Doctorate (MD) Program & Course Specifications in Medical Parasitology
2022/2023

University: MINIA
Faculty(s): MEDICINE
Department: Medical Parasitology

A. Basic Information:

- **Program title:** Doctorate Degree (MD) in Medical Parasitology.
- **Code: PR 100**
- **Program type: Single** * Double ☐ Multiple ☐
- **Department responsible for offering the degree:** Medical Parasitology
- **Departments involved in the courses**: Public health and Preventive medicine department, Microbiology and Immunology department and Medical Parasitology department.
- Program duration : 3.5 years (minimum)
- Number of program courses: 4 courses

Coordinator: Dr. Manar Mostafa (**Lecturer of Medical Parasitology**)

Dr. Reham Ahmed (**Lecturer of Medical** of **Parasitology**)

- **External Evaluator(s):** Prof.Dr. Ahmed Kamal Dyab (Professor of Medical Parasitology, Faculty of Medicine, Assuit University.
- **Internal Evaluator: -**Prof. Rabie Mohamed Mohamed (Professor of Medical Parasitology, Faculty of Medicine, MinIa University).
- **Last date of program specifications update: Mach 2023**

B- Professional Information:

Program aims:

Graduate of Doctorate Degree in Medical Parasitology, the candidate should be able to:

1-Express an excellent level of medical knowledge and apply such knowledge in practical skills and scientific research.

2-Has a continuous ability to add knowledge new developments in Medical Parasitology through research and publication.
3- Utilize scientific knowledge to continuously update and improve practical skills to solve health problems related to Medical Parasitology.
4- Show an in-depth understanding of common areas/ problems and recent advances in the field of specialty, from basic clinical care to evidence based clinical application.
5- Use recent technologies in diagnosis in Medical Parasitology
6- Made a commitment for life-long learning and maintenance of competence and ability for continuous medical education and learning in subsequent stages and in the area of specialty or its subspecialties.

1. Intended Learning Outcomes (ILOs):

(A) *Knowledge and understanding:* Upon completion of the doctorate program (MD) in Medical Parasitology, the graduate should have must be able to:
A. 1. Discuss the basic and updated knowledge of Medical Parasitology, infectious diseases epidemiology, immunology, and molecular biology.
A.2. Define all aspects of medical research methodology and follow the ethics of medical research in Medical Parasitology.
A. 3. Mention the ethical and medicolegal principles which are relevant to Medical Parasitology practice
A. 4. List all steps of quality assurance and quality control in medical parasitology teaching and laboratory work.
A. 5. Outline the pattern of disease occurrence, infectious cycle, preventive and control measures, immunization, surveillance system, investigation of an epidemic and nosocomial infection.

(B) *Intellectual skills:* Upon completion of the doctorate program (MD) in Medical Parasitology, the graduate must be able to:
B. 1. Correlate data of relevant basic and other sciences.
B.2. Interpret available data for solving problems in Medical Parasitology
B.3. Plan a laboratory or field based research project.
B4. Write and publish scientific papers in Medical Parasitology.
B. 5. Assess the risk of major parasitic diseases to develop a control plan for each one.
B6. Categorize all hazards associated with laboratory activities.
B.7. Plan for performance improvement in the field of Medical Parasitology.
B.8. Make professional decision in various professional situations in Medical Parasitology.
B.9. Relate new species, new drugs and vaccines for parasitic diseases
B.10. Apply evidence-based strategies during lectures of Medical Parasitology.

(C) *Professional and practical skills:* Upon completion of the doctorate program (MD) in Medical Parasitology, the graduate must be able to:
C.1. Practice the basic and advanced molecular techniques as molecular amplification, sequencing methods and digital PCR.

C. 2. Interpret and evaluate medical parasitological reports.
C.3. Evaluate and estimate the laboratory tests available in the department lab.
C4. Reframe the available molecular tests.
C.5. Use digital technology in teaching Medical parasitology and in Medical Parasitology research
C.6. Plan for his professional development and assess the performance of his students and peer colleges.
C7. Evaluate the performance of the other students.

(D) ***General and transferable skills:*** Upon completion of the MD program in Medical Parasitology, the candidate should be able to do the following:

D1. Estimate, explain and interpret the competently information technology to improve the parasitological professional scientific practice.
D.2. Select which type of information technology suitable in the field of Medical Parasitology practice.
D.3. Determine and select the method used for evaluation.

D.4.Judge and mark the performance of the other students.
D.5. Discuss and appraise his personal learning needs.
D.6. Determine, evaluate and estimate all the available sources of information in the field of Medical Parasitology.
D.7. Interpret and prove the benefit of teamwork.

D.8. Support and award a leadership skill in the learning process and providing health care for the environment.
D.9. Justify and judge the time well during the learning process.

2. Program Academic Reference Standards

- Faculty of Medicine, Minia University 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 1}.**
- Minia faculty of medicine has developed the academic standards (ARS) for Medical Doctorate (MD) program and was approved in faculty Council decree No.7528, in its session No.191, dated: 15-3-2010), last update: 20-2-2023 {Annex I}.
- Then, Medical Parasitology department has developed the intended learning outcomes (ILOs) for doctorate (MD) program in Medical Parasitology and the Date of program specifications first approval was by department council: 13-5-2013, last update: 6-3-2023{Annex 2}.

3. Program External References

no external reference standard.

4. Curriculum Structure and Contents

A. Program duration: 3.5 years (Minimum).

B. Program structure:

Overall number of hours/week:

First part:

- Use computer in Medicine

- Lectures: 20 hours
- Practical/clinical: 10 hours
- Total: 30 hours

- Medical statistics and research methodology

- Lectures: 30 hours
- Practical/clinical: 15 hours
- Total: 45 hours

- Immunology

- Lectures: 30 hours
- Practical/clinical: 20 hours
- Total: 50 hours

Second part:

Medical Parasitology.

- Lecture: 128 hours.
- Practical: 128 hours.
- Total hours/week: 256 hours.

A. First part:

Use computer in medicine: Percentage 43 %

Medical statistics and research methodology: Percentage 28.5%

Immuology: Percentage 28.5%

B. Second part

Medical Parasitology: Percentage 100%

C. Levels of program in credit hours system: Not applicable

D. Program courses:

Number of courses: 4

1-Use computer in medicine

2- Medical statistics and research methodology

3-Immunology

4-Medical Parasitology course (compulsory).

N.B: Courses' specifications are present in Annex VI, VII, VIII and correlation of Program ILOs with program content in AnnexV.

	Course Title	Total No. of Hours	No. of		Program ILOs
			Lect.	Lab.	
FIRST PART					
a-	**Use computer in medicine**	**20 hours Theoretical 10practical**	**4**	**2**	**A4,B1,B2,C5,D1,D2, D3**
b-	**Medical statistics and research methodology**	**30hours Theoretical 15 practical**	**3**	**1.5**	**A2,B3,B4,B5,B9,C2, D1,D2,D3**
c-	**Immunology**	**30hours Theoretical 20 practical**	**2**	**1**	**A1,A4,C3,C6**
SECOND PART					
a- Compulsory:	**Medical Parasitology**	**128hours theoretical 128 practical**	**3**	**3**	**A1,A3,A4,A4,B5,B6, B7,B7,B8,B9, B10,C1,C3,C6, D3,D4,D5,D6,D7,D8, D9**

5. Program admission requirements

5. 1. General requirements:

A. Candidates should have one of the following:

- MBBCh degree from any Egyptian faculty of Medicine or
- Equivalent degree from medical schools abroad approved by the Ministry of higher education.

B. Master's degree in Medical Parasitology.

C. Follows postgraduate regulatory rules of postgraduate studies of Faculty of Medicine, Minia University.

5. 2. Specific requirements:

A. Candidates graduated from Egyptian universities should get at least "Good Rank" in their final year / cumulative year examination and grade "Good Rank "in Medical

Parasitology course too.
B. Master degree in Medical Parasitology with at least" Good Rank".

6. Regulations for progression and program completion:

Duration of program is (Minimum 3.5 years), starting from registration till acceptance of the thesis; divided to:

First Part (≥6 months):

- All courses as specified in the internal bylaw
- At least six months after registration should pass before enrolling for the first part examination.
- The exam is set twice a year in April and in October.
- For the student to pass the first part exam, a score of at least 60% in each curriculum is needed.
- Those who fail in one curriculum need to re-exam it only.

Second Part (≥24months):

- Program related specialized courses.
- At least 24 months after passing the first part should pass before student can ask for examination in the second part.
- Fulfilment of the requirements in each course as described in the template registered in the log book is a prerequisite for candidates to be assessed and undertake part 1 and part 2 exams; as following:

a) Training courses
b) Attending lecturers
c) Case presentation
d) Seminars
e) Thesis discussion
f) Workshops
g) Other scientific activities requested by the department

- Two sets of exams: first in April— second in October.
- At least 60 % of the written exam is needed to be admitted to the oral and practical exams.
- 4 times of oral and practical exams are allowed before the student re-attend the written exam.

Thesis/essay (24-48 months):

- Could start after registration and should be completed, defended and accepted after passing the second part final examination, and after passing of at least 24 months after documentation of the subject of the thesis.

7. Accepting the thesis occurs after acceptance and\ or publishing two thesis-based paper in local and international journal and this is adequate to pass this part.

8. Teaching and learning methods:

a- Lectures.

b- Practical training and demonstration weekly throughout the course.
a- Self-training activities such as use of internet and multimedia.
b- Seminars, presentations and assignments.
c- Training courses & workshops.
d- Thesis discussion attendance.
e- Conference attendance

9-Methods of student assessment:

1.Paper based exam:

●Short essay

●MCQs

●Problem solving

2.Practical Exams:

•OSPE

•Statistical analysis of data

3.Oral Exams

Matrix of coverage of course ILOs by Methods of assessment (Annex IV)

Weight of assessment:

Course	Written exam	Oral exam	Practical exam	Total
1-Use of computer in Medicine.	100%	100%	100%	100%
2- Medical Statistics and Research Methodology	100%	100%	100%	100%
3-Immunology	50%	30%	20%	100%
4- Medical Parasitology	100%	100%	100%	100%

10.Methods of Program Evaluation:

Evaluator (By whom)	Method/tool	Sample
1. Senior students (Students of last year	Questionnaires	Attached to the file
2. Graduates (Alumni)	Questionnaires	Attached to the file
3. Stakeholders	Meeting and Questionnaires	Attached to the file
4. External & Internal evaluators and external examiners	Reports	Attached to the file
5. Quality Assurance Unit	Reports and Questionnaires	Attached to the file

	Site visits	

Program Coordinators:
Prof. Azza Kamal Ahmed
Dr.Manar Mostafa
Dr.Reham Ahmed
Head of Department: Prof. Manal Zaki Mohammed
Date of program specifications first approval by department council:
13/5/2013.
Date of last update & approval by department council: 6/3/2023.

Annex I: Comparison between General Academic Reference Standards (GARS) and Faculty Academic Reference Standards (ARS):

1 . المعايير القياسية العامة: NAQAAE General Academic Reference Standards "GARS" for MD Programs	1. Faculty Academic Reference Standards (ARS) for MD Program
1.1. المعرفة والفهم: بانتهاء دراسة برنامج الدكتوراه يجب أن يكون الخريج قادرا علي الفهم والدراية بكل من:	**1.1. Knowledge and understanding:** Upon completion of the doctorate Program (MD), the graduate should have sufficient knowledge and understanding of:
1.1.1 . النظريات والأساسيات والحديث من المعارف في مجال التخصص والمجالات ذات العلاقة	1.1.1. Theories, basics and updated knowledge in his scholarly field and related basic sciences.
1.1.2 . أساسيات ومنهجيات وأخلاقيات البحث العلمي وأدواته المختلفة	1.1.2. Basic, methods and ethics of medical research.
1.1.3 . المبادئ الأخلاقية والقانونية للممارسة المهنية في مجال التخصص	1.1. 3. Ethical and medicolegal principles of medical practice.
1.1.4 . مبادئ وأساسيات الجودة في الممارسة المهنية في مجال التخصص	1.1. 4. Identify Principles and fundamental of quality in professional medical practice.
1.1.5 . المعارف المتعلقة بآثار ممارسته المهنية على البيئة وطرق تنمية البيئة وصيانتها	1.1.5. Knowledge related to effects of professional practice on public health and methods of maintenance and system-based improvement of public health.
2.2 . المهارات الذهنية: بانتهاء دراسة برنامج الدكتوراه يجب أن يكون الخريج قادرا على:	**2.2. Intellectual skills:** Upon completion of the doctorate program (MD), the graduate must be able to:
2.2.1 .تحليل وتقييم المعلومات في مجال التخصص والقياس عليها والاستنباط منها	2.2.1 Analysis and evaluation of information to correlate and deduce from it.
2.2.2 . حل المشاكل المتخصصة استنادا على المعطيات المتاحة	2.2.2. Problem solving skills based on analysis of available data for common health problems related to his scholarly field.
2.2.3 . إجراء دراسات بحثية تضيف إلى المعارف	2.2.3. Carryout research projects related to his scholarly field.
2.2.4 . صياغة أوراق علمية	2.2.4. Write and publish scientific papers.

2.2.5 . تقييم المخاطر في الممارسات المهنية	2.2.5. Assess risk in professional medical practice.
2.2.6 . التخطيط لتطوير الأداء في مجال التخصص	2.2.6. Establish goals, commitments and strategies for improved productivity and performance.
2.2.7 . اتخاذ القرارات المهنية في سياقات مهنية مختلفة	2.2.7. Making professional decisions in different professional contexts.
2.2.8 . الابتكار/ الإبداع	2.2.8. Demonstrate intellectual curiosity necessary for scientific discovery and innovation through active participation in research.
2.2.9 . الحوار والنقاش المبني على البراهين والأدلة	2.2.9. Using Evidence-based strategies to during discussion or teaching others.
2.3 . مهارات المهنية: بانتهاء دراسة برنامج الدكتوراه يجب أن يكون الخريج قادرا على:	**2.3. Professional skills:** Upon completion of the doctorate program (MD), the graduate must be able to:
2.3.1 . إتقان المهارات المهنية الأساسية والحديثة في مجال التخصص	2.3.1. Master the basic as well as modern professional practical and/or clinical skills.
2.3. 2 . كتابة وتقييم التقارير المهنية	2.3.2. Write and evaluate professional reports.
3.3. 2 . تقييم وتطوير الطرق والأدوات القائمة في مجال التخصص	2.3.3. Evaluate and improve the methods and tools in the specific field
2.3.4 . استخدام الوسائل التكنولوجية بما يخدم الممارسة المهنية	2.3.4. use of technological means to serve Professional practice
5.3.2. التخطيط لتطوير الممارسة المهنية وتنمية أداء الآخرين.	2.3.5. Planning for the development of professional practice and improve of the performance of others
2.4 . المهارات العامة والمنتقلة: بانتهاء دراسة برنامج الدكتوراه يجب أن يكون الخريج قادرا على:	**2.4. General and transferable skills** Upon completion of the doctorate program (MD), the graduate must be able to:
2.4.1 . التواصل الفعال بأنواعه المختلفة	2.4.1. Communicate (in writing and orally) effectively and respectfully with peers, faculty, colleagues, and other members of the health care team, understanding the role of consultations and referrals.
2.4.2 . استخدام تكنولوجيا المعلومات ب ما يخدم تطوير الممارسة المهنية	2.4.2. Use of information technology to serve Professional Practice Development.

2.4.3 تعليم الآخرين وتقييم أداءهم .	2.4.3. Demonstrate effective teaching and evaluating others.
.4.2.4 التقييم الذاتي والتعلم المستمر ..	2.4.4. Self-assessment and continuous learning.
2.4.5 استخدام المصادر المختلفة للحصول . على المعلومات والمعارف.	2.4.5. use physical information resources (print, analog), online (electronic, digital,) text, audio-video, book and journal to address medical questions and knowledge to sustain professional growth
2.4.6 العمل في فريق وقيادة فرق العمل .	2.4.6. Work as a member in larger teams and as well as a team leader knows how to develop "teaming strategy" to plan how people will act and work together.
2.4. .7 إدارة اللقاءات العلمية والقدرة علي إدارة الوقت	2.4.7. Manage of scientific meetings and the ability to manage Time effectively.

Annex II: Comparison between Faculty Academic Reference Standards (ARS) and MD program for Medical Parasitology ILOs

Faculty Academic Reference Standards (ARS) for MD Program	Intended learning outcomes of MD Program in Medical Parasitology
2.1. Knowledge and understanding: **Upon completion of the doctorate Program (MD), the graduate should have sufficient knowledge and understanding of:**	**2.1. Knowledge and understanding:** **Upon completion of the doctorate Program (MD) in Medical Parasitology ,the graduate should have sufficient knowledge and understanding of:**
2.1.1. Theories, basics and updated knowledge in his scholarly field and related basic sciences.	**A1. Discuss the basic and updated knowledge of Medical Parasitology, infectious diseases epidemiology, immunology, and molecular biology.**
2.1.2. Basic, methods and ethics of medical research.	**A2. Define all aspects of medical research methodology and follow the ethics of medical research in Medical Parasitology.**
2.1. 3. Ethical and medico-legal principles of medical practice.	**A3. Mention the ethical and medicolegal principles which are relevant to Medical Parasitology practice.**
2.1. 4. Identify principles and fundamental of quality in professional medical practice.	**A4. List all steps of quality assurance and quality control in Medical Parasitology teaching and laboratory work.**
2.1.5. Knowledge related to effects of professional practice on public health and methods of maintenance and system-based improvement of public health.	**A5. Outline the pattern of disease occurrence, infectious cycle, preventive and control measures, immunization, surveillance system, investigation of an epidemic and nosocomial infection.**
2.2. Intellectual skills: **Upon completion of the doctorate program (MD), the graduate must be able to:**	**2.2. Intellectual skills:** **Upon completion of the doctorate program (MD),in Medical Parasitology, the graduate must be able to:**

2.2.1 Analysis and evaluation of information to correlate and deduce from it.	**B1. Correlate data of relevant basic and other sciences.**
2.2.2. Problem solving skills based on analysis of available data for common health problems related to his scholarly field.	**B2. Interpret available data for solving problems in Medical Parasitology**
2.2.3. Carryout research projects related to his scholarly field.	**B3. Plan a laboratory or field based research project.**
2.2.4. Write and publish scientific papers.	**B4. Write and publish scientific papers in Medical Parasitology.**
2.2.5. Assess risk in professional medical practice.	**B5. Assess the risk of major parasitic diseases to develop a control plan for each and B6. Categorize all hazards associated with laboratory activities.**
2.2.6. Establish goals, commitments and strategies for improved productivity and performance.	**B7. Plan for performance improvement in the field of Medical Parasitology.**
2.2.7. Making professional decisions in different professional contexts.	**B8. Make professional decision in various professional situations in Medical Parasitology.**
2.2.8. Demonstrate intellectual curiosity necessary for scientific discovery and innovation through active participation in research.	**B9. Relate new species, new drugs and vaccines for parasitic diseases**
2.2.9. Using Evidence-based strategies to during discussion or teaching others.	**B10. Apply evidence-based strategies during lectures of Medical Parasitology.**
2.3. Professional skills: Upon completion of the doctorate program (MD), the graduate must be able to:	**2.3.Upon completion of the doctorate program (MD) in medical Parasitology, the graduate must be able to:**

2.3.1. Master the basic as well as modern professional practical and/or clinical skills.	**C1. Practice the basic and advanced molecular techniques as molecular amplification, sequencing methods and digital PCR.**

2.3.2. Write and evaluate professional reports.	**C2. Interpret and evaluate medical parasitological reports.**
2.3.3. Evaluate and improve the methods and tools in the specific field	**C3. Evaluate and estimate the laboratory tests available in the department lab.** **C4. Reframe the available molecular tests.**
2.3.4. use of technological means to serve Professional practice	**C5. Use of digital technology in teaching Medical Parasitology and in Medical Parasitology research.**
2.3.5. Planning for the development of professional practice and improve of the performance of others	**C6. Plan for his professional development and assess the performance of his students and peer colleges** **C7. Evaluate the performance of the other students**
2.4. General and transferable skills **Upon completion of the doctorate program (MD), the graduate must be able to:**	**2.4. General and transferable skills** **Upon completion of the doctorate program (MD) in Medical Parasitology, the graduate must be able to:**
2.4.1. Communicate (in writing and orally) effectively and respectfully with peers, faculty, colleagues, and other members of the health care team, understanding the role of consultations and referrals.	**D1. Estimate, explain and interpret the competently information technology to improve the parasitological professional scientific practice.**
2.4.2. Use of information technology to serve Professional Practice Development.	**D2. Select which type of information technology suitable in the field of Medical Parasitology practice.**
2.4.3. Demonstrate effective teaching and evaluating others.	**D3. Determine and select the method used for evaluation.** **D4.Judge and mark the performance of the other students.**

2.4.4. Self-assessment and continuous learning.	**D5. Discuss and appraise his personal learning needs.**
2.4.5. use physical information resources (print, analog), online (electronic, digital,) text, audio-video, book and journal to address medical questions and knowledge to sustain professional growth	**D6. Determine, evaluate and estimate all the available sources of information in the field of Medical Parasitology.**
2.4.6. Work as a member in larger teams and as well as a team leader knows how to develop "teaming strategy" to plan how people will act and work together.	**D7. Interpret and prove the benefit of teamwork.** **D8.Support and award a leadership skill in the learning process and providing health care for the environment.**
2.4.7. Manage of scientific meetings and the ability to manage Time effectively.	**D9. Justify and judge the time well during the learning process.**

Annex (III):

Methods of Teaching & Learning	Intended Learning Outcomes (ILOs)			
	A. Knowledge & understanding	B. Intellectual Skills	C. Professional & Practical skills	D. General & Transferable Skills
Lecture	A1, A2, A3, A4, A5	B1,B2,B3, B4, B4, B5, B6, B7, B8, B9, B10		
Thesis	A2,A3,A4	B1,B2,B3, B4,B7,B9	C1,C2,C4,C5,C6	D2,D5,D6,D8,D9
Practical • Laboratory work • Observation of different slide • Computer programs and image analysis			C1, C3,C4, C5, C6 C3, C5, C6 C2, C5,C7	D3,D4,D5,D7,D8,D9 D4,D5,D9 D1,D2,D3,D6
Seminars		B1, B2, B3, B5, B9,B10		D1, D2
Workshops			C1, C2, C4, C5,C6,C7	D1,D2, D3, D4, D5,D6, D7,D8,D9

Matrix of coverage of program ILOs by Methods of Teaching and Learning

Annex IV: Matrix of coverage of program 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
Paper based exam • Short essay • MCQs • Problem solving	A1, A2, A3, A4, A5	B1, B2, B3, B4.B5, B6, B7, B8, B9, B10		
Practical exam OSPE • Interpret slides with detailed • Statistical analysis of data			C1, C2, C3, C5, C6,C7	D1,D2,D3,D4,D9
Oral Exam	A1, A3, A4, A5	B1, B2, B5, B6, B7, B8, B9		D1, D2, D3, D4, D5, D6, D7, D8, D9

Annex V: Correlations between Program ILOs & program content

Program Coordinator:

- Prof. Dr Azza Kamal Ahmed
- Dr. Manar Mostafa Nagi
- Dr. Reham Ahmed Abd Rabou

Head of the department

Courses (List of courses in 1st and 2nd parts)	Program Intended Learning Outcomes (ILOs)			
	A. Knowledge & Understanding	B. Intellectual Skills	C. Professional & Practical skills	D. General & Transferable Skills
	A	B	C	D
Medical statistics and research methodology	A2	B3,B4,B5,B9	C2,C7	D1, D2, D3
Use computer in medicine	A4	B1, B2	C5	D1, D2, D3
Immunology	A1,A5		C3,C6	
Medical Parasitology	A1,A3,A4,A5	B5,B6,,B7,B8, B9,B10	C1,C3,C6,C7	D3,D4,D5,D6, D7,D8,D9
Thesis	A2,A3,A4	B1,B2,B3, B4,B7,B9	C1,C2,C4,C5,C6	D2,D5,D6,D8,D9

Prof. Dr Manal Zaki Mohammed

Annex VI: Course Specifications of 1st part MD degree in Medical Parasitology

Course specification of

"Uses of Computer in Medicine"

In MD degree

- **University:** Minia
- **Faculty:** Medicine
- **Department delivering the course:** Department of Public Health and Preventive Medicine
- **Program(s) in which the course is offered:** All Clinical and Academic postgraduate MD programs – First part

1. Course Information	
▪ **Academic Year/level:** First part MD ▪ **Course Title:** Uses of Computer in Medicine **Code of the program in which the course is involved:** PR-100. ▪ **Number of teaching hours:** - Lectures: 20 hours - Practical/clinical: 10 hours - Total: 30 hours	
2. Overall Aims of the course	***By the end of the course, the student must be able to:*** 1. Recognize knowledge about the software and their applications in Medicine 2. Gain skills necessary for using and managing heath care information systems
3. Intended learning outcomes of course (ILOs): ***Upon completion of the course, the student should be able to:***	
A. Knowledge and understanding	A.1. Define each part of computer hardware and its function A.2. Have a basic understanding of various computer applications in medicine - for instruction, information managing, and computer based medical record, etc. A.3. Define telemedicine and its importance A.4. Recognize importance of health information technology in improvement of healthcare

	A.5. Describe electronic medical records and obstacles facing it A.6. Identify the concept of big data analysis
B. Intellectual Skills	B.1. Criticize adoption of telemedicine B.2. Discover factors constraining adoption of telemedicine
C. Professional and Practical Skills	C.1. Design framework for understanding of health information system performance
D. General and transferable Skills	D.1. Utilize computers in conducting research D.2. Appraise adoption of telemedicine D.3. Discover skills to carry out the process of improving health information system performance

4. Course Contents

Topic	**No. of hours**	**Lecture**	**Tutorial/ Practical**
Uses of Computer in Medicine			
General concepts Introduction to Microsoft PowerPoint	6	4	2
Health Information Systems (HIS)	6	4	2
Telemedicine	6	4	2
Software Used in the Health Care	6	4	2
Big Data Analysis in Health	6	4	2
Total	**30**	**20**	**10**

5. Teaching and Learning Methods	**Since COVID-19 pandemic, blended learning approach was adopted that mixes virtual face-to-face interaction activities with the online learning. 60% of study method is offline and 40% of study is online** **Online learning materials are available at Minia University site** ▪ Lectures: Face to face lectures, Pre-recorded video lectures ▪ Practical lessons ▪ Assignment ▪ Online quizzes
6. Teaching and Learning Methods for students with limited Capacity	▪ Outstanding student rewarded certificate of appreciation due to high level of achievement ▪ Limited students divided into small group to make learning more effective
7. Student Assessment	

A. Student Assessment Methods	7.1. **Research assignment:** to assess general transferable skills, intellectual skills. 7.2. **Written exams:** • Short essay: to assess knowledge. • Commentary: to assess intellectual skills. 7.3. **Practical Exams:** to assess practical skills, intellectual skills. 7.4. **Oral Exams:** Oral exams to assess knowledge and understanding, attitude, communication 7.5. **Structured oral exams:** to assess knowledge.
B. Assessment Schedule (Timing of Each Method of Assessment)	- Assessment 1: Final written exam week: 24-28 - Assessment 2: Oral exam week: 24-28 - Assessment 3: Practical exam week: 24-28
C. Weighting of Each Method of Assessment	- Final Written Examination 100% - Oral Examination 100% - Practical Examination 100% - Total 100%
8. List of References	
A. Course Notes/handouts	Department notes, lectures and handouts
B. Essential Books	Essential Medical Statistics, Betty R. Kirkwood and J. A. Sterne (2000), 2nd edition
C. Recommended Textbooks	Data Management and Analytics for Medicine and Healthcare: Begoli, Edmon, Fusheng Wang, and Gang Luo. Springer, 2017.
D. Periodicals, websites	-National Institutes of Health: http://www.nih.gov -American Medical Informatics Association: http://www.amia.org/

- **Course Coordinators:**

Dr. Shaimma Mahmoud

Dr. Chrestina Monir

- **Head of Department:**

Professor Dr. Nashwa Nabil Kamal

- **Date of program specifications 1st approval by department council:** 13 /5/2013.

- **Date of <u>last update</u> & approval by <u>department council</u>:** 6/3/2023

نموذج رقم (١١)

جامعة: المنيا

كلية: الطب

قسم: الصحة العامة والطب الوقائي

مسمى المقرر:Uses of Computer in Medicine

Matrix of Coverage of Course ILOs By Contents

Contents (List of course topics)	Week No.	Intended Learning Outcomes (ILOs)			
		A. Knowledge & Understanding	B. Intellectual Skills	C. Professional & Practical skills	D. General & Transferable Skills
		A	B	C	D
Uses of Computer in Medicine					
General concepts Introduction to Microsoft PowerPoint		A.1, A.2,			D.1
Health Information Systems (HIS)		A.4, A.5		C1	D.3
Telemedicine		A.3	B.1, B.2		D.2
Software Used in the Health Care		A.5, A.6			D.1
Big Data Analysis in Health		A.6			

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	A.1 to A.6	B.1		
Practical			C1	
Assignment	A.4	B.2		D1.D.2,D.3

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 paper based exam	A.1, to A.6	B.1		
Practical computer exam (For SPSS, PowerPoint)			C.1	D.1
Oral Exam	A.4, A.6	B.2	C.1	D.2, D.3

Test blueprint for Uses of computer in Medicine course

Topic	Hour	% of topic	Total No. of items	Written exam (100 marks)		Marks (%)	Modified marks (%)
				Knowledge	Intellectual		
Use of Computer in Medicine							
General concepts Introduction to Microsoft PowerPoint	4	20%	6	4	2	30%	30%
Health Information Systems (HIS)	4	20%	4	4		20%	15%
Telemedicine	4	20%	6	2	4	25%	30%
Software Used in the Health Care	4	20%	5	4	1	20%	15%
Big Data Analysis in Health	4	20%	1	1		5%	10%
Total	20	100%	20			100%	100%

Annex VII: Course Specifications of 1st part MD degree in Medical Parasitology

Course specification of "Medical Statistics and Research Methodology" In MD degree

- **University:** Minia
- **Faculty:** Medicine
- **Department delivering the course:** Department of Public Health and Preventive Medicine
- **Program(s) in which the course is offered:** All Clinical and Academic Postgraduate MD programs – First part

1. Course Information	
▪ **Academic Year/level:** First part MD ▪ **Course Title:** Medical Statistics and Research Methodology ▪ **Number of teaching hours:** - Lectures: 30 hours - Practical/clinical: 15 hours - Total: 45 hours	
2. Overall Aims of the course	***By the end of the course, the student must be able to:*** 1. Gain skills necessary for proper practice in the field of Research Methods including diagnostic, problem solving and decision making skills. 2. Apply ethical principles of scientific research with good awareness about patient´s rights. 3. Use precisely the research methodology in researches 4. Influence the students to adopt an analytical thinking for evidence-based medicine 5. Enable graduate students to use statistical principles to improve their professional work and develop the concept of critical interpretation of data 6. To use precisely computer programs SPSS, Epi Info and Excel in data analysis
3. Intended learning outcomes of course (ILOs):	

Upon completion of the course, the student should be able to:	
A. Knowledge and understanding	A.1. Define terms of research methodology . A.2. Describe the spectrum of research methodology . A.3. Explain tie strategies and design of research . A.4. Describe the study design, uses, and limitations . A.5. Explain evidence-based Medicine A.6. Define causation and association . A.7. Tell the principles and fundamentals of ethics. A.8. Describe the different sampling strategies A.9. Summarize the advantages and disadvantages of different sampling strategies A.10. Summarize different methods of samples size calculation A.11. Recognize the sources and the recent methods in data collection and analysis. A.12. Identify the types of variables A.13. Identify types of tabular and graphic presentation of data A.14. Describe the normal curves and its uses A.15. Identify the characters of normal distribution curve A.16. Identify measures of central tendency and measures of dispersion A.17. Explain regression analysis, its use and differentiate its types A.18. Define the screening tests pertinent to selected diseases and the at-risk approach in the application of screening tests A.19. Explain the usefulness of screening tests
B. Intellectual Skills	B. l. Apply research methods to different community health problems. B.2. Apply appropriate research strategies for use . B.3. Select appropriate research methods . B.4. Teach and advocate appropriately in the research design. B.5. Describe the normal curves B.6. Describe and summarize data B.7. Select the proper test of significance for a specific data.

	B.8. Interpret selected tests of significance and the inferences obtained from such tests
C. Professional and Practical Skills	C.1. Plan a research proposal for community diagnosis. C.2. Design questionnaires. C.3. Conduct research. C.4. Judge association and causation. C.5. Criticize for bias and confounding factors C.6. Design data entry file C.7. Validate data entry C.8. Manage data files C.9. Construct tables and graphs C.10. Calculate different samples sizes C.11. Calculate measures of central tendency and measures of dispersion C.12. Calculate sensitivity, specificity, and predictive values
D. General and transferable Skills	D. l. Lead a research team to conduct a specific study . D.2. Take part and work coherently with his associates to in research. D.3. Write scientific papers. D.4. Appraise scientific evidence D.5. Analyze and interpret data D.6. Use standard computer programs for statistical analysis effectively

4. Course Contents

Topic	No. of hours	Lecture	Tutorial/ Practical
Research methods			
Introduction: - Introduction to research. - Terminology and Rationale - Originality		3	
- Study design: -Cross sectional study and the prevalence rate -Cohort study, incidence rate, relative & attributable risk -Case-control study, Odd's ratio sampling -Experimental study and clinical trials		4	
- Sources of Errors in Medical Research **- Bias and confounding and its Control.**		3	

- Validity and reliability		2	
- The questionnaire design		2	
- Writing the Research Paper or Manuscript **- Protocol Writing**		2	2
- Critic technique for the literature review		2	2
- Association and causation		1	
- Evidence -based approach in medical practice		2	1
- Ethics of medical research		2	
Statistics			
Sampling		1	
Introduction to Sample Size Calculation		1	1
Data presentation		1	1
Tests of significance		2	
Introduction to SPSS		1	1
Proportion test			1
Chi-square test			1
Student T test, Paired T test			1
ANOVA test			1
Correlation (simple and multiple)			1
Regression			1
Screening		1	1
Total		**30**	**15**
5. Teaching and Learning Methods	**Since COVID-19 pandemic, blended learning approach was adopted that mixes virtual face-to-face interaction activities with the online learning. 60% of study method is offline and 40% of study is online** **Online learning materials are available at Minia University site** ▪ Lectures: Face to face lectures, Pre-recorded video lectures ▪ Practical lessons ▪ Assignment ▪ Online quizzes		
6. Teaching and Learning Methods for students with limited Capacity	▪ Outstanding student rewarded certificate of appreciation due to high level of achievement		

	▪ Limited students divided into small group to make learning more effective
7. Student Assessment	
A. Student Assessment Methods	7.1. **Research assignment:** to assess general transferable skills, intellectual skills. 7.2. **Written exams:** • Short essay: to assess knowledge. • Commentary: to assess intellectual skills. 7.3. **Practical Exams:** to assess practical skills, intellectual skills. 7.4. **Oral Exams:** Oral exams to assess knowledge and understanding, attitude, communication 7.5. **Structured oral exams:** to assess knowledge.
B. Assessment Schedule (Timing of Each Method of Assessment)	- Assessment 1: Final written exam week: 24-28 - Assessment 2: Oral exam week: 24-28 - Assessment 3: Practical exam week: 24-28
C. Weighting of Each Method of Assessment	- Final Written Examination 100% - Oral Examination 100% - Practical Examination 100% - Total 100%
8- List of References	
A. Course Notes/handouts	- Department notes, lectures and handouts
B. Essential Books	-The Lancet Handbook of Essential Concepts in Clinical Research
C. Recommended Textbooks	***Research methods:*** **- Introducing Research Methodology**; A Beginner's Guide to Doing a Research Project -**Understanding Clinical Research**, Renato Lopes and Robert Harrington; ISBN-10: 0071746781 | ISBN-13: 978-0071746786

	- **Users' guides to the medical literature: a manual for evidence-based clinical practice:** Guyatt, G., D. Rennie, M. Meade and D. Cook (2002), AMA press Chicago. -**Research Methods in Community Medicine:** Surveys, Epidemiological Research, Program Evaluation, Clinical Trials, 6th Edition Joseph Abramson, Z. H. Abramson ***Computer:*** - Discovering statistics using IBM SPSS statistics, Field, A. (2013). sage. - Medical Statistics: A Guide to SPSS, Data Analysis and Critical Appraisal, Belinda Barton, Jennifer Peat - 2nd Edition Everitt, Brian S. - Medical statistics from A to Z: a guide for clinicians and medical students. Cambridge University Press, 2021. - Bowers, David. Medical statistics from scratch: an introduction for health professionals. John Wiley & Sons, 2019. - Aviva, P. (2005): Medical Statistics at a Glance, Blackwell Company, 2nd , ed., Philadelphia
D. Periodicals, websites	- https://phrp.nihtraining.com/users/login.php - http://www.jhsph.edu/ - Journal of Biomedical Education - https://lagunita.stanford.edu/courses/Medicine/MedStats-SP/SelfPaced/about?fbclid=IwAR3nfirLM4wnuEqqUjLjk8TCR7lzPdnpGqwin06L-GjFq32a62w3j6R5s9c

- **Course Coordinators:**

Dr. Chrestina Monir

Dr. Shaimma Mahmoud

- **Head of Department**:

Professor Dr. Nashwa Nabil Kamal

- **Date of program specifications 1st approval by <u>department council</u>:** 13 /5/2013.
- **Date of <u>last update</u> & approval by <u>department council</u>:** 6/3/2023

نموذج رقم (١١)

جامعة: المنيا
كلية: الطب
قسم: الصحة العامة والطب الوقائي
مسمى المقرر: Medical Statistics and Research Methodology

Matrix of Coverage of Course ILOs By Contents

Contents (List of course topics)	Week No.	Intended Learning Outcomes (ILOs)			
		A. Knowledge & Understanding	B. Intellectual Skills	C. Professional & Practical skills	D. General & Transferable Skills
		A	B	C	D
Introduction: - Introduction to research. - Terminology and Rationale - Originality		A.1, A.2			
- Study design : -Cross sectional study and the prevalence rate -Cohort study, incidence rate, relative & attributable risk -Case-control study, Odd's ratio sampling -Experimental study and clinical trials		A.3, A.4	B.l, B.2, B.3, B.4,	C.1	
- Sources of Errors in Medical Research **- Bias and confounding and its Control.**			B.3	C.5	
- Validity and reliability					
- The questionnaire design				C.2	

- Writing the Research Paper or Manuscript **- Protocol Writing**			B.3	C.3	D.1, D.2, D.3
- Critic technique for the literature review					
- Association and causation		A.6		C.4	
- Evidence -based approach in medical practice		A.5			
- Ethics of medical research		A.7			
Statistics					
Sampling		A.8, A.9, A.11			D.4
Introduction to Sample Size Calculation		A.10		C.10	D.4
Data presentation		A.13, A.14	B.6	C.9	D.4
Tests of significance		A.15, A.16	B.5	C.11	D.4
Introduction to SPSS		A.12	B.6	C.6, C.7, C.8	D.5, D.6
Proportion test		A.11	B.7, B.8		D.5, D.6
Chi-square test		A.11	B.7, B.8		D.5, D.6
Student T test, Paired T test		A.11	B.7, B.8		D.5, D.6
ANOVA test		A.11	B.7, B.8		D.5, D.6
Correlation (simple and multiple)		A.11	B.7, B.8		D.5, D.6
Regression		A.17	B.7, B.8		D.5, D.6
Screening		A.18, A.19	B.7, B.8	C.12	D.4

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	A.1, A.2, A.3, A.4, A.5, A.6, A.7 , A.8, A.9, A.10, A.11, A.12, A.13, A.14, A.15, A.16, A.17, A.18	B.1, B.2, B.3, B.4, B5, B.6, B.7, B.8		

Practical			C.1, C.3, C.4, C.5, C.6, C.7, C.8. C.9, C.10, C.11,C.12	
Assignment	A.11, A.13, A.18	B.7, B.8	C.2, C.6, C.8, C.9, C.10, C.12	D.1, D.2., D.4, D.5, D.6

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 paper based exam	A.3, A.4, A.5, A.6, A.7, A.8, A.9, A.14, A.15, A.16, A.18	B.3, B.5,		
Practical exam (Statistical exam)			C.1, C.2, C.5, C.6, C.7,C.8, C.9, C.10, C.11, C.12	
Oral exam	A.10, A.11, A.12, A.13, A.15, A.16, A.17, A.18	B.1, B.2, B.6, B.7, B.8		D.1, D.2, D.5, D.6

Test blueprint for Research methodology course

Topic	**Hour**	**% of topic**	**Total No. of items**	**Written exam (100 marks)**		**Marks (%)**	**Modified marks (%)**
				Knowledge	**Intellectual**		
Research							
- Introduction to research. - Terminology and Rationale - Originality	3	10%	5	4	1	7%	5%
- Writing the Research Paper or Manuscript - Protocol Writing	2	6.67%	4	1	3	13%	10%

- Association and causation	1	3.33%	3	2	1	7%	8%
- Evidence -based approach in medical practice	2	6.67%	1	1		3%	5%
- Ethics of medical research	2	6.67%	2	2		3%	6%
Statistics							
Sampling	1	3.33%	2	1	1	4%	4%
Introduction to Sample Size Calculation	1	3.33%	1	1		2%	2%
Data presentation	1	3.33%	3	2	1	5%	4%
Tests of significance	2	6.67%	2	1	1	8%	8%
Introduction to SPSS	1	3.33%	1	1		3%	3%
Screening	1	3.33%	2	1	1	3%	3%
Total	**30**	**100%**					**100%**

Annex VIII: Course Specifications of 1st part MD degree in Medical Parasitology

Course specification of "Immunology" For MD degree Medical Parasitology

- **University:** Minia
- **Faculty:** Medicine
- **Department delivering the course:** Microbiology and Immunology department
- **Program(s) in which the course is offered:** MD Medical Parasitology – First part

1. Course Information	
▪ **Academic Year/level:** MD Medical Parasitology – First part ▪ **Course Title:** Immunology ▪ **Number of teaching hours:** - Lectures: 30 hours. - Practical/clinical: 20 hours - Total: 50 hours	
2. Overall Aims of the course	1. Demonstrate in depth understanding of the underlying 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. 2. Describe common clinical conditions and diseases related to: -MHC and transplantation immunology. -Hypersensitivity reactions. -Tumor immunology -Tolerance and autoimmunity -Immunodeficiency disorders
3. Intended learning outcomes of course (ILOs): ***Upon completion of the course, the student should be able to:***	

A. Knowledge & Understanding	A1. Illustrate the natural barriers for infection (innate immunity) A2. Identify the structure and functions of different components of the immune system. A3. Describe the components, steps of activation and function of the two types of acquired immunity (humeral and cell mediated) A4. Explain the role of the immune system in the health and disease of the human being. A5. Describe the different methods for assessment of the immune response. A6. State the principles of immunization.
B. Intellectual Skills	B.1. Relate the role of immune system in health and disease. B.2. Correlate an investigatory and analytic thinking (problem solving) approaches to conditions relevance to immune disorders. B.3. Design and present audits, cases, seminars in common problems related to immune disorders. B.4. Formulate management plans and alternative decisions in different situations in the field of immune disorders.
C. Professional and Practical Skills	C.1. Identify antigen-antibody reaction in blood group and disease diagnosis. C. 2. Develop and carry out plans for performing experiments related to immunology. C.3. Perform the following non- invasive procedures: - ELISA -Western blot - Tube and latex agglutination.
D. General and transferable Skills	D.1. Present information clearly in written, electronic and verbal forms during preparation of seminars. D. 2. Communicate ideas and arguments effectively. D. 3. Manage time and resources effectively and set priorities. D. 4. Use information technology to manage information, access on-line medical information; and support their own education.

4. Course Contents

Topic	**Lecture hours/week**	**Practical/Clinical hours/week**	**Total No. of hours /week**
Innate Immunity, Introduction to the immune system	2	1	3

Structure and function of the immune system	2	1	3
cell mediated immunity	3	1	4
Humeral Immunity	2	2	4
Complement	1		1
Cytokines	1		1
Protective Immunity	3	2	5
Hypersensitivity	2	2	4
Immune tolerance, Autoimmunity	3	2	5
Immunization	3		3
Tumor immunology	3	2	5
Transplantation	2	2	4
Immunodeficiency disorders	2	1	3
Ag-Ab reactions and Immunological techniques	1	4	5
Total	**30**	**20**	**50**

5. Teaching and Learning Methods	▪ Lectures for knowledge and intellectual skill outcomes. ▪ On line lectures and audios ▪ Practical sessions to gain practical skills aided with the practical book. ▪ Self-directed learning (SDL) for the topics studied in lectures or related topics; including libraries, E learning (practical photographs and audios of different topics available online for student learning). ▪ Seminars ▪ Log book
6. Teaching and Learning Methods for students with limited Capacity	▪ Special sessions to explain any difficult part for students to understand ▪ Encourage students to seek for the scientific material ▪ Decrease speed of teaching if compared with other student. ▪ Incentive awards for students with limited abilities
7. Student Assessment	
A. Student Assessment Methods	7.1. Written exams: Short essay, MCQ, case study. 7.2. Practical Exams: OSPE. 7.3. Oral Exams 7.4. Log book
B. Assessment Schedule (Timing of each method of assessment)	- Assessment 1: Final written exam week: 24-28. - Assessment 2: Final oral exam week: 24-28. - Assessment 3: Final Practical week: 24-28.
C. Weighting of each method of assessment	Final Written Examination 50 **%** Oral Examination 30 **%** Practical Examination 20%

8. List of References	
A. Course Notes/handouts	Department Books and notes Course notes, and handouts
B. Recommended Text Books	▪ Lippincott's illustrated reviews, Immunology, Doan T, Melvold R, Viselli S and Waltenbaugh . Lippincott Williams and Wilkins , latest edition ▪ Review of Medical Microbiology and Immunology. Warren Levinson, McGraw-Hill Companies, last edition ▪ Review of Medical Microbiology and Immunology. Warren Levinson, McGraw-Hill Companies, last edition.
C. Periodicals, websites	Periodicals, Web Sites, ... etc.

- **Course Coordinators:**

Dr. Wedad Mahmoud

- **Head of Department**:

Professor Dr. Wafaa Khairy Mohamed

- **Date of <u>last update</u> & approval by <u>department council</u>:** 3/ 2023

نموذج رقم (١١)

جامعة:المنيا

كلية: الطب

قسم: الميكروبيولوجيا و المناعة الطبية

كود المقرر:

مسمى المقرر:Immunology

Matrix of Coverage of Course ILOs By Contents

Contents (List of course topics)	Week No.	Intended Learning Outcomes (ILOs)			
		A. Knowledge & Understanding	B. Intellectual Skills	C. Professional & Practical skills	D. General & Transferable Skills
		A	B	C	D
Nucleic acid structure.		A.1, A.2			D.1, D.2, D.3, D.4
Replication, Transcription and Translation:		A.3, A.4	B.l, B.2	C.1	
Transcription and Translation			B.2	C.1	D.1, D.2, D.3, D.4

differences between pro- and eukaryotes.					
Regulation of gene expression in eukaryotes and in prokaryotes					
Nucleic acid amplification techniques				C.1	
DNA sequencing			B.2	C.1	D.1, D.2, D.3, D.4
Proteomics and Genomics					
microRNA and siRNA principles.		A.6		C.1	
Regulatory RNA		A.5			
Molecular Biology Techniques		A.7			D.1, D.2, D.3, D.4

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

1- Lectures for knowledge and intellectual skill outcomes.

2- On line lectures and audios

3- Practical sessions to gain practical skills aided with the practical book.

4-Self-directed learning (SDL) for the topics studied in lectures or related topics; including libraries, E learning (practical photographs and audios of different topics available online for student learning) .

5- Seminars

6- Log book

Methods of Teaching & Learning	**Intended Learning Outcomes (ILOs)**			
	A. Knowledge & Understanding	**B. Intellectual Skills**	**C. Practical skills**	**D. General & Transferable Skills**
	A	**B**	**C**	**D**
Lecture	A.1, A.2, A.3, A.4, A.5, A.6	B1,2,3, 4		
Practical		B.1,B.2, B.3, B.4	C1,2,3	D1,2,.3, D.4,
Self-directed learning	A1,2,.3, A.4, A.5, A6	B.1, B.2, B.3, B.4		D.1, D.2.,3 D.4,
Seminars	A.1,2,3, A.4, A.5,6	B1,.2, B.3, B.4		D.1, D.2.,3 D.4,

Log book	A.1,2,3, A.4, A.5,6	B1,.2, B.3, B.4	C1,2,3	D.1, D.2.,3 D.4,

Matrix of Coverage of Course ILOs by Methods of Assessment

6) Student Assessment Methods AND MATRIX:

- Written exams: Short essay, MCQ, case study.

- Practical Exams: OSPE.

- Oral Exams

- Log book

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-A6	B1-B4		D1,4,5
Practical exam OSPE		B.1-B4	C.1 -C.3	D1-D5
Oral Exams	A1-A6	B1-B4	-	
Log book	A1-A6	B1-B4	C1-C3	D1-D5

Test blueprint for Immunology course

Topic	Hour	% of topic	Total No. of items	Written exam (100 marks)		Marks (%)	Modified marks (%)
				Knowledge	Intellectual		
Innate Immunity, Introduction to the immune system	**2**	**6.67%**	**6**	**3**	**3**	**6.67%**	**6%**
Structure and function of the immune system	**2**	**6.67%**	**7**	**4**	**3**	**6.67%**	**7%**
cell mediated immunity	**3**	**10%**	**10**	**5**	**5**	**10%**	**10%**
Humeral Immunity	**2**	**6.67%**	**7**	**4**	**3**	**6.67%**	**7%**
Complement	**1**	**3.33%**	**3**	**2**	**1**	**3.33%**	**3%**
Cytokines	**1**	**3.33%**	**3**	**2**	**1**	**3.33%**	**3%**
Protective Immunity	**3**	**10%**	**10**	**6**	**4**	**10%**	**10%**
Hypersensitivity	**2**	**6.67%**	**7**	**4**	**3**	**6.67%**	**7%**
Immune tolerance, Autoimmunity	**3**	**10%**	**10**	**5**	**5**	**10%**	**10%**

Immunization	**3**	**10%**	**10**	**6**	**4**	**10%**	**10%**
Tumor immunology	**3**	**10%**	**10**	**6**	**4**	**10%**	**10%**
Transplantation	**2**	**6.67%**	**7**	**4**	**3**	**6.67%**	**7%**
Immunodeficiency disorders	**2**	**6.67%**	**7**	**4**	**3**	**6.67%**	**7%**
Ag-Ab reactions and Immunological techniques	**1**	**3.33%**	**3**	**2**	**1**	**3.33%**	**3%**
Total	**30**	**100%**					**100%**

Course specification of
"Medical Parasitology (Second part)"
For MD degree
Medical Parasitology

- **University:** Minia
- **Faculty:** Medicine
- **Department delivering the course:** Medical Parasitology department
- **Program(s) in which the course is offered:** MD Medical Parasitology – Second part

1. Course Information	
• Academic Year/level: Second part MD of Medical Parasitology	Course Title: Medical Parasitology **Code of program in which the course is involved:** **PR-100**
• Number of teaching hours: Lectures: 128 hours; 4 hours/week. **Practical/clinical:** 128 hours; 4 hours/week. **The total number of weeks:** 32 weeks excluding public holidays.	
2. Overall Aims of the course	By the end of the course the student must be able to: 1. Know the parasites of medical significance and reasoned diagnosis of parasitic diseases. 2. Understand the parasite biology, life cycles, host–parasite relationship, environmental and host factors regulating parasitic diseases. 3. Know the epidemiology and transmission patterns of parasites as an essential prerequisite for the development of effective control programs. 4. Study the pathogenic potential, pathogenesis, clinical picture and complications of parasitic organisms.

	5. Have adequate knowledge about endemic parasites and national parasitic problems. 6. Study the general outlines of parasite treatment and control and their impact on better health, welfare, and productivity of human being.
3. Intended learning outcomes of course (ILOs): ***Upon completion of the doctorate Program (MD) in Medical Parasitology, the student should be able to:***	
A. Knowledge & Understanding	A1-Recognize recent scientific data about morphological characteristics and other biological aspects of medically important parasites (Protozoa and Helminths). A2-Recognize biological aspects, the molecular biology and behavior of medically important vectors. A3- Recognize updated geographical distribution of important parasites and explain the environmental factors determining such distribution. A4-Discuss pathogenesis and associated clinical manifestations of parasitic infections. A5-Describe the pattern of disease occurrence, infectious cycle, preventive and control measures, immunization, surveillance system, investigation of an epidemic and endemic parasitological diseases. A6- Identify ethical and medico-legal principles in obtaining samples from patients. A7-Identify all steps of quality assurance and quality control in teaching and laboratory safety. A8-Discuss genomic basis to complex disease mechanisms e.g. antigenic variation in *Trypanosoma* and *Leishmania* parasites.
B. Intellectual Skills	B1-Analysis and evaluation of published data related to medical parasitology research. B2-Interpret available data for solving problems and overcomes obstacles. B3-Design a laboratory or field-based research project. B4-Write and publish scientific papers in Medical Parasitology.

	B5-Assess the risk of major parasitic diseases to develop a control plan for each. B6-Assess all hazards associated with laboratory activities. B7-Plan for performance Improvement in the field of Medical Parasitology. B8-Make professional decision in various professional situations in Medical Parasitology. B9-Organize and plan for active participation in research for discovery of new therapy or diagnostic techniques. B10-Interpret evidence-based strategies during discussion and presentation of scientific data in conference and workshops.
C. Professional and Practical Skills	C1-Perform basic and advanced molecular diagnostic techniques amplification, sequencing methods, and PCR. C2-Write and evaluate Medical Parasitological reports. C3-Evaluate laboratory tests available in the department lab. C4-Practice the latest functional genomic and proteomic techniques to understand the basic biology of medically important parasites. C5-Outline professional development plan for himself and assess the performance of his students and peer colleges.
D. General and transferable Skills	D1-Communicate with others in many ways, including verbal communication, documentation, presentations, and emails D2-Use and integrate of information technology in teaching others, in research and in his professional development (join online conferences and enroll online interactive educational courses). D3-Demonstrate effective teaching skills and evaluating others techniques. D4-Use physical information resources (print, analog), online (electronic, digital,) text, audio-video, book and journal to address medical questions and knowledge to sustain professional growth D5-Work effectively in a group and collaborate with others toward a common goal D6-Manage of scientific meetings and manage Time effectively.

4. Course Contents			
Topic	**No. of hours**	**Lecture**	**Tutorial/ Practical**
Introduction	**6hr**	**3hr**	**3hr**
Medical Helminthology			
***Class Trematoda** - Family Schistosomatidae: *Schistosoma (haematobium, mansoni, japonicum, mekongi, intercalatum).* - Family Paragonimidae: *Paragonimus (westermani, pulmonalis, african).* - Family Opisthorchidae: *Clonorchis sinensis, Opisthorchis (viverrini, felineus).* - Family Dicrocoeliidae: *Dicrocoelium dendriticum* - Family Fasciolidae: *Fasciola (gigantica, hepatica), Fasciolopsis buski.* - Family Heterophyidae: *Heterophyes heterophyes, Metagonimus yokogawai* - Family Echinostomidae: *Echinostoma (ilocanum, echinatum, hortense, malayanum, revolutum, hypoderaeum conoideum). Gastrodiscoides hominis, Watsonius watsoni.* - Family Paramphistomidae: *** Snails (Malacology)** *Order Prosobranchia* *Order Pulmonata*	**24hr**	**12hr**	**12hr**
Class Cestoidea - Family Diphyllobothriidae: *Diphyllobothrium latum, Diphyllobothrium mansoni (Spirometra erinacei).* - Family Taeniidae: *Taenia saginata, Taenia solium, Taenia taeniaformis, Taenia pisforme, Multicepes multiceps,Multicepes seralis, Echinococcus (granulosus, multilocularis, oligarthrus, vogeli).* - Family Hymenolepididae: *Hymenolepis nana, Hymenolepis diminuta.* - Family Dipylididae: *Dipylidium caninum.* - Family Davaineidae: *Raillietina spp. (celebensis, asiatica, madagascariensis).* - Family Mesocestoididae: *Mesocestoides lineatus.*	**24hr**	**12hr**	**12hr**

*Extra-intestinal cestodes: *Sparganosis, Cysticercosis, Hydatid disease, Coenurosis.*			
Class Nematoda - Family Strongyloidae: *Strongyloides stercolaris.* - Family Ancylostomatidae: *Necator americanus, Ancylostoma duodenale, Ancylostoma caninum, Ancylostoma braziliense.* - Family Trichostrongylidae: *Trichostronggylus colubriformis* - Family Angiostrongylidae: *Angiostrongylus cantonensis, Angiostrongylus costaricensis.* - Family Ascarididae: *Ascaris lumbricoides, Ascaris suum,Toxocara(canis, cati).* - Family Anisakidae: *Anisakis simplex.* *** Larva migrans:** Visceral larva migrans: *Toxocara canis, Toxocara cati.* Cutaneous larva migrans: *Ancylostoma braziliense, Ancylostoma caninum, Ancylostoma ceylanicum.* - Family Oxyuridae: *Entrobius vermicularis.* - Family Dracunculoidea: *Dracunculus medinensis.* - Family Filarioidea: *Wuchereria bancrofti, Brugia malayi, Brugia timori, loa loa, Onchocerca volvulus, Mansonella perstans, Mansonella streptocerca, Mansonella ozzardi.* *Accidental filarial infection: *Dirofilaria (immitis, repens, striata).* - Family Gnathostomoidea: *Gnathostoma spinigerum.* - Family Thelaziidae: *Thelazia.* - Family Trichinellidae: *Trichinella spiralis.* - Family Trichuridae: *Trichuris trichiura, Capillaria (philippinensis, hepaticum, aerophila).* - Family Dioctophymatidae: *Dioctophyma renale.*	**32hr**	**16hr**	**16hr**
***Non helminth groups:** **1. Pentastomes.** Family Linguatulidae: *Linguatula serrata.* Family Armilliferidae: *Armillifer armillatus.* **2. Leeches.**	**6hr**	**3hr**	**3hr**
Medical Protozoology			

Class: Rhizopoda (Amoeba): *Entamoeba histolytica, Entamoeba dispar, Entamoeba hartmanni, Entamoeba coli, Entamoeba polecki, Entamoeba gingivalis, Iodamoeba butschlii, Endolimax nana, pathogenic free living amoeba (Naegleria fowleri, Acanthamoeba).*	**20hr**	**10hr**	**10hr**
- Class Zoomastigophora (flagellates): *Giardia lamblia, Chilomastix mesnili, Retortamonis intestinalis, Enteromonas hominis, Dientamoeba fragilis, Trichomonas (vaginalis, tenax, hominis), Leishmania (visceral, cutaneous, mucocutaneous), Trypanosomes (Africans, American).*	**20hr**	**10hr**	**10hr**
- Ciliates: *Balantidium coli.* - Class: Sporozoea**:** *Toxoplasma gondii, Crytosporidium, Isospora belli, Sarcocystis, Cyclospora cayentanensis, Blastocystis hominis. Plasmodium (vivax, falciparum, ovale, malaria). Babesia* * *Microspora.* * *Pneumocystis carinii.* * Coprozoic protozoa.	**20hr**	**10hr**	**10hr**
Medical Entomology			
Class Insecta **Order Diptera** **- Subfamily Culicinae (Mosquitoes)** Tribe Anophelini: *Anopheles anopheles (Anopheles anopheles algeriensis, Anopheles anopheles caustani), Anopheles myzomyia (pharoensis, multicolor, sergenti, superpictus, d'thali, gambia).* Tribe Culicinae: *Culex, Aedes, Mansoni, Uranotaenia, Theobaldia.* - Family Psychodidae: *Phlebotomus papatasii, Lutzomyia.* - Family Simuliidae: *Simulium* - Family Ceratopogonidae: *Culicoides.* - Family Tabanidae***:*** *Tabanus, Haematopota, Chrysops, Pangonia.*	**16hr**	**8hr**	**8hr**
-Family Muscidae: *Musca domestica,Muscina stabulans, Stomoxys calcitrans, Glossina species (G. palpalis, moristans).*	**16hr**	**8hr**	**8hr**

- Family Calliphoridae: *Calliphora, Lucilia, Chrysomia, Cochliomyia, Cordylobia, Aucheromyia. Sarcophaga, Wohlfahrtia* - Family Anthomydae (flour flies): *Fannia canicularis, Fannia scalaris.* - Family Oestridae: *Oestrus ovis, Hypoderma bovis, Gasterophilus intestinalis.* - Subfamily Cuterebrinae: *Dermatobia hominis.*			
Order Siphonaptera (fleas) *Ctenocephalus (canis, felis), Ceratophyllus fasciatus. Pulicidae {Pulex irritans, xenopsylla (cheopis, braziliense, Astia)}, Sarcopsydidae (Tunga penetrans, Echydnophaga gallinacean).* **Order Hemiptera (Bugs)** Family Cimicidae: *Cimex lectularius.* Family Reduviidae: *Triatoma megista.* **Order Anopleura (lice)**. Family Pediculidae: *Pediculus humanus corporis, Pediculus humanus capitis, Phthirus pubis.*	**16hr**	**8hr**	**8hr**
Class Arachnida **Suborder Astigmata (mites)** Family Sarcoptidae: *Sarcoptes scabiei.* Family Demodicidae: *Demodex folliculorum.* Family Trombiculidae: *Trombicula akamushi.* **Suborder Mesostigmata (ticks)** Family Ixodidae (Hard ticks): *Dermacentor, Ixodes, Rhipicephalus, Sanguineus, Hyalomma spp.* Family Argasidae: *Argas, Ornithodorus spp.* **Order Scorpionida:** *Scorpion.* **Order Araneida:** *Spiders.* **Class Crustacea** Subclass Copepoda: *Cyclops.*	**12hr**	**6hr**	**6hr**
Immunity and immunopathology in parasitic infection			

<u>Immunity to Helminths:</u> Immunity to flukes. Immunity to tape worms. Immunity to nematodes: Intestinal nematodes, immunity to filarial nematodes. **Immunity to Protozoa:** Immunity to intestinal protozoa: Intestinal Ameba, Intestinal Flagellates, Intestinal Coccidians, Intestinal Ciliates. Immunity to protozoa inhabiting the urinogenital tract: Trichomonas vaginalis. Immunity to macrophage-inhibiting protozoa: Leishmania spp., Toxoplasma gondii. Immunity to blood inhibiting protozoa: African Trypanosomes, American Trypanosome, Malaria, Babesia. Immunity to tissue inhibiting protozoa: Toxoplasma gondii, Trypanosoma cruzi, Sarcocystis in muscle, Microsporidians. **Immunity to Arthropods**	**24hr**	**12hr**	**12hr**
Diagnostic Parasitology			
I) <u>Stool examination:</u> **II) <u>Urine examination</u>** **III) <u>Blood examination:</u>** **IV) <u>Sputum, Aspirates, CSF, Biopsy material examination.</u>** **V) <u>Culture methods.</u>** **VI) <u>Animal inoculation.</u>** **VI) <u>Serological diagnosis.</u>** DNA probes, PCR. **VII) <u>Molecular diagnosis:</u>** * Peudoparasites	**20hr**	**10hr**	**10hr**
Total	**256hr**	128hr	128hr
5. Teaching and Learning Methods	▪ Interactive Lectures ▪ Practical sessions including practical quizzes and assignments. ▪ Attending and participating in scientific conferences, workshops, and thesis discussion.		
6. Teaching and Learning Methods for students with limited Capacity	• Not present		
7. Student Assessment			
A. Student Assessment Methods	• **Paper based exam:** to assess the capability of the student for assimilation		

	and application of the knowledge included in the course. • **Oral exam:** to assess the student intellectual and communication abilities regarding basic knowledge and understanding of the course topics, and to help the teaching staff. • **OSPE:** To assess ability of the student for applying information studied in the course in diagnosis and drawing of different microscopic and projector slides. To evaluate the % of achievement of the *intended* learning outcome of the course.
B. **Assessment Schedule:** Exam are set twice a year April and September.	• **Assessment 1:** 2 paper based exam exams by: • A-Short essay • B-MCQs • C-Problem solving • **Assessment 2:** OSPE.(**in the form of microspic examination of slides and images for the different stages of the parasites and the clinical findings with MCQ questions**) • **Unknown sample to examine, diagnose.** **Assessment 3:** Oral exam, after the paper based exam
C. Weighting of Each Method of Assessment	• **Paper based exam**:100% • **Practical examination:** 100% • **Oral examination:** 100%
8. List of References	
A. Course Notes/handouts	Department book by staff members of Medical Parasitology department
B. Essential Books	•Markell and vogue's (John DT, Petri WA. Markell and Voge's medical parasitology-e-book. Elsevier Health Sciences; 2006 Jan 27). Essential Parasitology. Jp Medical Ltd; 2nd ed. edition (2018) Worms and human diseases.2nd EditionR. Muller (2022)

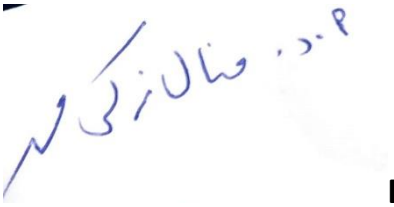
	Foundations of Parasitology 9th Edition by Larry Roberts, John Janovy, Steve Nadler (2012). A Colour Atlas of Tropical Medicine and Parasitology (Year Book Color Atlas Series) W. Peters, Herbert M. Gilles (**1977).**
C. Recommended Text Books	Peters' Atlas of Tropical Medicine and Parasitology7th Edition - October 2018 •Basic Clinical Parasitology (Brown HW. Basic clinical parasitology. Basic clinical parasitology.. 1969(Edn 3).
D. Periodicals, websites	• CDC website • Parasitology today (Trends in Parasitology) journal • Advanced pubmed websites. Parasitology Research Division of Biology, Kansas State University **mri.sari.ac.uk/parasitology.asp** **British Society of Parasitology** • **And others**

Coordinator:

- Prof. Dr Azza Kamal Ahmed
- Dr. Manar Mostafa Nagi
- Dr. Reham Ahmed Abd-Rabou

Head of Department:

- Prof. Dr Manal Zaki Mohammed



Date of last update & approval by department Council: 6- 3- 2023

نموذج رقم (١١أ)

جامعة/أكاديمية: المنيا
كلية / معهد: ا لطب

قسم: الطفيليات الطبية

مسمى المقرر	**Parasitology for MD Degree in Medical Parasitology**
كود المقرر	PR 100

A. Matrix of Coverage of Course ILOs By Contents

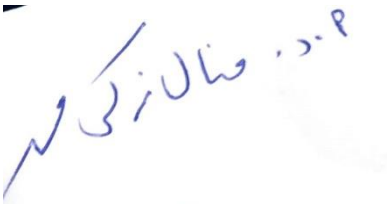
Intended Learning Outcomes (ILOs)				Week No.	Contents (List of course topics)
D. General & Transferable Skills	C. Professional & Practical skills	B. Intellectual Skills	A. Knowledge & Understanding		
D	C	B	A		
D1, D2,D3, D4, D5, D6	C2, C4, C5	B1, B2, B3, B4, B5, B7, B8, B9, B10	A1, A3, A4, A5 A7		1. Medical Helminthology
D1, D2,D3, D4, D5, D6	C2, C4, C5	B1, B2, B3, B4, B5, B7, B8, B9, B10	A1, A3, A4, A5 A7		2. Medical Protozoology
D2,D3, D4, D5	C2, C4, C5	B1, B2, B3, B5, B7, B8,	A2, A3, A5,A7		3. Medical Entomology
D3, D4, D5,D6	C4,C5	B5, B7, B8,B9,B10	A1, A4, A5,A8		4. Immunity to Parasites
D2,D3, D4, D5,D6	C1, C3, C5	B1,B3, B4, B5, B6, B7,B8,B9,B10	A1, A5,A6,A7		5. Laboratory techniques

B. 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	B1,2, 3,4,5,6,7,8,9,10		
Self directed training			C1,C2,C3, C4,C5	D1,D2,D3, D4,D5,D6
Presentation/seminar				D1,D2,D3, D4,D5,D6,
Thesis discussion			C2,C5	D1,2,3,4
Training courses & workshops			C1,C2,C3 ,C4,C5	D1,D2,D3,D4, D5,D6

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,A2,A3,A4, A5,A6,A7,A8	B1,B2,B3,B4,B5 B6,B7,B8,B9,B10		
Practical exam (OSPE)			C1,C2,C3,C4,C5	D2,D3,D4, D5
Oral Exam	A1,A2,A3,A4,A5	B1, B2,B5, B6,B7,B8,B10		D1,D2,D3,D4,D5,D6 ,D6



D- Matrix of comparison between program ILOs and course ILOs.

Program ILOs	Course ILOs
A-Knowledge and understanding:	**A-Knowledge and understanding:**
A.1. Discuss the basic and updated knowledge of Medical Parasitology, infectious diseases epidemiology, immunology, and molecular biology.	A1-Recognize recent scientific data about morphological characteristics and other biological aspects of medically important parasites (Protozoa and Helminths).
A.2. Define all aspects of medical research methodology and follow the ethics of medical research in Medical Parasitology.	A2-Recognize biological aspects, the molecular biology and behavior of medically important vectors.
A. 3. Mention the ethical and medicolegal principles which are relevant to Medical Parasitology practice.	A3- Recognize updated geographical distribution of important parasites and explain the environmental factors determining such distribution.
A. 4. List all steps of quality assurance and quality control in medical parasitology teaching and laboratory work.	A4-Discuss pathogenesis and associated clinical manifestations of parasitic infections.
A. 5. Outline the pattern of disease occurrence, infectious cycle, preventive and control measures, immunization, surveillance system, investigation of an epidemic and nosocomial infection.	A5-Describe the pattern of disease occurrence, infectious cycle, preventive and control measures, immunization, surveillance system, investigation of an epidemic and endemic parasitological diseases.
	A6- Identify ethical and medico-legal principles in obtaining samples from patients.

	A7-Identify all steps of quality assurance and quality control in teaching and laboratory safety. A8-Discuss genomic basis to complex disease mechanisms e.g. antigenic variation in *Trypanosoma* and *Leishmania* parasites.
B- Intellectual Skills:	
B. 1. Analyze and correlate data of relevant basic and other sciences.	B1-Analysis and evaluation of published data related to medical parasitology research.
B.2. Interpret available data for solving problems in Medical Parasitology	B2-Interpret available data for solving problems and overcomes obstacles
B.3. Plan a laboratory or field based research project.	B3-Design a laboratory or field-based research project.
B4. Write and publish scientific papers in Medical Parasitology.	B4-Write and publish scientific papers in Medical Parasitology
B. 5. Assess the risk of major parasitic diseases to develop a control plan for each one.	B5-Assess the risk of major parasitic diseases to develop a control plan for each
B6. Categorize all hazards associated with laboratory activities	B6-Assess all hazards associated with laboratory activities
B.7. Plan for performance improvement in the field of Medical Parasitology.	B7-Plan for performance Improvement in the field of Medical Parasitology.
B.8. Make professional decision in various professional situations in Medical Parasitology.	B8-Make professional decision in various professional situations in Medical Parasitology.
B.9. Organize and plan for active participation in research for discovery of new therapy or diagnostic techniques	B9-Organize and plan for active participation in research for discovery of new therapy or diagnostic techniques.

B.10. Apply evidence-based strategies during lectures of Medical Parasitology	B10-Use Evidence-based strategies during discussion and presentation of scientific data in conference and workshops.
C. Professional & Practical skills	
C.1. Perform the basic and advanced molecular techniques as molecular amplification, sequencing methods and digital PCR.	C1- Perform basic and advanced molecular diagnostic techniques amplification, sequencing methods, and PCR.
C. 2. Interpret and evaluate medical parasitological reports	C2-Write and evaluate Medical Parasitological reports
C.3. Judge and estimate the laboratory tests available in the department lab.	C3-Evaluate laboratory tests available in the department lab
C4. Reframe the available molecular tests.	C4-Use the latest functional genomic and proteomic techniques to understand the basic biology of medically important parasites.
C.5. Use digital technology in teaching Medical parasitology and in Medical Parasitology research	C5-Outline professional development plan for himself and assess the performance of his students and peer colleges.
C.6. Plan for his professional development and assess the performance of his students and peer colleges.	
C7.Judge and mark the performance of the other students.	
D. General & Transferable Skills:	

D1. Estimate, explain and interpret the competently information technology to improve the parasitological professional scientific practice.	D1-Communicate with others in many ways, including verbal communication, documentation, presentations, and emails.
D.2. Select which type of information technology suitable in the field of Medical Parasitology practice.	D2-Use and integrate of information technology in teaching others, in research and in his professional development (join online conferences and enroll online interactive educational courses).
D.3. Determine and select the method used for evaluation	D3-Demonstrate effective teaching skills and evaluating others techniques
D.4.Judge and mark the performance of the other students.	D4-Use physical information resources (print, analog), online (electronic, digital,) text, audio-video, book and journal to address medical questions and knowledge to sustain professional growth
D.5. Discuss and appraise his personal learning needs.	D5-Work effectively in a group and collaborate with others toward a common goal
D.6. Determine, evaluate and estimate all the available sources of information in the field of Medical Parasitology.	D6-Manage of scientific meetings and manage Time effectively.
. D.7. Interpret and prove the benefit of teamwork.	
D.8. Support and award a leadership skill in the learning process and providing health care for the environment.	
D.9. Justify and judge the time well during the learning process.	

Test blueprint for 2nd part of MD degree of Medical Parasitlolgy department

Topic	Hours	% of topic	Written exam(200 marks) knowledge, Intellectual		Mark	Modified mark
Introduction	3	2.34%			4.68	5
Helminthes	43	33.59%	6	4	67.18	67
Protozoa	30	23.44%	6	4	46.88	47
entomology	30	23.44%	6	4	46.88	47
Immunology	12	9.38%	6	4	18.76	18
Laboratory techniques	10	7.81%	6	4	15.62	16
total	128	100%				200