Program Specification for Diploma Degree in Parasitology

Code: 1707600

University: Alexandria **Faculty:** Medical Research Institute

Program Specification

A- Basic information

1- Program title: Diploma in Experimental and Medical parasitology

2- Program type: **single** [√] **double** [ ] **multiple** [ ]

3- Department(s) : Parasitology Department

4- Coordinator: Ass. Prof. Dr. Naglaa Fathi

5- External evaluator(s): Prof Dr: Thanaa Elmasry , Parasitology Department , High Institute of Public Health , Alexandria University

6- Last date of program specification approval: 5/6/2014

B- Professional Information

1- Program aims:

By the end of the programme the students should:

1- Recognize the multifaceted nature of parasitology with emphasis on morphology, habitat, life cycles and mode of infection of parasites.

2-Provide knowledge about helminthic and protozoal parasitic diseases.

3- Recognize the importance of arthropods as causative agents and vectors of diseases.

4- Recognize the clinical significance of parasites in humans including the potential interaction between infection with specific parasites and other agents.

5- Provide practical and clinical skills as regards diagnosis and management of parasitic diseases.

6-Describe various conventional diagnostic techniques for recognition of different parasitic infections.

7-Discuss the basic concepts of immunology and identify its role in diagnosis and recognition of different parasitological diseases.

8- Provide basic knowledge on currently used antiparasitic drugs and recognize clinical pharmacology and chemotherapeutic response of each.

9- List different culture methods as tools of investigating various aspects of parasitology.

10-Recall the different tools of quality control and its application in diagnosis of parasitic diseases.

11-Learn to apply surveillance data of different parasites in various practical settings.

12- Provide guidelines for care and use of experimental animals in lab and identify role of EM in detecting changes in habitats of different parasitic diseases.

13- Use information technology to improve professional practice and communicate efficiently with colleagues

2- Intended learning outcomes (ILOS)

a- knowledge and understanding:

a1- Recall morphological features ,different hosts, life cycle, mode of transmission of helminthes.

a2- Recall morphological features ,different hosts, life cycle, mode of transmission of protozoa

a3- Describe the clinical manifestations and health consequences of different parasitic diseases.

a4-List parasitic causes of different gastro intestinal, haematological and nutritional manifestations.

a5- Describe immunological methods used in diagnosis of parasitic infections

a6-Discuss basic principles of immunology and its applications in diagnosis of a selected group of parasites.

a7-Define in vivo methods for cultivation of parasites.

a8-List arthropods and snails of medical importance and explain their role as causative agents and vectors of some parasitic diseases.

a9- Recall the importance of parasitological laboratory techniques regarding sample collection, preparation, transportation and procedural application.

a10- Explain therapeutic responses of different antiparasitic drugs.

a11- Recall the tools of quality control and its application in the diagnosis of different parasitic diseases.

a12- Define structural components of various parasites using E.M.

a13- Explain methods and measures adopted in case detection and surveying parasites.

a14- Define different types of experimental laboratory animals explaining their biology , handling , housing and feeding.

b- Intellectual skills:

b1- Analyze transmission and spread of helminths in different localities.

b2- Evaluate the spread of some protozoa and arthropods in certain localities.

b3- Analyze the impact of parasitic infections in tropical diseases and their effect on different body systems.

b4- Relate abnormal clinical and laboratory findings of different parasitic diseases.

b5-Evaluate different parasitological lab techniques and analyze the results.

b6- Demonstrate various immunological techniques and learn to interpret their results.

b7- Employ different quality control measures that add to the specialty.

b8- Apply the basic concepts of immunoparasitology in diagnosis.

b9- Analyze the contribution of parasitic infections to the burden of tropical diseases in terms of morbidity and mortality.

b10- Problem solving regarding management of parasitic diseases.

b11-Distinguish methods of collection , isolation and cultivation of parasites in laboratory animals.

b12-Illustrate the role of experimental animals attempting to understand host-parasite relationship.

b13- Relate the various methods used to study the ultrastructure of parasites.

b14- Interpret data collected in parasitological survey.

b15- Integrate findings and construct schemes concerning epidemiological surveys to solve problems related to parasitic diseases.

b16-Select appropriate conditions for maintenance of different snail in the laboratory.

c- professional and practical skills:

c1- Apply professional skills of blood, stool, urine and sputum sample collections, transportation and preparation.
c2- Learn to effectively diagnose different parasites using various diagnostic lab techniques(kato-katz, sedimentation concentration, floatation concentration,).
c3- Utilize basic parasitological laboratory equipment and methods and write reports.
c4-Develop the skill of using different stains to diagnose certain parasites.
c5- Design surveillance plan to study and control different parasites.
c6- Perform certain immunological techniques essential for diagnosis of different parasites (ELISA technique).
c7- Perform proper clinical examination of patients with suspected parasitic diseases and determine disease stage and complications.
c8- Collect and examine snails for trematode infection and use snails in research investigating snail transmitted parasites.
c9- Use experimental animals in research involving parasites (mice, rats).
c10- Diagnose parasitic and protozoan infections and identify the species of medically important.arthropods.
c11- Demonstrate the, pathogenesis, clinical presentation, complications, differential diagnosis, investigation and management of important endemic parasitic diseases in Egypt.

d- General and transferable skills:

d1- Develop skills in self appraisal and seek continuous learning
d2-Develop team work skills.
d3- Use information technology to improve professional practice and use different sources of information to obtain data.
d4- Develop skills in communication using all methods.
d5-Present clearly and effectively a scientific topic.

3- Academic standards

3a External references for standards (Benchmarks)

Generic Academic Reference Standards of the National Authority for Quality Assurance and Accreditation of Education (NAQAAE) adopted at MRI council 12/2/2014 and re-adopted at 15/1/2023

Last date of Academic Reference standards (ARS) approval by Institute Council: 15/1/2023

3b Comparison of provision to selected external references

Generic Academic Standards	ARS of Diploma of Parasitology
A1-Basic facts , theories, of the specialty and related subjects/ fields	**a1-** Identify morphological features, different hosts, life cycle, mode of transmission of helminths and protozoa **a2-** Describe the clinical manifestations and health consequences of different parasitic diseases. **a3-** Describe immunological methods used in diagnosis of parasitic infections **a4-**Define in vivo methods cultivation for parasites and list arthropods , snails of medical importance **a8-** Define structural components of various parasites using E.M
A4- Effect of the specialty practice on the environment including rules for	**a1-** Identify morphological features, different hosts, life cycle, mode of transmission of helminths and protozoa.

environmental conservation	**a2-** Describe the clinical manifestations and health consequences of different parasitic diseases.
A2-Fundamentals of ethical & legal practice	**a2-** Describe the clinical manifestations and health consequences of different parasitic diseases. **a5-** Understand the importance of adequate sample collection, preparation, transportation and procedural application. **a6-** Recognize appropriate therapeutic responses of different anti-parasitic drugs and define proper manipulation different types of experimental laboratory animals.
A3 -Quality standards of the practice	**a5-** Recognize the importance of parasitological laboratory techniques regarding sample collection, preparation, transportation and procedural application **a7-** Recall the tools of quality control and explain methods and measures adopted in case detection and surveying parasites.
B1 - Determine , analyze & prioritize problems	**b1-** Analyze transmission and spread of helminths, protozoa and arthropods in different localities. **b2-** Analyze the impact of parasitic infections and relate abnormal clinical and laboratory findings of different parasitic diseases. **b3-**Evaluate different parasitological lab techniques and analyze the results.
B2- Solve common problems effectively	**b7-** Integrate findings and construct schemes concerning epidemiological surveys to solve problems related to parasitic diseases and interpret data collected in parasitological survey.
B3- Critically appraise researches and articles	**b7-** Integrate findings and construct schemes concerning epidemiological surveys to solve problems related to parasitic diseases and interpret data collected in parasitological survey.
B4- Evaluate professional risks	**b4-** Demonstrate importance of various immunological techniques and learn to interpret their results adequately. **b5-**Distinguish methods of collection, isolation and cultivation of parasites in laboratory animals.
B5- Make decisions to solve professional problems according to available data	**b5-**Distinguish methods of collection, isolation and cultivation of parasites in laboratory animals. **b6-**Illustrate the role of experimental animals attempting to understand host-parasite relationship and select appropiate conditions for maintenance of different snail in the laboratory.
C1- Practice basic professional skills (clinical/practical & procedural skills) competently	**c4-** Perform proper clinical examination of patients with suspected parasitic diseases and determine disease stage and complications. **c5-** Collect and examine snails for trematode infection and use experimental animals in research involving parasites.
C2- Write reports related to the profession (Patient records, self appraisal/ audit reports etc...)	**c2-** Diagnose different parasites using various diagnostic lab techniques including certain immunological techniques.
D1- Communicate effectively using all methods	**d4-** Develop skills in communication using all methods
D2- Use information technology to improve his/her professional practice	**d3-** Use information technology to improve professional practice and use different sources of information to obtain data.
D3- Practice self appraisal and determines his learning needs	**d1-** Develop skills in self appraisal and seek continuous learning
D4- Use different sources of information to obtain data	**d3-** Use information technology to improve professional practice and use different sources of information to obtain data.

D5- Work in teams	**d2**-Develop team work skills.
D6- Manage time effectively	**d2**-Learn to manage time effectively.
D7- Work as team leader in situations comparable to his work level	**d2**-Develop team work skills.
D8- Learn independently and seek continuous learning	**d1**- Develop skills in self appraisal and seek continuous learning

4- curriculum structure and contents

4.a program duration: Minimum of 1 academic year.

4.b program structure :

4.b.i- No. of hours per week in each year/semester:

Semester	Core Courses	Elective Courses
	No. of hours	No. of hours
First semester	**13**	**2**
Second semester	**13**	**2**

4.b.ii- No. of credit hours	**Lectures**	**20**	**Practical**	**10**	**Total**	**30**	
	Compulsory	**26**	**Elective**	**4**	**Optional**	**-**	

4.b.iii- No. of credit hours of specialized courses	**No.**	**26**	**%** **86.7**
4.b.iv- No. of credit hours of other courses	**No.**	**4**	**%** **13.33**

4.b.v- Program levels (in credit-hours system) :N/A

5- Program Courses

5.1- Compulsory (26 credit hours)

Code No.	Course Title	No. of credit hours	No. of hours /week	
			Lecture	Practical
1707601	Parasitology (a)	**4**	**3**	**2**
1707602	Parasitology (b)	**4**	**3**	**2**
1707603	Clinical Parasitology (a)	**3**	**2**	**2**
1707604	Clinical Parasitology (b)	**3**	**2**	**2**
1707605	Diagnostic Parasitology (a)	**4**	**2**	**4**
1707606	Diagnostic Parasitology (b)	**4**	**2**	**4**
1707607	Treatment of Parasitic infections	**2**	**2**	**-**
1707609	Experimental Parasitology	**2**	**1**	**2**
Total		**26**	**17**	**18**

5.2- Elective I (4 credit hours)

Code No.	Course Title	No. of credit hours	No. of hours /week	
			Lecture	Practical
1707610	Immunology of parasitic infections (a)	**1**	**1**	**-**
1707611	Epidemiology of parasitic infections(a)	**1**	**1**	**-**
1707612	Field Studies	**1**	**1**	**-**
1707613	In vitro cultivation(a)	**1**	**1**	**-**
1707614	Quality control (a)	**1**	**1**	**-**
1707615	Electron microscopic studies of parasites (a)	**1**	**1**	**-**
1721620	Medical statistics	**1**	**1**	**-**
1707640	Fundamental in lab animal science	**2**	**1**	**2**

5.3- Elective II: (none)

5.4- Optional: (none)

6- Program admission requirements

- The students applying for diploma degree should have M. B. Ch. B. of Medicine.

Teaching hours for the programme

- In order to be granted the diploma degree, the student must fulfill and pass the specified number of credit hours for each course.

7- Teaching and Learning Methods

Lecture, Practical/Clinical, Brainstorming, Discussion Groups, Problem Solving, Case Study, Training Workshops, Self-Directed Learning.

8- Regulations for progression and program completion

For completion of the program to obtain the degree of Diploma in Experimental and Medical parasitology, the student must complete 30 credit hours with CGPA of at least C+.

9- Evaluation of Students enrolled in the program.

Tool evaluation	Intended learning outcomes being assessed
Written	ILOs a &b
Practical	ILOs c
Oral	ILOs a ,b &d
Semester Work	ILOs b & d

Evaluation of the Program

Evaluator	Tool	Sample
1- Senior students	questionnaire	At least 50 %
2- Alumni	questionnaire	Representative sample
3- Stakeholders (Employers)	Meeting	Representative sample
4- External Evaluator(S) or External Examiner (s)	Report	Prof.Dr. **Thanaa Elmasry**
5- Other		

Program coordinator :

Name: **Prof. Dr. Naglaa Fathi** Signature : 

Department Head:

Name: **Prof.Dr. Hend El Taweel** Signature:

Date of Department Council Approval: 28/8/2023

Program Aims vs Graduate Attribute matrix

Generic Graduate Attributes of NAQAAE	Graduate Attributes By the end of this program, Graduate of Diploma in Experimental and Medical parasitology *should be able to*	Program Aims
Apply specialized knowledge related to professional skills in the field of specification.	2-Provide knowledge about helminthic and protozoal parasitic diseases. 3- Recognize the importance of arthropods as causative agents and vectors of diseases.	1- Recognize the multifaceted nature of parasitology with emphasis on morphology, habitat, life cycles and mode of infection of parasites. 2-Provide knowledge about helminthic and protozoal parasitic diseases. 3- Recognize the importance of arthropods as causative agents and vectors of diseases.
Identify professional problems in the field of specification and propose solutions to them.	1- Recognize the multifaceted nature of parasitology with emphasis on morphology, habitat, life cycles and mode of infection of parasites.	1- Recognize the multifaceted nature of parasitology with emphasis on morphology, habitat, life cycles and mode of infection of parasites.
Master professional skills in the field of specification.	4- Recognize the clinical significance of parasites in humans including the potential interaction between infection with specific parasites and other agents. 5- Provide practical and clinical skills as regards diagnosis and management of parasitic diseases. 6-Describe various conventional diagnostic techniques for recognition of different parasitic infections.	4- Recognize the clinical significance of parasites in humans including the potential interaction between infection with specific parasites and other agents. 5- Provide practical and clinical skills as regards diagnosis and management of parasitic diseases. 6-Describe various conventional diagnostic techniques for recognition of different parasitic infections.
Use appropriate technology means in his/her professional practice of the field of specification.	13- Use information technology to improve professional practice and use different sources of information to obtain data.	13- Use information technology to improve professional practice and communicate efficiently with colleagues
Communicate and lead work teams in a systematic, professional manner.	14- Communicate efficiently with colleagues and staff and lead work teams through group working.	13- Use information technology to improve professional practice and communicate efficiently with colleagues
Take professional decisions in case of available information.	7-Discuss the basic concepts of immunology and identify its role in diagnosis and recognition of different parasitological diseases. 8- Provide basic knowledge on currently used antiparasitic drugs and recognize clinical pharmacology and chemotherapeutic response of each. 9- List different cultural methods as tools of investigating various aspects of parasitology. 10-Recall the different tools of quality control and its application in diagnosis of parasitic diseases.	5- Provide practical and clinical skills as regards diagnosis and management of parasitic diseases. 6-Describe various conventional diagnostic techniques for recognition of different parasitic infections. 7-Discuss the basic concepts of immunology and identify its role in diagnosis and recognition of different parasitological diseases. 8- Provide basic knowledge on currently used antiparasitic drugs and recognize clinical pharmacology and chemotherapeutic response of each.

	11-Learn to apply surveillance data of different parasites in various practical settings. 12- Provide guidelines for care and use of experimental animals in lab.	9- List different culture methods as tools of investigating various aspects of parasitology. 10-Recall the different tools of quality control and its application in diagnosis of parasitic diseases. 11-Learn to apply surveillance data of different parasites in various practical settings. 12- Provide guidelines for care and use of experimental animals in lab and identify role of EM in detecting changes in habitats of different parasitic diseases.
Use available resources efficiently.	14- Communicate efficiently with colleagues and staff and lead work teams through group working.	13- Use information technology to improve professional practice and communicate efficiently with colleagues
Relate his/her studies to community development and environmental preservation.	15-Show awareness of his/her role in community development and environmental preservation.	4- Recognize the clinical significance of parasites in humans including the potential interaction between infection with specific parasites and other agents.
Act in a manner that reflects a commitment to integrity, credibility, professionality, and accountability.	14- Communicate efficiently with colleagues and staff and lead work teams through group working.	13- Use information technology to improve professional practice and communicate efficiently with colleagues
Realize the need for self-development and engaging in continuous learning.	15-Show awareness of his/her role in community development and environmental preservation.	4- Recognize the clinical significance of parasites in humans including the potential interaction between infection with specific parasites and other agents.

Program Aims vs ILOs matrix

Aims	a1	a2	a3	a4	a5	a6	a7	a8	a9	a10	a11	a12	a13	a14	b1	b2	b3	b4	b5	b6	b7	b8	b9	b10	b11	b12	b13	b14	b15	b16	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	d1	d2	d3	d4	d5
1.	x	x	x	x				X							x		x														x	x	x								x		X				x
2.		x	x	x				X								x	x														x	x	x								x				X		
3.			x														x	x						x											x		x				x		X		x	
4.			x	x														x						x											x		x				x			x	x
5.																		x	x												x	x	x	x									X		
6.					x	x	x		x									x		x		x										x				x					X				x
7.										x												X																			X			x	x
8.								X						x															x												X			x
9.					x	x	x															X			x																			x	
10.													x		x	x							x					x														X				
11.													x														x																X		x	
12.											x										x					x	x												x			X			X	
13.																																										x	x	x	x	x

**** Courses vs Program ILOs matrix:***

Title of the course	a1	a2	a3	a4	a5	a6	a7	a8	a9	a10	a11	a12	a13	a14	b1	b2	b3	b4	b5	b6	b7	b8	b9	b10	b11	b12	b13	b14	b15	b16	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	d1	d2	d3	d4	d5
Parasitology (a)	x		x	x				x							x		x															x								x		X				x
Parasitology(b)		x	x	x				x								x	x															x								x		X				x
Clinical Parasitology (a)			x														x	x						x										x		x				x			X	x	x
Clinical Parasitology (b)			x	x														x						x										x		x				x	X	X			
Diagnostic Parasitology (a)																		x	x												x	x	x	x									X		x
Diagnostic Parasitology(b)					x	x			x									x		x		x										x			x							X		x	x
Treatment of parasitic infections										x												X																						X		x	
Experimental Parasitology								x						x															x								x						X		x	x
Immunology of parasitic infections (a)					x	x																X																					X		x	x
Epidemiology of Parasitic infections (a)													x		x	x							x						x														X	X		x	x
Field Studies													x														x																	X		x	X
Quality control (a)											x										x																						X		X	x
Fundamental in lab animal science																									X	x													x					X		X
In vitro cultivation (a)							x																		x	x																	X		x	x
Electron microscopic studies of parasites (a)												x															x																	x			x	x

*ARS vs ILOs matrix

ARS	a1	a2	a3	a4	a5	a6	a7	a8	a9	a10	a11	a12	a13	a14	b1	b2	b3	b4	b5	b6	b7	b8	b9	b10	b11	b12	b13	b14	b15	b16	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	d1	d2	d3	d4	d5
A1	X	X																																												
A2			X	X																																										
A3					X	X																																								
A4							X	X																																						
A5									X																																					
A6										X				X																																
A7											X		X																																	
A8												X																																		
B1															X	X																															
B2																	X	X					X																								
B3																			X								X																			
B4																				X		X																								
B5																					X				X																					
B6																										X				X															
B7																								X				X	X																
C1																															X														
C2																																X	X	X		X				X					
C3																																			X											
C4																																					X				X					
C5																																						X	X							
D1																																										X				
D2																																											X			
D3																																												X		
D4																																													X	
D5																																														X

Teaching methods vs Course matrix

	1707601	1707602	1707603	1707604	1707605	1707606	1707607	1707609	1707610	1707611	170612	1707613	1707614	1707615	1707640
Lecture	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Practical/Clinical	x	x	x	x	x	x		x							
Brainstorming	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Discussion Groups	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Problem Solving			x	x		x									
Case Study			x	x											
Training Workshops	x	x													
Self-Directed Learning	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
e-learning															
Project															