted general standards, **Medical Microbiology and Immunolgy department** has developed the Intended learning outcomes (ILOs) for **Master (MSc) program in Medical Microbiology and Immunology** and the date of program specifications 1st approval was by department council: 13-5-2013, last update of program specification approval by department council: 6-3-2023

4- Program External References:

Not avaialable

5- Program Structure and Contents:

5.A. Program duration: 2 years

5.B. Program structure:

- No of hours/week: 40 weeks
  - Lecture: 2-4 hrs/w
  - Practical: 1-4 hrs /w
  - Total hours/week:.2-8 hrs/w
  - Total program hours : 240 hrs
- Basic sciences (compulsory) courses: No : 1 Percentage %: 20
- Specific courses related to the specialty: No:1 Percentage %:80

- Research based thesis
- Training programs and workshop, seminars & other scientific activities: Distributed along the whole program.

5.C. Levels of program in credit hours system:

- Not applicable
-

5.D. Program courses:

Two course compulsory **{Annex III}.** To ensure complete coverage of all program ILOs by courses, a correlation between them has been done**{Annex IV}.**

Course Title	Total No. of	No. of hours /week			Program ILOs Covered
		Lect.	Lab.	tutorial	
FIRST PART (Level of course): (1year)					
Applied and clinical epidemiology	2-3	2	1	….	**A2 A15A16 B5 B6 B12 C4 D1D3**
Scientific activities and Training Programs	Continuous				**C4 D1 D2 D4**
SECOND PART (Level of course): (1 year)					
2.Medical Microbiology and Immunology (General & applied microbiology; compulsory)	8	4	2	2	**A1-A15 B1-B11 C1-C3 D1-D8**
Scientific activities and Training Programs	Continuous				**C1-C3 D1-D8**
Thesis (Research): completed during second part					
The candidate should prepare a research based thesis. Department Council must approve the protocol of the research. The thesis is supervised by two or more senior staff members and may include other specialties according to the nature of the research.	**Continuous**				**A6 A9 A14 A15 B5 B6 B7 C1 C3 D1 D2 D4 D7**

6- Program admission requirements

Registration for the master programs is allowed in September each year

General Requirement

1. Candidates should have either:
   a. MBBCh Degree from any Egyptian Faculties of Medicine, or
   b. Equivalent Degree from Medical Schools abroad approved by the Ministry of Higher Education.
2. Follow postgraduate regulatory rules of Minia University, Faculty of Medicine.

Specific Requirements:

1. Candidates graduated from Egyptian Universities should have at least "Good Rank" in their final/cumulative year(s) examination, and grade "Good Rank" in Microbiology and Immunology
2. Candidate should know how to speak & write English well.
3. Candidate should have computer skills.

7- Regulations for progression and program completion

Duration of program is at least 2 years; consisting of two parts each of them is one year including Thesis preparation.

First Part: (1 year):

- Program related basic science (Applied and Clinical Epidemiology).
- The candidate can enter examination in the 1st part after 1 year of registration.
- Exam is held in in October.
- For the student to pass the first part exam, a score of at least 60% is needed (at least 40% of the written exam).

Thesis:

- Starts after at least 6 ms from registration and should be completed, defended and accepted at least after passing 6 months from documentation, and after passing the 1st part examination and at least one month before allowing to enter 2nd part final examination .
- The thesis should be evaluated and approved by a committee of three professors including one of the supervisors, an internal professor and an external professor. Accepting the thesis is enough to pass this part.

Second Part: (1 year):

- Program related specialized science of Medical Microbiology & Immunology.
- The student should pass the 1st part and the thesis is accepted before asking for examination in the 2nd part
- Fulfillment of the requirements in each course as described in the template and registered in the log book is a prerequisite for candidates to be assessed and undertake part 1 and part 2 examinations; as follows:

Grand rounds	اجتماع علمى موسع
Training courses	دورات تدريبية
Conference attendance	حضور مؤتمرات علمية
Thesis discussion	حضور مناقشات رسائل
Workshops	حضور ورش عمل
Journal club	ندوة الدوريات الحديثة
Case presentation	تقييم حالة مرضية
Seminars	لقاء علمى موسع
Morbidity and Mortality conference	ندوة تحليل المخاطر المرضية أوالوفاة
Self-education program	برنامج التعليم الذاتى

8. Methods of teaching:

Teaching and learning methods	The assessed ILOs
• **Lectures**	**a.** Knowledge & understanding, **b.** Intellectual skills
• **Practical sessions**	c-Professional & practical skills
• **Self-training activities** • **seminars, presentations and assignments.** • **Training courses & workshops.** • **Conference attendance**	**d.** General & transferable skills
• **Thesis discussion.**	**a.** Knowledge & understanding, **b.** Intellectual skills **c.** Practical skills **d.** General & transferable skills

9- Methods of student assessment:

Method of assessment	Method of assessment
1-Research (Thesis)	**a.** Knowledge & understanding, **b.** Intellectual skills **c.** Practical skills **d.** General & transferable skills
2-Written Exams: **a-Short essay** **b-Problem solving** **c- MCQ**	**a.** Knowledge & understanding **b.** Intellectual skills
3-Practical Exams	c-Professional & practical skills **d-General and transferable skills**
4- Oral Exams	**a.** knowledge & understanding **b.** Intellectual skills d- General and transferable skills
5. Log book	**a.** Knowledge & understanding **b.** Intellectual skills **c.** Professional & practical skills **d.** General & transferable skills

Weighing of assessment

It is mandatory to pass all the papers of written exams separately

Course	written	Oral	Practical	Total
Applied and clinical epidemiology	120 marks	90 marks	90 marks	300 marks
Microbiology and Immunology	1st paper: 140 marks 2nd paper: 140 marks	280 marks	210 marks	700 marks

10- Evaluation of program intended learning outcomes:

Evaluator (By whom)	Method/tool	Sample
1. Senior students (Students of last year)	Questionnaires	50%
2. Graduates (Alumni)	Questionnaires	40%
3. Stakeholders	Meeting Questionnaires	20% 40%
4. External & Internal evaluators and external examiners	Reports	70%
Quality Assurance Unit	Reports Questionnaires Site visits	80%

Head of Department:
Dr. Wafaa Khairy Mohamed

Last date of program specifications approval: 3/2023

Annex (I)

مصفوفه توافق المعايير القوميية القياسيه العامه لبرامج الماجستير مع المعايير الأكاديميه المعتمده من كليه الطب / جامعة المنيا لدرجه الماجيستير فى الميكروبيولوجى والمناعة

Comparison between National Academic Quality Assurance and Accreditation general Academic Reference Standards and Faculty Academic Reference Standard

NAQAAE برامج الماجستير	Faculty Master (MSC) Program
١. مواصفات الخريج: خريج برنامج الماجستير في أي تخصص يجب أن يكون قادرا على:	**1. Graduate Attributes:** Graduate of master (MSC) program should be able to:
1.1. إجادة تطبيق أساسيات ومنهجيات البحث العلمي واستخدام أدواته المختلفة.	1.1. understanding and applying of basics of research method and research tools
2.1. تطبيق المنهج التحليلي واستخدامه في مجال التخصص	2.1. Critically analyze, evaluate, and effectively communicate findings, theories, and methods
3.1. تطبيق المعارف المتخصصة و دمجها مع المعارف ذات العلاقة في ممارسته المهنية.	3.1. Apply integrated professional and general knowledge in his scholarly field and at the interface between different fields.
4.1. إظهار وعيا بالمشاكل الجارية والرؤى الحديثة في مجال التخصص.	4.1. Demonstrate awareness of community health needs related to the field of specialization by understanding the beneficial interaction with the society to improve quality of life
5.1. تحديد المشكلات المهنية وإيجاد حلولا لها.	5.1. Demonstrating proficiency, required to solve current complex problems in his scholarly field.
6.1. إتقان نطاق مناسب من المهارات المهنية المتخصصة واستخدام الوسائل التكنولوجية المناسبة بما يخدم ممارسته المهنية.	6.1. Master a variety of technical skills in his scholarly field and expert relevant equipment, technology, and software.
7.1. لتواصل بفاعلية والقدرة على قيادة فرق العمل.	7.1. Gain leadership skills and be able to communicate efficiently with colleagues and get the best results.
8.1. اتخاذ القرار في سياقات مهنية مختلفة.	8.1. Take professional situational decisions and logically support them.
9.1. توظيف الموارد المتاحة بما يحقق أعلي استفادة و الحفاظ عليها	9.1.Optimal use of available resources to achieve research or best patient health care and ensure its maintenance.
10.1. إظهار الوعي بدوره في تنمية المجتمع والحفاظ على البيئة في ضوء المتغيرات.	10.1. Demonstrate awareness of its role in community health development and

11.1. التصرف بما يعكس الالتزام بالنزاهة والمصداقية والالتزام بقواعد المهنة.	11.1. Exhibit ethical behavior that reflect commitment to the code of practice
12.1. تنمية ذاته أكاديميا ومهنيا و قادرا علي التعلم المستمر.	12.1. demonstrate the ability to sustain a lifelong personal and professional growth.
٢.المعايير القياسية العامة: **NAQAAE General Academic Reference Standards "GARS" for Master Programs**	**2. Faculty Academic Reference Standards (ARS) for Master Program**
٢.١. المعرفة والفهم: بانتهاء دراسة برنامج الماجستير يجب أن يكون الخريج قادرا علي الفهم والدراية بكل من:	**2.1. Knowledge & Understanding:** Upon completion of **the Master Program in**……., the graduate should have sufficient knowledge and understanding of:
٢.١.١. النظريات والأساسيات والحديث من المعارف في مجال التخصص والمجالات ذات العلاقة	2.1.1. Understand the scientific basis and modern knowledge in the field of specialization and related medical sciences
٢.١.٢. التأثير المتبادل بين الممارسة المهنية وانعكاسها علي البيئة	2.1.2. The mutual influence of professional practice on work environment, working conditions, and job characteristics.
٢.١.٣. التطورات العلمية في مجال التخصص	2.1.3. Scientific developments in the field of specialization
٢.١.٤. المبادئ الأخلاقية والقانونية للممارسة المهنية في مجال التخصص	2.1.4. Recognize basics of medico-legal aspects of practice, malpractice and avoid common medical errors
٢.١.٥. مبادئ وأساسيات الجودة في الممارسة المهنية في مجال التخصص	2.1.5. Quality principles in the scholarly field
٢.١.٦. أساسيات وأخلاقيات البحث العلمي	2.1.6. Basis of research methodology and medical ethics.
2.2.المهارات الذهنية: بانتهاء دراسة برنامج الماجستير يجب أن يكون الخريج قادرا على:	**2.2. Intellectual Skills:** Upon completion of the master program of……, the graduate should be able to:
2.2.1. تحليل وتقييم المعلومات في مجال التخصص والقياس عليها لحل المشاكل	2.2.1. Use judgment skills for analytical and critical problem solving
2.2.2. حل المشاكل المتخصصة مع عدم توافر بعض المعطيات	2.2.2. Capable of integrating knowledge and dealing with complex subjects to solve problems
2.2.3 الربط بين المعارف المختلفة لحل المشاكل المهنية	2.2.3. Be capable of integrating research results and/or results of history, physical and laboratory test findings to solve a research or a clinical problem.
2.2.4. إجراء دراسة بحثية و/أو كتابة دراسة علمية منهجية حول مشكلة بحثية	2.2.4. Effectively apply research methods and carrying out a medical research thesis
2.2.5. تقييم المخاطر في الممارسات المهنية في مجال التخصص	2.2.5. Be aware of risk management principles, and patient safety.
2.2.6. التخطيط لتطوير الأداء في مجال التخصص	2.2.6. Establish goals, commitments, and strategies for improved professional

	performance in the field of specialty
2.2.7. اتخاذ القرارات المهنية في سياقات مهنية متنوعة.	2.2.7. Take professional situational decisions and logically support them.
3.2.المهارات المهنية: بانتهاء دراسة برنامج الماجستير يجب أن يكون الخريج قادرا على:	**3.2. Professional Skills:** Upon completion of the master program of……, the graduate must be able to:
3.2.1. إتقان المهارات المهنية الأساسية والحديثة في مجال التخصص.	3.2.1. Master the basic and some advanced professional skills in his scholarly field.
٣.٢.٢كتابة و تقييم التقارير المهني.	3.2.2. Write and evaluate medical or scientific reports
٢.٣.٣تقييم الطرق والأدوات القائمة في مجال التخصص	3.2.3. Assess and evaluate technical tools during research
4.2.المهارات العامة والمنتقلة : بانتهاء دراسة برنامج الماجستير يجب أن يكون الخريج قادرا على:	4.2. **General and transferable skills** Upon completion of the master program of……, the graduate should be able to:
٤.٢.١. التواصل الفعال بأنواعه المختلفة	4.2.1. Communicate effectively using a written medical record, electronic medical record, or other digital technology.
٤.٢.٢. استخدام تكنولوجيا المعلومات بما يخدم الممارسة المهنية	4.2.2. Use of information technology (computer to create, process, store, secure and exchange electronic data) in the field of medical practice.
4.2.**3**. لتقييم الذاتي وتحديد احتياجاته التعلمية الشخصية	4.2.3. Assess himself and identify personal learning needs
4.2.**4**. استخدام المصادر المختلفة للحصول على المعلومات والمعارف	4.2.4. Use various sources for information (physical and digital sources).
4.3.**5**. وضع قواعد ومؤشرات تقييم أداء الآخرين	4.2.5. Setting indicators for evaluating the performance of others
4.2.**6**. العمل في فريق، وقيادة فرق في سياقات مهنية مختلفة	4.2.6. Work in a team, and Apply leadership skills to enhance team functioning, the learning environment, and/or the health care delivery system
4.2.**7**. إدارة الوقت بكفاءة	4.2.7. Manage time efficiently
٤.٢.٨.التعلم الذاتي والمستمر	4.2.8. Demonstrate skills of self-learning and lifelong learning needs of medical profession.

Annex (II)

Comparison between Faculty ARS and Program ILOs

Faculty ARS	Program ILOs
1-Knowledge and understanding: Upon completion of **the Master Program** the graduate should have sufficient knowledge and understanding of: 2.1.1. Understand the scientific basis and modern knowledge in the field of specialization and related medical sciences 2.1.2. The mutual influence of professional practice on work environment, working conditions, and job characteristics. 2.1.3. Scientific developments in the field of specialization 2.1.4. Recognize basics of medico-legal aspects of practice, malpractice and avoid common medical errors 2.1.5. Quality principles in the scholarly field 2.1.6. Basis of research methodology and medical ethics.	***1-Knowledge and understanding:*** *By the end of the study of master programme in Microbiology and Immunology the graduate is expected to be able to:* A1 Identify the microbes affecting human beings all over the world including bacteria, viruses and fungi. A2 Explain the geographical distribution and impact of each microbe in health and disease. A3 Recognize the pathogenesis, clinical symptoms and complications of each microbe. A4 outline the laboratory tests needed for diagnosis of each case. A5 Identify the antibiotics and instructions used for treating each case, especially as regards drug complications and interactions. A6 Recognize the basics of infection control measures, and their ever-increasing role in disease prevention A7 Identify the basics of the immune system, and the role it plays in health and disease. A8 Identify bacterial genetics and its implications with human genetics. A9 Recognize the role of molecular genetics and molecular biology applications in general. A10 Explain the scientific developments in the field of microbiology & immunology A11 Identify the role of the environment in affecting the immune system and propagating infections whether singularly or in concert. A12 outline the principles and fundamentals of ethics and legal aspects of professional practice in the field of microbiology & immunology. A13 Identify the principles and fundamentals of quality in professional practice in the field of microbiology & immunology. A14 Identify the basics and ethics of scientific research. A15 Identify the recent methods in data collection and analysis. A16 Explain the basics of the compulsory course related to the program (Applied and clinical Epidemiology).

2. Intellectual skills: Upon completion of the master program the graduate should be able to :2.2.1. Use judgment skills for analytical and critical problem solving 2.2.2. Capable of integrating knowledge and dealing with complex subjects to solve problems 2.2.3. Be capable of integrating research results and/or results of history, physical and laboratory test findings to solve a research or a clinical problem. 2.2.4. Effectively apply research methods and carrying out a medical research thesis 2.2.5. Be aware of risk management principles, and patient safety. 2.2.6. Establish goals, commitments, and strategies for improved professional performance in the field of specialty	***2. Intellectual skills:*** *Upon completion of the master degree program of Microbiology and Immunology, the graduate must be able to do the following.* B1 Appraise and interpret the basic structure and function of different microbes. B2 Understand the pathogenesis, laboratory diagnosis and management of each group of infectants (bacteria, viruses and fungi). B3 Understand the role of the immune system in health and disease. B4 Appraise and interpret the role of infection control practices in limiting nosocomial infections and propagation of sound health standards B5 Correlate given data and use it in problem solving. B6 Solve problems using self-learning skills. B7 Plan for a research or scientific study on a research problem. B8 Formulate analytical skills in anticipating risks and risk assessment. B9 Plan for the development of performance in the field of microbiology & immunology B10 Solve problems in the field of microbiology & immunology, and find their solutions B11 Evaluate published papers and scientific material related to microbiology & immunology. B12 Appraise and interpret the basics of the course related to the program (Applied and clinical epidemiology)
3- Professional and Practical Skills *By the end of the study of master degree program the graduate is expected to be able to:* 3.2.1. Master the basic and some advanced professional skills in his scholarly field. 3.2.2. Write and evaluate medical or scientific reports 3.2.3. Assess and evaluate technical tools during research	**3- Professional and Practical Skills** *By the end of the study of master degree program in Microbiology and Immunology the graduate is expected to be able to:* C1 Demonstrate competency the basic and modern professional skills in the area of microbiology & immunology C2 Write and evaluate professionally medical reports. C3 Practice efficiently methods and tools existing in the area of microbiology & immunology. C4 Design and manage epidemiological issues.

4. General and transferable skills: *Upon completion of the master degree program, the graduate must be able to do the following:* 4.2.1. Communicate effectively using a written medical record, electronic medical record, or other digital technology. 4.2.2. Use of information technology (computer to create, process, store, secure and exchange electronic data) in the field of medical practice. 4.2.3. Assess himself and identify personal learning needs 4.2.4. Use various sources for information (physical and digital sources). 4.2.5. Setting indicators for evaluating the performance of others 4.2.6. Work in a team, and Apply leadership skills to enhance team functioning, the learning environment, and/or the health care delivery system 4.2.7. Manage time efficiently 4.2.8. Demonstrate skills of self-learning and lifelong learning needs of medical profession.	**4- General and Transferable Skills** *By the end of the study of master degree program in Microbiology and Immunology, the Graduate is expected to be able to:* D1 Communicate effectively in different ways. D2 Use information technology to serve the development of professional practice D3 Assess himself and identify personal learning needs. D4 Use different sources to obtain information and knowledge. D5 Develop rules and indicators for assessing the performance of others. D6 Work in a team, and team's leadership in various professional contexts. D7 Manage time efficiently. D8 Educate himself continuously

Annex (III)

Course Specifications of:

"Applied and Clinical epidemiology *for candidates of Master degree in Medical Microbiology and Immunology"*

(2023)

University: Minia University

Faculty: Faculty of Medicine

Department offering the course: Public Health and Community Medicine department.

Course Specifications

It is a part of Postgraduate (MSC) Programme for Microbiology Department.

Programme(s) on which the course is given: First part MSC of Microbiology

Major or minor element of programmes: Applied and clinical epidemiology

1- Basic Course Information		
Academic Year/ level: First Part MSC , Microbiology	**Course title:** Applied and Clinical epidemiology	**Code:** **MB200**
Number of teaching hours: **-Lectures :**30 hours 2 -3 h / week **Practical/clinical:** 10 hours **Total:** 40 hours		
2-Overall Aims of the course		
By the end of the course the student must be able to: 1. *Develop a postgraduate student who will be able to take leadership in the field of epidemiology by applying the scientific knowledge and skills learned (etiology and risk factors of diseases)* 2. *Generate an new minds which knowing the importance of preventing diseases and injuries, promotion of well being and*		

maintaining good physical , reducing morbidity and mortality from diseases

3. *Participate with different sectors of the community in combating the health challenges in our community.*
4. *Develop arational basis for prevention programs based on identified etiologic or causal factors*

3- **Intended learning outcomes of course (ILOs)**

Upon completion of the course , the candidate should be able to :

A-Knowledge and understanding

A1 Define: health, health dimensions, epidemiology, patterns of disease spread, levels of prevention and health promotion, natural history of diseases and spectrum of health

A2. Illustrate a knowledge base in, communicable, non-communicable diseases epidemiology, and environmental health.

A3. Recognize the basics of disease prevention, role of vaccines in preventing diseases

A4. Describe the requirement for prevention and treatment of disease.

A.5. Describe epidemiology of COVID-19 virus and identify Strategies to Reduce Spread of Covid-19

A.6. Describe basic steps of COVID-19 case investigation

A.7 Identify pattern of disease occurrence, infectious cycle, preventive and control measures, immunization, surveillance system, investigation of an epidemic and nosocomial infection.

A.8 Describe the difference between descriptive and analytical epidemiology

A.9 Identify different study designs

A.10 Define health indicators and screening

B-Intellectual Skills

B1- Criticize prevention and control programs of diseases

B2- Reframe the community toward evidence based medicine

B.3. Able to provide nutritional advise and protocol for patients infected with COVID-19

B.4 Characterize persons at greatest risk for diseases

B.5 Select appropriate research methods.

C-Professional and practical skills

C1. Develop disease surveillance

C2. Illustrate early detection and early warning of communicable and non-communicable diseases according to protocol)

C3.Put guidelines in the prevention of communicable diseases

C4. Collaborate in campaigns and control activities/mass treatments as required

C5. Design an epidemiological study for an investigation of an epidemic/outbreak

C6. Evaluation of public health services

C7. Connect effectively with clients, colleagues from other specialties.

C8. Articulate in health promotion

C.9. Draw chart describing the for surveillance procedure of COVID-19 virus infection

C 10 Anticipate and participate in investigation of an epidemic /outbreak as part of a health team and design an epidemiologic study to address a question of interest

C.11 Calculate rates , ratios , proportions , sensitivity , specificity of screening tests

D- General and transferrable Skills

D1. Criticize indicators of health and disease

D2. Identify prevalent health problems in a community, using various epidemiological strategies

D3. Articulate in investigation of an epidemic/outbreak as part of a health team

D4. Identify trends in health and disease

D5. Use appropriate health promotion, disease prevention, and control measures

D6. Take part in conducting public health surveillance.

D 7. Use appropriate health education methods and materials

D 8. Teach effectively in the health care environment

D 9. Develop appropriately the health care setting

D 10. Modify the community toward improved health

D 11 Apply epidemiologic skills in a public health setting, specifically in the formulation or application of public health programs or policies

D 12 Develop recommend and safety of injury prevention measures

4-Course content			
	No. Of hours	Lecture	Practical
1-Concept of Health and disease		2	1
2-Epidemiological Cycle		2	1
3-Pattern of Spread of diseases		2	
4-Zoonotic Diseases		2	
5-Levels of Prevention and control of Infectious Diseases		2	1
6-Public Health Surveillance , survey		2	1
7-Investigation of an Outbreak		2	1
8-Hospital Acquired Infection		2	1
9-Vaccine preventable diseases		2	1
10-Epidemiology of non communicable diseases		2	
11-Emerging and tropical diseases		2	
12-Environmental Health hazards.		2	
13-Different epidemiological studies, their designs		2	1
14-Health indicators, rates, ratios, proportions		2	1
15-Screening		2	1
	40	30	10

5-Teaching and learning methods

5.1- Lectures: Face to face lectures, Pre-recorded video lectures
5.2- Practical lessons
5.3- Assignment
5.4- Online quizzes

6- Student assessment methods

6.1- **Research assignment:** to assess general transferable skills, intellectual skills.
6.2- **Written exams :**
Short essay : to assess knowledge
Commentary : to assess intellectual skills

6-3- **Practical Exams:** to assess practical and intellectual skills

6.4- Oral Exams : to assess knowledge , understanding , attitude and communication

6-Weighting of assessments (after 24 weeks)

Writing examination	120 marks 40%
Oral examination:	90 marks 30%
Practical exam	90 marks 30%
Total	100% (300 marks)

7- List of references

6.1- Course notes: - Department Books, and notes.
-Logbook

6.2- Essential books (text books)

1-Maxy-Rosenau Public health and preventive medicine, Prentice – Hall International Inc.

Recommended text books

1- Dimensions of Community Health, Boston Burr Ridge Dubuque.10
2- Short Textbook of preventive and social Medicine. Prentice-Hall International Inc.
3- Epidemiology in medical practice, 5th edition. Churchill Livingstone. New York, London and Tokyo

6.3- Periodicals:

1-American Journal of Epidemiology
2-International Journal of Epidemiology
3-International Journal of Public Health
4-Egyptian Journal of Community Medicine
5-British Journal of Epidemiology and Community Health
6-WWW. CDC and WHO sites

7- Facilities required for teaching and learning

1. Public Health and Community Medicine skill laboratory equipped with skill tools.
2. Class rooms for theoretical lectures and tutorials.

Course coordinator:
Lecturers / Shaimma Mahmoud , Chrestina Monir

Head of Department:

Professor Dr. / Nashwa Nabil Kamal

Date of program specification 1st approval by department council and date of last update: 6/3/2023

نموذج ١١

مسمى المقرر	**Applied and clinical epidemiology** for **1st part Medical Microbiology and Immunology MSC** degree
كود المقرر	MB200

جامعة/أكاديمية : المنيا
كلية / معهد: الطب
قسم: الصحة العامة والطب الوقائي

Matrix of Coverage of Course ILOs By Contents

Contents (List of course topics)	Intended Learning Outcomes (ILOs)			
	A. Knowledge & Understanding	B. Intellectual Skills	C. Professional & Practical skills	D. General & Transferable Skills
	A	B	C	D
1- Concept of health and disease	A1	B4	C7,C10	D1,D7,D4
2-Epidemiological Cycle	A7		C5	
3-Pattern of spread of disease	A1			D2,D4,D10
4-Zoonotic diseases	A2			
5-Levels of Prevention and control of infectious diseases	A1,A3,A4,	B1,B2,B4	C2,C3	D5
6-Public health surveillance	A7	B2	C1,C9	D6
7-Investigations of outbreak	A7,A4	B2	C5,C7,C10	D3
8-Hospital acquired infections	A7	B1	C6	
9-Vaccines preventable diseases	A3,A4	B1		
10-Epidemiology of non comunicable diseases	A2	B1,B4	C2 ,C8	D7
11-Emerging and tropical diseases	A5,A6	B1 ,B3	C3 ,C4 ,C9,C10	
12-Environmental health hazards	A2		C6	D8,D9,D11,D12
13-Different epidemiological studies , designs	A8, A9	B5		
14-Health indicators , rates ,	A10		C11	

ratios , proportions				
15-Screening	**A10**		**C11 , C7,C8**	

Matrix of Coverage of Course ILOs by Methods of Teaching & Learning

Methods of Teaching & Learning	**Intended Learning Outcomes (ILOs)**			
	A. Knowledge & Understanding	**B. Intellectual Skills**	**C. Professional & Practical skills**	**D. General & Transferable Skills**
	A	**B**	**C**	**D**
Lecture	**A1,A2,A3,A4,A5,A6,A7,A8,A9, A10,A11**	**B1,B2, B3,B4,B5**		
Practical			**C1,C2,C3,C4,C5,C11,C10**	**D1**
Assignment	**A1, A5**	**B1**	**C9,C10**	**D2,D4,D2**

Matrix of Coverage of Course ILOs by Methods of Assessment

Methods of Assessment	**Intended Learning Outcomes (ILOs)**			
	A. Knowledge & Understanding	**B. Intellectual Skills**	**C. Professional & Practical skills**	**D. General & Transferable Skills**
	A	**B**	**C**	**D**
Written exam	**A1,A2,A3,A4,A5, A6,A7,A8,A9,A11**	**B1,B2, B3**		
Oral Exam	**A4,A7**	**B1,B3**		**D1,D2,D4,**
Practical Exam			**C9,C5**	

Course Specification for 2nd part of Master degree of Medical Microbiology and Immunology(Advanced)

1. Course Information		
Academic Year/level: postgraduate students	*Course Title: Medical Microbiology and Immunology course for 2nd part of Medical Microbiology and Immunology postgraduate master students.*	**Code**: **MB200**
Number of teaching hours: - **Lectures: Total of 100 hours; 4 hours/week** - **Practical/clinical: Total of 10 0 hours 4hours / week**		
2.Overall Aims of the course	By the end of the course the student must be able to: 1. Recognize the different types of pathogens, their structure, genetics, pathogenesis and spectrum of diseases. 2. Identify the different methods for laboratory diagnosis and control of different infectious agents. 3. Apply the different molecular microbiological techniques and their applications. 4. Know the basics of the host-parasite relationships and the role of the immune system in defending the body against different pathogens and its role in health and disease. 5. Know the principles of biosafety measures and aseptic precautions.	

A-Knowledge and Understanding	B-Intellectual Skills	C-Professional and Practical Skills	D-General and transferable Skills
A1 Recognize the taxonomy and classification of different microorganisms. **A2 Identify microbial morphology, structure, metabolism and physiology of different mocrorganisms** **A3- Recognize the basics of microbial genetics and biotechnology techniques and their applications.** **A4 Identify the natural habitat, source of infection and mode of transmission of the different classes of pathogens.** **A5 list different mechanisms of Microbial Pathogenicity and Microbial Virulence factors** **A6- Mention the different laboratory methods for identification of different infectious agents** **A7- Recognize antimicrobial polices regarding mechanisms of action and resistance including underling genetic mechanisms** **A8 Mention the ethical and scientific principles of medical research**	**B1-Correlates the facts of relevant basic and clinically supportive sciences with conditions and diseases of relevance to genetics, application of antimicrobial stewardship in medicine** **B2- Demonstrate an investigatory and analytic thinking (problem solving) approaches to conditions relevance to identification of bacteria, application of antimicrobial stewardship in medicine and multidrug resistant bacteria.** **B3 Formulate management plans and alternative decisions in different situations in the field of identification of bacteria and antimicrobial resistance.**	**C1.apply the standard protocol in collection of pathological samples including aseptic techniques, proper handling and processing of pathological specimens** **C2- Develop skills to perform basic laboratory techniques required for identification of different microbes including use of microscopes, cultivation methods biochemical testing and preservation of pathogenic strains** **C3- Apply methods of Sterilization and disinfection in microbiology laboratory.** **C4 perform different methods of antimicrobial susceptibility testing** **C5 develop skills to perform molecular techniques including DNA Sequencing, Hybridization techniques, Amplification techniques, Nucleic acid extraction, Gel Electrophoresis, Recombinant DNA Technology and Genotyping techniques**	**D1 Design and present audits, cases, seminars in common problems related to identification of Microorganisms, Microbial genetics and antimicrobial stewardships.** **D2 Manage a Microbiology laboratory** **D3 Write reports for diagnosis of infectious diseases** **D4 Appraises evidence from scientific studies.** **D5 participate in one audit or survey related to the multidrug resistant organisms causing health care associated infections.** **D6 Perform data management including data entry and analysis.** **D 7 Facilitate learning of junior students and other health care professionals about identification of bacteria and molecular methods for detection, antimicrobial stewardship and patient safety.** **D8 Work in/with different groups.**

A9 Recognize the natural barriers for infection including their composition, mechanisms and thier role in health and disease. **A10 list types of antigens** **A11- Identify different components of the immune system including innate and adaptive immune sysytems, cytokines and complement sysytem .** **A12- Describe origin of immune cells, their development and maturation.** **A13 List in details role of immune system in health and disease regarding their role in combating pathogenic organisms.** **A14 Describe clinincal applications of immune system in Tumors.** **A15 list in details clinical drawbacks of immune system malfunction including autoimmune diseases, Hypersensitivity Reactions and immunedeficiency** **A16 Identify role of immune system in Organ Transplantaion** **A17- Mention methods for assessment of the immune response.** **A18- Name the different methods of immunomodulation and their applications.** **A19 Recognize differnet vaccine stratigies, development and uses.**	**B4-Correlates the facts of relevant basic and clinically supportive sciences with conditions and diseases of relevance to Immune system.** **B5- Demonstrate an investigatory and analytic thinking (problem solving) approaches to conditions related to autoimmune diseases, Hypersensitivity Reactions and immunedeficiency disorders.** **B6 Formulate management plans and alternative decisions in different situations in the field of immunology**	**C6 Develop skills different techniques used in immunodiagnostic application including basic serological techniques and immunofluorescence techniques, Enzyme immunoassay and radioimmunoassay** **C7 interpret results of immunodiagnostic techniques** **C8 Develop skills to perform techniques used to assess immune system components as flow cytometry** **C9 Use information technology to support decisions in common situations related to Immunology.** **C10 apply Standard protocol in collection of samples for serological testing** **C11 manipulation of different devices used in the field of immunological techniques** **C12 Apply standard protocol in vaccine handling and processing**	**D9 Design and present audits, cases, seminars in common problems related to immunology field** **D10 Share in vaccination education in the community** **D11 Write reports for diagnosis of immunological diseases** **D12 participate in one audit or survey related to immunological diseases** **D13 Perform data management including data entry and analysis for immunodiagnostics.** **D 14 Facilitate learning of junior students and other health care professionals about role of immune system in health and disease** **D15 Work in a research team**

A20- Memories different causative microorganisms including Bacteria, viruses and fungi responsible for different clinical conditions. **A21. List structure, pathogenesis, reproduction strategies for each microorganism** **A22 Describe infectious cycle, pathogenicity and spectrum of diseases in each Microorganism** **A23 Describe specialized laboratory diagnostic algorism and tests for each infection** **A24 List treatment polices specialized for each organism** **A25 mention different prophylaxis strategies for each Microorganism** **A26 identify nosocomial infections, their health problems and proper Management** **A27 list standards of infection control in the medical field** **A28 Demonstrate occupational safety programs for Health care personnel**	**B7 analyze clinical cases of infection to reach a provisional diagnosis** **B8 Formulate a differential diagnosis in management of clinical cases** **B9 Correlate clinical and laboratory data for problem solving cases related to infections** **B10 formulate proper management plan for a nosocomial infection** **B11 Choose proper infection control standards to prevent each type of infection**	**C13 Use the best method for sample collection according to type of the clinical condition** **C14 perform the suitable protocol for diagnosis of each infectious disease** **C15 Perform laboratory techniques for diagnosis of bacteria as staining, cultivation in culture media, biochemical testing, serology and molecular diagnosis** **C16 Perform laboratory techniques for diagnosis of Viruses as Microscopic examination, cultivation, serology and molecular diagnosis.** **C17 Perform laboratory techniques for diagnosis of Fungi as staining, cultivation in culture media, biochemical testing, serology and molecular diagnosis** **C18 Develop skills to implement infection control standards**	**D16 Design and present audits, cases, seminars in common problems related to different infections** **D17 Share in Infection control education in the medical field** **D18 Write reports for diagnosis of infectious diseases** **D19 participate in one audit or survey related to outbreaks of infectious mocroorganisms** **D20 Perform data management including data entry and analysis for Diagnosis of infectious diseases.** **D21 Work in a medical team.** **D22. Write protocols for diagnosis of each clinical condition** **D23. Communicate with colleagues and patients regarding a case caused by a microorganism.**

4.Course Contents			
Topic	**No. of hours**	**Lectures**	**Tutorial/Practical**
General Bacteriology	16	8	8
Bacterial Genetics	8	4	4
Basic Immunology	20	10	10
Applied Immunology	16	8	8
Systemic Bacteriology	48	24	24
General Virology	4	2	2
Systemic Virology	40	20	20
Mycology	16	8	8
Molecular Biology	16	8	8
Infection Control	16	8	8
Total	200	100	100
5.Teaching and Learning Methods	Lectures Practical sessions Seminars and Group discussion		
6.Teaching and Learning Methods for students with limited Capacity	Online lectures and tutorials		
7.**Student Assessment**			
A.Student Assessment Methods	**End of course written exam:** A paper based exam **to assess** the student's comprehension and understanding of the class work *(2 papers each one is 3 hours on 2 separate days)* **Oral exam:** to assess student's intellectual and communication abilities regarding basic knowledge and understanding of the course topics. **Practical exam:** objective structured practical examination to assess student professional and practical skills		
B.Assessment Schedule (Timing of Each Method of Assessment)	End of course exam (written, oral and practical exams) **Week** 23		
C.Weighting of Each Method of Assessment	Final written Examination: 280 marks (40%) Oral Examination: 210 marks (30%) Practical exam: 210 marks (30 %) Total 700 marks (100%)		
8.List of References			
A. Course Notes/handouts	Department Books, and notes on Medical Microbiology and Immunology by microbiology department, Faculty of medicine, Minia university		
B. Essential Books	Jawetz, Melnick and Adelberg's Medical Microbiology 27th edition by Riedel. S (2019);		

	McGraw-Hill Education Review of Medical Microbiology and Immunology 17th edition by warren levinson (2022); McGraw-Hill Education
C. Recommended Text Books	Janeway's Immunobiology 9th edition by Kenneth Murphy and Casey Weaver, (2016); Garland Publishing Inc. NY, London.
D. Periodicals, websites	TBD and updated during the course work
Course Coordinator: Dr. Dalia Nabil **Head of Department : Prof. Dr. Wafaa Khairy** Date of last update: 3/ 2023	

نموذج (١١)

جامعة : المنيا
كلية الطب البشري
قسم الميكروبيوجيا الطبية والمناعة

Systemic Medical Microbiology and Immunology Master	**مسمى المقرر**
MB200	**كود البرنامج**

Matrix of Coverage of Course ILOs by Contents

A. Matrix between ILOs and course topics				
Contents (List of course topics)	**Intended Learning Outcomes (ILOs)**			
	A. Knowledge & Understanding	**B. Intellectual Skills**	**C. Professional & Practical skills**	**D. General & Transferable Skills**
	A	**B**	**C**	**D**
General Bacteriology	**A1 –A8**	**B1 B2 B3**	**C1-C5**	**D1-D8**
Bacterial Genetics	**AA3A7**	**B1**	**C5**	**D1 D4 D6**
Basic Immunology	**A9A10A11A12**	**B4**	**C7 C8 C9**	**D9 D10 D11 D12**
Applied Immunology	**A13-A19**	**B5,B6**	**C10 C11 C12**	**D13 D14 D15**
Systemic Bacteriology	**A20-A25**	**B7-B11**	**C13-C18**	**D16-D23**
General Virology	**A1A4A6**	**B1 B2 B3**	**C1 C5**	**D1 D3 D7**
Systemic Virology	**A20-A25**	**B7-B11**	**C13- C18**	**D16-D23**
Mycology	**A20-A25**	**B7-B11**	**C1 C4**	**D16-D23**
Molecular Biology	**A3A7A4**	**B3**	**C5**	**D3 D4 D5**
Infection Control	**A26 A27 A28**	**B10 B11**	**C18**	**D17**

B..Matrix of Coverage of Course ILOs by Methods of Teaching

Methods of Teaching & Learning	Intended Learning Outcomes (ILOs)			
	A. Knowledge Understanding	B. Intellectual Skills	C. Professional & Practical skills	D. General & Transferable Skills
	A	B	C	D
Lecture	A1-A28	B1 –B11		
Practical/ workshops			C1-C18	D1 D3 D4
Presentation/seminar / group discussion				D1 –D23

C. Matrix of Coverage of Course ILOs by Methods of Assessment

Methods of Assessment	Intended Learning Outcomes (ILOs)			
	A. Knowledge & Understanding	B. Intellectual Skills	C. Professional & Practical skills	D. General & Transferable Skills
	A	B	C	D
Written exam	A1-A28	B1 –B11		
Practical exam			C1 –C18	D3 D4
Oral Exam				D1-D23

Annex IV

Matrix of Coverage of Courses by Program ILOS				
Methods of Teaching & Learning	Program Intended Learning Outcomes (ILOs)			
	A. Knowledge Understanding	B. Intellectual Skills	C. Professional & Practical skills	D. General & Transferable Skills
	A	B	C	D
1. Applied and clinical Epidemiology	A16	B12	C4	D2 D6
2.. Medical Microbiology and Immunology	A1-A15	B1 –B11	C1 C2 C3	D1-D8
3- Thesis	A6 A9 A14 A15	B5 B6 B7	C1 C3	D1 D2 D4 D7