



Program Specification for M.D Degree in Medical Parasitology

Program type: single

Department offering the program: Medical Parasitology

Program Code: 905

Total Credit points: 240 (140 MSc + 100)

Academic year: 2015/2016

Date of specification approval: July 2015

Program coordinators: Prof. Dr. Maysa Kamel- Prof. Dr. Maha El-Arousy

External Evaluator: Prof. dr. Nashaat El-Sayed Nasef (Prof. of Parasitology Monofeya University)

I. Aim of the program:

To provide professional development by applying specialized modules which allow students to enter a range of parasitological fields extending from biological aspects to clinical and immunological parasitological aspects and applied basic researches to higher degree studies and academic/teaching-related levels, taking in to consideration the global standards for academic accreditation.

II. Intended learning outcomes:

A. Knowledge and understanding: By the end of the program the candidate should be able to:

- 1) Distinguish the recent scientific data related to biological aspect of the parasites.
- 2) Describe recent theories or strategies as regards the pathogenesis and subsequent clinical manifestations of different parasitic diseases.
- 3) Point out the recent immunological responses and the possible dynamics of immune protective mechanisms.
- 4) Distinguish the different immune responses; whether balanced or modulated comparing the mechanisms used by parasites to evade the immune response.
- 5) Explain the host – parasite interaction and different outcomes (e.g. histopathological, biochemical, immunological, molecular or genetic.....etc)
- 6) Recognize the key aspects of vector behaviour, vector ecology and vector-parasite interactions and demonstrate an understanding of how these features impact the epidemiology and control of vector-borne diseases.
- 7) Describe the application and evaluation of advanced parasitological techniques, whether diagnostic or for research purposes.
- 8) Identify the important ultra structures of some parasites of great medical importance in our country and neighboring areas (e.g. Schistosoma, tissue nematodes, Leishmania, malaria ...etc)

- 9) Recognize the importance of ultra structures for understanding biological life of the parasites
- 10) Demonstrate the factors determining the temporal, spatial and social distributions of parasitic diseases.
- 11) Recognize the methods and concepts of incubation periods, epidemic patterns, modes of transmission, transmission dynamics, measures of infectiousness, and sero-epidemiology.

B. Intellectual skills: By the end of the program the candidates should be able to:

- 1) Analyze the data of real life stories (case scenarios) concerning history, clinical examination and investigational data into meaningful diagnostic formulation.
- 2) Evaluate how parasitic infections can bias the nature of the immune response to subsequent infections.
- 3) Apply basic epidemiological and statistical principles to the critical interpretation of parasitological studies.
- 4) Assess with justification the main areas of research interest in a particular subject, in addition to designing and interpreting multivariable analysis models.
- 5) Recommend the suitable methods and appropriate laboratory techniques for a proposed scientific research.
- 6) Interpret concurrent knowledge and skills required to stay up to date with scientific literature in order to generate a scientific research project

C. Professional and practical skills: By the end of the program the candidates should be able to:

- 1) Diagnose the various parasite stages both free and in tissues and to report properly positive findings in different samples.
- 2) Perform laboratory or field based research projects with minimal supervision, taking in to consideration critical analysis and interpretation of data.
- 3) Prepare a written report on scientific information and findings including a critical literature review of relevant scientific publications.
- 4) Internalize the potential benefits and difficulties of laboratory work in molecular biology, based on practical training experience.
- 5) Integrate the molecular biological strategies & designs as applied to epidemiological investigations, clinical diagnosis or fundamental research on parasitic diseases.

D. General and transferable skills: By the end of the program the candidates should be able to:

- 1) Integrate scientific information effectively using a variety of techniques including oral presentation, poster presentation and responding to oral questioning.
- 2) Emulate a range of practical techniques and tools used in teaching or research on different areas of Parasitology field.
- 3) Reflect provisional recommendations, based on scientific evidence, about the appropriateness and cost-effectiveness of particular diagnostic methods.

- 4) Apply the institutional code of conduct & the role of staff and co-staff members regardless of degree or occupations.

III. Academic standards

1. Academic reference standards: The academic standards of Parasitology program is adopted and accredited by the departmental council

2. External References for Standards:

This program is unique since it incorporated different topics from different disciplines.

IV. Program Admission Requirements

General entrance requirements

Admission must normally satisfy Cairo University general entrance requirements. According to the Faculty of Medicine, Cairo University Bylaws for Postgraduate Programs, applicants should have Master degree in the same specialty of at least good grade. Admission to the program is open during January and July.

V. Program Structure and Contents

Program duration: 2 years

Program structure:

- **2 years - 100credit points**
- **Compulsory courses:** two academic years (30 weeks each) **18 credit points**
 1. Helminthology 5 credit points
 2. Entomology 5 credit points
 3. Protozoology 4 credit points
 4. Immuno & molecular parasitology 4 credit points
- **Elective courses** (1 credit points for each course):
2 courses are chosen for a total of 2 credit points
 5. Ultra structure of Helminthes 1 credit point
 6. Ultra structure of protozoa 1 credit point
 7. Epidemiology & Control of parasitic Diseases 1 credit point
- **Scientific activities 4credit points**
- **Advanced practical training program (Phase 3 or C) 36 credit points (choose 2 programs)**
 - a- Design and Analysis of Epidemiological Studies 6 credit points
 - b- Advanced Training in diagnostic and Molecular technology 6 credit points
 - c- Parasitological Diagnostic methods 6 credit points
 - d- Lab. Works + preparation & Teaching skills 18 credit points
- **MD Thesis: 40 credit points**

Table 1

Courses		Credit Points		ILOs
Title	Code	CPs	Total	
COMPULSORY COURSES				
a- Helminthology	PARA 905 Ta	5	18	A (1-2-5) B (1-2-3-4-65-) C (1) D(1-2-3-4)
b- Arthropods	PARA 905 Tb	5		A (1-6) B (1-3-4-5-6) C (1) D(1-2-3-4)
c- Protozoa	PARA 905 Tc	4		A (1-2-5) B(1-2-3-4-56-) C (1) D(1-2-3-4)
d- Immunology of parasitic disease and molecular Parasitology	PARA 905 Td	4		A (3-4) B (4-5-6) C (4-5) D(1-2-3-4)
ELECTIVE COURSES				
Ultra structure of Helminthes	PARA 905 UH	1	2	A (8-9) B (4-5-6) C (2-3) D(4)
Ultra structure of protozoa	PARA 905UP	1		A (8-9) B (4-5-6) C (2-3) D(4)
Epidemiology of parasitic Diseases	PARA 905 EP	1		A (11-12) B (4-5-6) C (2-3-5) D(4)
TRAINING PROGRAMS				
Design and Analysis of Epidemiological Studies		6	36	A (-7-10-11) B (3-4-5-6) C (2-3-4-5) D(1-2-3-4)
Advanced Training in diagnostic and Molecular technology		6		
Parasitological Diagnostic methods		6		
Lab. Works + preparation & Teaching skills		18		
THESIS			40	B(3) C (2-3) D(1-2-3-4)
SCIENTIFIC ACTIVITIES				
Seminars, workshops, thesis discussions, routine practical work, departmental duties			4	A(1 to 12)B (6) C (2-3) D(1-2-3-4)

Credit points and learning hours:

The credit points assigned to each module or unit are based on the approximate number of hours. The student is expected to spend hours of learning to achieve the learning outcomes for that module. There is a broad agreement amongst Cairo University departments that one credit point represents 15 hours of learning. Teaching strategy depends on calculated total learning hours. Total learning hours include contact time (theoretical lectures, practical sessions and the completion of formative assessment tasks and revision) plus self learning (private reading and study). Therefore, learning hours of each module are determined according to the proposed ILOs of each module.

Facilities required for teaching and learning:

List of references

- Course notes
- Essential books (text books):
- **Manson's Tropical Diseases.** 23rd Edition. Saunders Elsevier Press.
Authors: Farrar, J.; Hotez, P.; Junghanss, T.; Kang, G.; Lalloo, D. and White, N. J.
- **Topley and Wilson's Microbiology and Microbial Infections, Parasitology.** 10th Edition. Hodder Arnold, ASM Press.
Authors: Cox, F. E. G.; Wakelin, D.; Gillespie, S. H. and Despommier, D. D.
- **Foundations of Parasitology.** 8th Edition. McGraw-Hill Press.
Authors: Schmidt, G. D. & Roberts, L. S.

Thesis:

All MD degree students should prepare a thesis in Medical Parasitology. The research and ethical committees of the Faculty of Medicine and that of the Parasitology Department must approve the protocol of the research. The thesis should include a review part and a research part. The thesis is supervised by one or more senior staff members and may include other specialties according to the nature of the research. The thesis will be accepted for discussion after approval of department council. The thesis should be evaluated and approved by a committee of three professors including one of the supervisors and an external professor.

Scientific Activities:

The candidates should participate in the scientific activities of the department such as:

- Seminars (including recent topics and controversial issues).
- Journal clubs (presenting scientific articles).
- Scientific meetings.
- Workshops.
- Conferences.
- Thesis discussions.
- Routine practical work
- Departmental duties

Each activity is monitored and given credit points registered in a special section in the logbook. Candidates should collect the required points before being allowed to sit for final exam.

VI. Regulations for Progression and Program Completion

After collecting the required credit points for the respective courses, the advanced practical training, the scientific activities, and the thesis, the student will be eligible to sit for the final examination. In case the student fails to pass the examination, he/she may resubmit for the next examination. The candidate will receive his/her degree

after passing this final examination. MD degree should be obtained within a maximum of 6 years after registration date.

VII. Assessment

A: Assessment Tools

- **Supervision and Monitoring of Training Program**

According to the Faculty of Medicine, Cairo University Bylaws for Practical Training Programs, professors carry continuous assessment during the program. A practical training program logbook will be kept for each candidate to document all his/her practical activities as well as his/her participation in different scientific activities. The head of the department should allow the candidates to undergo the final examination when they complete their training program and collect the credit points needed.

- **Formal Assessment**

According to the Faculty of Medicine, Cairo University Bylaws for Postgraduate Programs, students should be assessed at the end of the program by **Written, Practical and Oral Exams**

B: Assessment Schedule:

Four final exams by the end of the course after acceptance of the thesis

For compulsory courses 2 written exams of 3 hours duration each on 2 days:

- Helminthology and Entomology
- Protozoology and immune and molecular parasitology

The written examination followed by oral and practical exam

For elective courses 2 written exams of one hour duration each in 2 days:

C: Weighing Of Assessment (Marks allocated to courses):

(50 marks for each credit point)

Remarks

Courses		Marks			
Code	Title	Written	Oral	Practical	Total
Para 905 Ta	Helminthology	300	100	100	500
Para 905 Tb	Entomology				
Para 905 Tc	Protozoology	200	100	100	400
Para 905 Td	Immuno and molecular parasitology				
Para 905 ECPD	Epidemiology & Control of Parasitic Diseases	50 + 50	-	-	100
PARA 905 UH	Ultra structure of Helminthes				
PARA 905 UP	Ultra structure of Protozoa				
Total					1000

- It is mandatory to pass all the papers of written exams separately.
- The passing mark in any written exam is $\geq 60\%$.

VIII. Evaluation of Program Intended Learning Outcomes

Evaluator	Tool	Sample
1. Senior Students	Questionnaire at the end of the program	All the PG students
2. Alumni	The faculty is currently developing an Alumni office for postgraduates	Not yet determined
3. Stakeholders	A meeting will be arranged during annual conference of the department	Available representatives from: <ul style="list-style-type: none"> - Army hospitals - National medical insurance - Medical syndicate - Ministry of health
4. External Evaluators	Review program and courses Attending the final exam	Once before implementation Bi-annual report
5. College Quality Assurance committee	Annual program reviewer	

Signatures

Program Coordinator

Prof. Dr. Maysa Kamel
Prof. Dr. Maha El-Arousy

Head of Department

Prof. Dr. Mona Mahmoud

