PROGRAM SPECIFICATION

Master degree of Medical Parasitology (PAR 508)

Faculty of Medicine– Mansoura University

(A) Administrative information

(1) Program Title & Code	**Postgraduate Master degree of Medical Parasitology (PAR 508)**
(2) Final award/degree	**Ms.c**
(3) Department (s)	**Department of Medical Parasitology**
(4) Coordinator	Dr. Manar Sobh Azab
(5) External evaluator (s)	**Prof. Dr. sherif Abaza** **Suez Canal University**
(6) Date of approval by the Department's council	**9-5-2016**
(7) Date of last approval of program specification by Faculty council	9-8-2016

(B) Professional information

(1) Program Aims:

The program is directed towards provision of:

1. Realization of relationships between microbial pathogens and their human hosts, immunological nature of host defense systems against environmental insults and role of microbial genetics in development in the field of medicine.
2. Means of disease diagnosis by examining and testing cells, body fluids and tissues, and quality control procedures.
3. Information on biomolecules fundamental to all biological processes, and principles and applications of DNA amplification techniques.
4. Knowledge of prevalent communicable diseases and fundamentals of research methodology and data management.
5. Fundamentals of basic parasitic immunology, host manipulation.
6. Helminthic therapy; rationale and applications, and scope of apoptosis and autophagy in parasitic diseases.
7. A range of laboratory techniques developed to diagnose and/or treat parasites.
8. Knowledge about parasites of medical significance; directed to morphological characters and biology.
9. Explicit parasite pathogenic potential and channels to conduct proper management and control of ensuing medical problems.
10. Emphasis on host parasite interaction in opportunistic, nosocomial and zoonotic infections.

(2) Intended Learning Outcomes (ILOs):

(3) A- Knowledge and Understanding (Appendix I)

a.1. Recognize the basic features of general bacteriology, virology and mycology.

a.2. Recognize the immune system and its protective functions.

a.3. Recognize the role of immune system in the patho-physiology of infectious and non- infectious diseases.

a.4. Recognize common infections and diseases of medical importance.

a.5. Discuss microbial genetics, advance in the field and the impact of molecular technology in microbiology and immunology.

a.6. Discuss biochemichal assesment of organ based pathophysiology.

a.7. Recognize established and recent information on blood cells.

a.8. Discuss utility of body fluid analysis and urinalysis.

a.9. Demonstrate knowledge of quality control**.**

a.10. Describe the mechanism of action of major classes of antimicrobial agents used to treat bacterial, viral, fungal and parasitic infections.

a.11. Gain knowledge about minerals and their role in body metabolism.

a.12. Recognize enzyme chemistry, action and regulation.

a.13. Describe the chemistry of nucleic acids.

a14. Identifies recombinant DNA bio-techniques.

a.15. Point out pathological aspects of carbohydrates metabolism and their clinical importance.

a.16. Recognize research methodology and data management.

a.17. Recognize the etiology, pathogenesis, clinical features, diagnosis and complications of prevalent communicable diseases.

a.18. Recognize regulatory immune responses induced to enhance or defeat parasitic infections.

a.19. Identify host-parasite interaction, how parasites harm their hosts.

a.20. Point out applications of parasitic therapy.

a.21. Recognize the role of apoptosis and autophagy in parasitic diseases.

a.22. Recognize techniques used to diagnose or treat parasitic diseases.

a.23. Describe the morphological characteristics of classes of parasites.

a.24. Recognize parasite geographical distribution and Parasite biology.

a.25. Illustrate management of diseases caused by parasites.

a.26. Explain host parasite interaction in opportunistic, nosocomial and zoonotic infections.

Appendix I

ILOs/aims	1	2	3	4	5	6	7	8	9	10
a1	•									
a2	•									
a3	•									
a4	•									
a5	•									
a6		•								
a7		•								
a8		•								
a9		•								
a10		•								
a11			•							
a12			•							
a13			•							
a14			•							
a15			•							
a16				•						
a17				•						
a18					•					
a19					•					
a20						•				
a21						•				
a22							•			

a23								•		
a24								•		
a25									•	
a26										•

B– Intellectual skills (Appendix II)

The Postgraduate Degree provides opportunities for candidates to achieve and demonstrate the following intellectual qualities:

b.1. Analyze clinical and investigational data to develop skill of logic reasoning for clinical problem solving.

b.2. Formulate a systematic approach for laboratory diagnosis of common infectious clinical conditions.

b.3. Select the most appropriate tool to the identification of the causative organism.

b.4. Evaluate according to evidence the causal relationship of microbes and diseases.

b.5. Formulate an approach for control of infectious diseases.

b.6. Evaluate procedures of good quality sampling.

b.7. Predict the clinical significances of some enzymatic reactions and kinetics.

b.8. Analyze the applications of molecular biology in basic and clinical sciences.

b.9. Predict clinical significance of determination of plasma levels of glucose and some enzymes.

b.10. Analyze and evaluate information and data in the field of public health and community medicine and interpret data in accordance.

b.11. Analyze basic parasite immune evasion strategies and host manipulation.
b.12. Interpret parasitic adaptation to host.
b.13. Analyze rationale for helminth therapy.

Appendix II

ILOs/ aim	1	2	3	4	5	6	7	8	9	10
b1	•	•	•				•	•	•	•
b2	•						•	•	•	•
b3	•						•	•	•	•
b4	•				•				•	•
b5		•		•				•	•	•
b6		•								
b7			•							
b8			•				•			
b9			•							
b10				•						
b11					•					
b12						•	•			
b13						•				

C– Professional/practical skills (Appendix III)

The Postgraduate Degree provides opportunities for candidates to demonstrate the following professional/practical skills:

c.1. Identify medically important pathogen based on microscopic examination.

c.2. Prepare mounted slides and identify their content using a microscope.

c.3. Conduct serological tests and distinguish positive and negative results.

c.4. Implement quality assurance roles during examination of different samples.

c.5. Examine laboratory specimens (urine, sputum).

c.6. Biochemical testing for blood glucose, liver and kidney function.

c.7. Perform the technique of lymphocyte separation.

c.8. Perform complete blood counting (CBC) and interpret results.

c.9. Do extraction of deoxyribonucleic acid (DNA).

c.10 . Comment on a research design.

c.11. Report correctly on the results of different parasitological diagnostic methods.

Appendix III

ILOs/aims	1	2	3	4	5	6	7	8	9	10
c1	•				-------	------	------	•		-----
c2	•	•						•		
c3	•	•							•	
c4	•							•	•	
c5		•	•							
c6		•	•							
c7		•								
c8		•								
c9			•							
c10				•						
c11								•		

D- Communication & Transferable skills (Appendix IV)

The Postgraduate Degree provides the opportunity to demonstrate the following transferable skills:

d.1. Establish a concise scientific activity according to standard scientific thinking and integrity.

d.2. Work productively in a team.

d.3. Able to react positively with health care professionals, the national campaigns and health authorities which are conducted to infection control practice.

Appendix IV

ILOs/aims	1	2	3	4	5	6	7	8	9	10
d1	•	•	•	•	------	-----	------	•	•	------

d2	•	•	•	•				•	•	
d3	•	•	•	•				•	•	

(4) Academic standards:

3.a- External reference points/benchmarks are selected to confirm the appropriateness of the objectives, ILOs and structure of assessment of the program:

Liverpool School of Tropical Medicine (Control of Parasites and Disease Vectors)
http://www.lstmed.ac.uk/study/courses/biology-and-control-of-parasites-and-disease-vectors

3.b- Comparison of the specification to the selected external reference/ benchmark:

- All program aims of the Benchmarks are covered by the current program.
- The program courses are matched by 50% degree to those offered by Liverpool School of Tropical Medicine except in the context of credit hours, and the type of degree offered.

A table of comparison between ARS, NARS, program ILOs is attached.

(5) Curriculum structure and contents:

4.a- Duration of the program (in years or months): 4 semesters

4.b- program structure:

*The program consists of two parts;

The first part:

Compulsory course: Microbiology

Selective course: the candidate select one course from any of the 3 courses listed below:

- **Clinical Pathology**
- **Biochemistry**
- **Public Health**

The second part :

Compulsory course: Medical Parasitology.

Selective course: the candidate selects one from the following 2 courses:

1- Laboratory diagnostic techniques

2- Immunology of parasitic diseases

4.c- program structure:

Candidates should fulfill a total of 45 credit hours.

●4.c.1: Number of credit hours:

First part: 8 credit hours Second part: 15 credit hours. Thesis:10 credit hours.

Activities including practical and the log book: 10 credit hours.

Other activities : 2 credit hours.

●4.c.2: Teaching hours/week:

First part: (8 credit hours)

Compulsory course: Lectures: 3 hours/week. Practical: 1hours/week

Total credit: (4 hours /week).

Elective course: Lectures: 3 hour/week . Practical: 1hours/week.

Total credit: (4 hours /week)

Second part: (15 credit hours.)

Elective course: Lectures: 2 hours/week.

*Compulsory course: lectures: 13 hours/week. Practical: 10 hours/week

(6) Program courses:

First part

a- Compulsory courses: microbiology

Course Title	Course Code	NO. of credit hours per week				Total teaching hours/15week	Program ILOs covered (referring to matrix)
		Theoretical Lectures	Laboratory/ Practical	Field	Total		
Microbiology	PAR 507	3	1		4	45 lectures 30 practical	a1-5, b1-4, c1-4 , d1-3

b- Elective courses: one of the following courses

Course Title	Course Code	NO. of credit hours per week				Total teaching hours/15week	Program ILOs covered (REFERRING TO MATRIX)
		Theoretical Lectures	Laboratory /practical	Field	Total		
Clinical Pathology	PAR 530	3hours	1		4	45 lectures 30 practical	a2,a6-10, b1,b5-6, c2,3,5-8,d1-3
Biochemistry	PAR 504	3hours	1		4	45 lectures 30 practical	a11-15, b1,7-9, c5,6,9,d1-3
Public Health	PAR 518	3hours	1		4	45 lectures 30 practical	a16,17,b5,10, c10, d1-3

Second part

Course Title	Course Code	NO. of teaching hours per week			Total teaching hours/15weeks	Program ILOs covered (referring to matrix)
		Theoretical Lectures	Laboratory practical	Total		
1-Compulsory course: Medical Parasitology.	**PAR 508**	**13**	**10**	**23**	**Lectures: 195 Practical: 300**	**a19,a23-a25 -26 b1-5 C1,2,3,4,11 d1-3**
2- Elective course: *Immunology of parasitic diseases	PAR 508 IMP	**2**	----------	**2**	**Lectures:30**	**a2,18-21 b4,11-13**
*** Laboratory diagnostic techniques**	PAR 508 LAB	**2**	----------	**2**	**Lecture:30**	**a22 b1-3,b8**
Total					**Lecture:195**	
Practical	PAR 508 P				**300**	**c1-4,c11**
Thesis						**A16-b2-13 c1-11 d1-3**
Log book & activities						

Assessment tool:

First part: a- Compulsory course:

(Microbiology and Immunology PAR 507)

Tools	Marks	Percentage of the total mark
Written exam	72	60%
MCQ	18	
Structured Oral exam	30	20%
OSPE Practical exam	30	20%
Total	150	

b- Elective course: one of the following courses:

- Clinical Pathology (PAR 530)
- Biochemistry and Molecular Biology (PAR504)
- Public health and Community Medicine (PAR518)

Tools	Marks	Percentage of the total mark
Written exam	72	60%
MCQ	18	
Structured Oral exam	30	20%
OSPE Practical exam	30	20%
Total	150	

Second part: a- Elective course: one of the following courses

- Immunology of parasitic diseases (PAR 508 IMP)
- Laboratory diagnostic techniques (PAR 508 LAB)

Tools	Marks	Percentage of the total mark
Continuous assessment (MCQ)	20	20
Written exam	80	80

Total	100

b- Compulsory course: Medical Parasitology (PAR 508)

Tools	Marks	Percentage of the total mark
Continuous assessment (MCQ)	72	60%
Written exam	288 (2 written exams 144 Marks each)	
Structured oral exam	120	20%
OSPE	120	20%
Total	600	

(7) Program-Courses ILOs Matrix

A- Knowledge and Understanding:

Course Title/Code	a1	a2	a3	a4	a5	a6	a7	a8	a9	a10	a11	a12	a13	a14	a15	a16	a17	a18	a19	a20	a21	a22	a23	a24	a25	a26
***Microbiology/PAR 507**	•	•	•	•	•																					
***Clinical Pathology/ PAR 530**		•				•	•	•	•	•																
***Biochemistry/PAR 504**											•	•	•	•	•											
***Public Health /PAR 518**																•	•									
***Medical Parasitology/ PAR508**																			•	•	•	•	•	•	•	•
***Immunology of parasitic diseases/ PAR 508 IMP**		•																•	•	•	•					
Lab diagnostic techniques/ PAR 508 LAB																						•				
***Thesis**																•										

Program–Courses ILOs Matrix

B– Intellectual Skills. C– Professiona/ Practical skills. D– Communication and transferable skills.

Course Title/Code	b1	b2	b3	b4	b5	b6	b7	b8	b9	b10	b11	b12	b13	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	d1	d2	d3
***Microbiology/PAR507**	•	•	•	•										•	•	•	•								•	•	•
***Clinical Pathology/PAR530**	•				•	•									•	•		•	•	•	•				•	•	•
***Biochemistry/PAR504**	•						•	•	•									•	•			•			•	•	•
***Public Health /PAR518**					•					•													•		•	•	•
***Medical Parasitology/ PAR 508**	•	•	•	•	•	•								•	•	•	•							•	•	•	•
***Immunology of parasitic diseases/ PAR 508 IMP**				•							•	•	•														
***Lab diagnostic techniques/PAR 508 LAB**	•	•	•					•																			
***Thesis**		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

(8) Program admission requirements:

- **General requirements:**

According to the faculty postgraduate by laws.

- **Specific requirements (if applicable):**

No specific requirements

(9) Regulations for progression and program completion:

- Student must complete minimum of 45 credit hours in order to obtain the Master degree, which include the courses of first and second parts, thesis and activities of the log book.
- Registration for the master thesis is allowed one semester from the day of registration to the program and must fulfill a total of 10 credit hours including material collection, laboratory work, patients follow-up, and meetings with supervisors.

Log book fulfillment:

- Student must fulfill a minimum of 70% of log book activities including, laboratory work in Parasitology, slide preparations and conferences attendance or speaking.
- Lectures and seminars of the previously described courses must be documented in the log book and signed by the lecturer.
- Works related to thesis must be documented in the log book and signed by the supervisors.
- Any workshops, conferences and scientific meetings should be included in the log book.

(9) Evaluation of Program's intended learning outcomes (ILOs):

Evaluator	Tools*	Sample size
Internal evaluator (s) **Internal evaluator (s)** **1-Prof. Aya ElSayed Handoussa** **2-Prof. Hala Ahmed ElNahas** **3-Prof. Manar Sobh Azab**	Focus group discussion Meetings	
External Evaluator (s) **1. Prof. Sherif Abaza** **(Suez Canal University)**	Reviewing according to external evaluator checklist report.	
Senior student (s) Dr. elham farag Dr. wlaaa abdel aziz	**COMMUNICATION**	
Alumni	None	
Stakeholder (s)	None	
Others	None	

* TOOLS= QUESTIONNAIRE, INTERVIEW, WORKSHOP, COMMUNICATION, E_MAIL

We certify that all information required to deliver this program is contained in the above specification and will be implemented. All course specification for this program is in place.	
Program coordinator: **Name: Dr. Manar Sobh Azab**	Signature & date:
Dean: Name: **Prof. Dr. Saed Abdelhady**	Signature & date:
Executive director of the quality assurance unit: Name: **Prof. Dr. Seham Gad EL-Hak**	Signature & date: