



Kafr elsheikh University
Faculty of Medicine
Medical Parasitology department



Medical parasitology for third year
PROGRAM SPECIFICATION
Year: 2017/2018





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Kafrelsheikh University
Faculty of Medicine
Department of Medical Parasitology

Course Specifications

Course title: Medical parasitology for third year

Code:

Department offering the course: Medical Parasitology Department.

Third academic year of M.B. B.Ch. program.

Date of specification approval:

A) BASIC INFORMATION:

Allocated marks: 150 marks
Course duration: 30 Weeks

Teaching hours: 120 Total hours

Theoretical 60 hours

Tutorial and practical 60 hours

B) PROFESSIONAL INFORMATION:

1- Overall Aim of the Course:

- Provide the undergraduate students with essential knowledge of medical parasitology.
- Acquire skills necessary for applying the scientific analytic methods in medical parasitology using available resources and saving the environment.
- Recognize ethical principles related to the practice in this speciality.
- Access active participation in community needs assessment.



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- Reach active participation in problems identification and solving.

2- Intended Learning Outcomes (ILOs):

2.a. Knowledge and Understanding:

By the end of the program , the graduate should be able to:

- 2.a.1. Assess basic concepts of parasitism; terminology, geographical distribution, morphology, life cycles, transmission, pathology, pathogenesis, clinical picture, host parasite relationship, treatment, prevention and control of parasitic diseases.
- 2.a.2. Differentiate medically important vectors and snails.
- 2.a.3. Describe basic principles of direct methods of diagnosis as well as immunological methods of diagnosis and carry out them.
- 2.a.4. Discuss basis of environmental parasitology.

2.b. Intellectual skills:

By the end of the program the graduate should be able to:

- 2.b.1. Analyze given parasitological information.
- 2.b.2. Investigate different parasitological problems (identification, diagnosis, treatment) in absence of adequate data.
- 2.b.3. Construct different knowledge to help in solving difficult problems.
- 2.b.4. Distinguish the danger of handling and use of infectious agents on community and environment as a part of their ethical heritage.
- 2.b.5. Plan for development in the performance in diagnosis of parasitic disease and its application for community development.
- 2.b.6. Apply appropriate professional decisions, in different situations.

2.c. Practical skills:

By the end of the program, the graduate should be able to:



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- 2.c.1. Identify medically important parasites based on microscopic examination of stained preparations.
- 2.c.2. Differentiate diagnostic tests commonly used for parasitic infections.
- 2.c.3. Judge results of parasitological, serological and molecular tests and apply them.
- 2.c.4. Evaluate different parasitological tools and diagnostic methods.

2.d. Professional attitude and behavioral skills:

By the end of the course, students should be able to:

- 2.d.1. Respect and follow the institutional code of conduct.
- 2.d.2. Maintain professional image in manner, dress speech and interpersonal relationships that is consistent with the medical profession's accepted contemporary standards in the community.

2.e. Communication skills:

By the end of the course, students should be able to:

- 2.e.1. Communicate effectively with individuals regardless of their social, cultural, ethnic backgrounds, or their disabilities.
- 2.e.2. Express themselves freely and adequately by improving their descriptive capabilities and enhancing their communication skills.
- 2.e.3. Honor and respect, superiors, colleagues and any other member of the health profession.

2.f. General & transferable skills:

By the end of the program, the graduate should be able to:

- 2.f.1. Communicate effectively using all methods.
- 2.f.2. Use information technology to improve his/her professional practice.
- 2.f.3. Perform self-appraisal & seek continuous learning.



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- 2.f.4. Use different sources of information to obtain data.
- 2.f.5. Work as team leader as well as a member in larger teams.
- 2.f.6. Manage scientific meetings and appropriately utilize time.
- 2.f.7. Continue self-learning.



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3- COURSE CONTENTS:

Topics	% of total hrs	% of each subject hrs	No. of hours		
			Total	Lecture	Practical
I- Introduction to parasitology	1.6%		1	1	
II-Helminthology	41.6%	100%	25		30 hrs total
*Trematoda			6		6 hrs
- Introduction & Fasciola species	3.3%	8%		2	
- Heterophyes heterophyes	1.6%	4%		1	
-Paragonimus westermani	5%	12%			6 hrs
-Schistosoma species	8.3%	100%		3	
*Cestoda	1.6%	4%	5		
-Introduction	1.6%	4%		1	
-Diphyllobothrium species	1.6%	4%			
-Taenia species	1.6%	4%		1	
-Echinococcus species & Multiceps multiceps				1	
-Hymenolepis species				1	
-Extraintestinal Cestodes				1	
*Nematoda	23.3%	100%	14 hrs		8 hrs
Intestinal nematodes	11.6%		7 hrs		
-Introduction	1.6%	4%		1	
-Ascaris lumbricoides					
-Trichuris trichiura	1.6%	4%		1	
-Enterobius vermicularis	1.6%	4%		1	
-Hook worms	1.6%	4%		1	
-Trichostrongylus & Strongyloides	1.6%	4%		1	
-Capillaria philippinensis	1.6%	4%		1	



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Topics	% of total hrs	% of each subject hrs	No. of hours		
			Total	Lecture	Practical
-Trichinella spiralis	1.6%	4%	7hrs	1	
-Tissue nematodes	11.6%	100%		1	
-Dracunculus medinensis	1.6%	4%		3	
-Wuchereria bancrofti & Brugia malayi	5%	12%		1	
-Onchocerca volvulus & Loa loa	1.6%	4%		1	
- Larva migrans (visceral and cutaneous).	1.6%	4%		1	
Protozoology :	30%	100%		8	
- Intestinal protozoa	10%	33.3%	6		
- Introduction & Entamoeba histolytica	3.3%	11.1%	2		
- Commensal amoebae & Balantidium coli	1.6%	5.5%	1		
-Giardia lamblia	1.6%	5.5%	1		
-Cryptosporidium parvum	1.6%	5.5%	1		
-Cyclospora & Isospora	1.6%	5.5%	1		
-Urogenital protozoa	18.3%	61%	11		
-Blood & tissue protozoa	5%	16.6%	3		
-Plasmodium species & Babesia	3.3%	11.1%	2		
-Leishmania species	3.3%	11.1%	2		
-Trypanosomes	1.6%	5.5%	1		
-Toxoplasma gondii	1.6%	5.5%	1		
-Free living amoebae					
-Microsporidia & opportunistic protozoa					
Immunology & molecular parasitology	8.3%	100%		5	
-Types of immunity & mechanisms	1.6%	20%		1	



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Topics	% of total hrs	% of each subject hrs	No. of hours		
			Total	Lecture	Practical
-Vaccination, immunopathology	1.6%	0%		1	
-Molecular parasitology	1.6%	20%		1	
-Evasion	1.6%	20%		1	
-Immunodiagnosis	1.6%	20%		1	
Entomology	16.6%	100%	1		15
-Introduction & Mosquitoes	3.3%	20%		2	
-Phlebotomus spp, Simulidae	1.6%	10%		1	
ceratopogonidae & Tabanidae	3.3%	20%		2	
-Muscidae	1.6%	10%		1	
- Calliphoridae & Oestridae, Myiasis	1.6%	10%		1	
-Fleas –Lice –Bugs	1.6%	10%		1	
-Ticks					
-Mites					
-Scorpion –Cyclops – Control of arthropods & Insecticides					
Total	100%			60	60



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Schedule of Practical Classes
Trematods

<u>slides:</u>	
adult	
Adult <i>Fasciola hepatica</i>	(DM)
Adult female <i>Schistoma haematobium</i>	(DM)
Schistosoma in copula	(DM)
Adult male <i>Schistoma haematobium</i>	(CM 10 X 10)
Adult male <i>Schistoma mansoni</i>	(CM 10 X 10)
Adult <i>Heterophys heterophys</i>	(CM 10 X 10)
<u>Cercaria</u>	
<u>Slides:</u>	
<i>Fasciola</i> species cercaria	(DM)
<i>Schistoma</i> species cercaria	(DM)
<u>Eggs</u>	
<i>Fasciola</i> egg	(CM 10 X 10)
<i>Clonorchis sinensis</i> egg	(CM 10 X 10)
<i>Schistoma haematobium</i> egg	(CM 10 X 10)
<i>Schistoma mansoni</i> egg	(CM 10 X 10)
<u>snails</u>	
Lymnea species intermediate host of <i>Fasciola</i> species.	
Pirenella conica intermediate host of <i>Heterophys heterophys</i> .	
<i>Bulinus truncatus</i> species intermediate host of <i>Schistoma haematobium</i> .	
<i>Biomephalaria alexandrina</i> species intermediate host of <i>Schistoma mansoni</i> .	
<u>Jars</u>	
Adult <i>Fasciola</i> in liver.	

Cestodes

<u>Scolex</u>	
<u>slides:</u>	
<i>T. solium</i> scolex	(CM 10 X 10)
<i>T. saginata</i> scolex	(CM 5 X 10)



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Segments

Slides:

<i>D.latum</i> (mature segment)	(DM)
<i>Taenia</i> (mature) and gravid segments	(DM)
<i>Taenia saginata</i> (gravid segment)	(DM)
<i>Dipylidium caninum</i> (mature segment)	(DM)
<i>Dipylidium caninum</i> (mature segment)	(DM)

Eggs

<i>Taenia</i> egg	(CM 10 X 10)
<i>D.latum</i> egg	(CM 10 X 10)
Egg capsule of <i>Dipylidium caninum</i>	(CM 10 X 10)
**Hydatid sand	(CM 10 X 10)

Larval stages

<i>Cysticercous cellulosa</i>	(DM)
<i>Cysticercoid diminuta</i>	(CM 10 X 10)

Whole adult

<i>Echinococcus granulosus</i>	(DM)
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Section

Hydatid cyst in lung	(DM)
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Jars

Hydatid cyst in lung
Hydatid cyst in liver
<i>Taenia</i> segments
<i>Cysticercous bovis</i>
Mature segments <i>D. latum</i>

Nematodes

slides:

	adult	
Adult male <i>Ankylostoma duodenale</i>		(DM)
Adult female <i>Ankylostoma duodenale</i>		(DM)
Adult female <i>Trichnella spiralis</i>		(CM 10 X 10)
Adult female <i>Entrobilus vermicularis</i>		(CM 10 X 10)



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Eggs

<i>Ascaris</i> egg	(CM 10 X 10)
<i>Trichuris trichura</i> egg	(CM 10 X 10)
<i>Entrobilus</i> egg	(CM 10 X 10)

Section

Muscle section containing encysted larva of <i>Trichnella spiralis</i> .	(CM 10 X 10)
Muscle section containing <i>Onchocerca volvulus</i> .	(CM 10 X 10)

Microfilaria

Microfilaria of *Loa loa*.

Protozoa

slides:

<i>Entamoeba histolytica</i> cyst	(OLM)
<i>Entamoeba histolytica</i> trophozoite	(OLM)
<i>Giardia lamblia</i> cyst	(OLM)
<i>Giardia lamblia</i> trophozoite	(OLM)
<i>Balantidium coli</i> cyst	(OLM)
<i>Balantidium coli</i> trophozoite	(OLM)
<i>Trichomonas vaginalis</i> trophozoite	(OLM)
<i>Cryptosporidium parvum</i> oocyst (modified Z/N stain)	(OLM)
<i>Isospora belli</i> oocyst	(OLM)
<i>Toxoplasma tachyzoite</i>	(OLM)
<i>Leishmania amastigote</i> spleen biopsy	(OLM)
<i>Leishmania promastigote</i> culture	(OLM)
Polymorphic <i>Trypanosomes</i>	(OLM)
Monomorphic <i>Trypanosomes</i>	(OLM)
<i>Plasmodium falciparum</i> gametocyte	(OLM)
<i>Plasmodium falciparum</i> ring stage	(OLM)

Entomology

slides:

	adult
Female <i>Aopheles</i> head	(DM)
Adult female <i>culex</i>	(DM)



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Adult <i>female phelobotomus</i>	(CM 4 X 10)
Adult <i>simulium</i>	(DM)
Adult <i>culicoides</i>	(CM 4 X 10)
Adult female <i>pediculus humanis capitis</i>	(DM)
Adult male & female <i>cyclops</i>	(CM 4 X 10)
Adult female <i>cimex lectularis</i>	(DM)
Adult female hard tick	(DM)
Adult female <i>Pulex irritance</i>	(DM)
Adult female <i>Xenopsylla cheopis</i>	(DM)
Adult male <i>Xenopsylla cheopis</i>	(DM)
Adult female <i>Ctenocephalides</i>	(DM)
Adult male <i>Ctenocephalides</i>	(DM)

Eggs

<i>Pediculus humanis</i> egg	(CM 10 X 10)
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Jars

Gastrophylus larva in small intestine.

Boxes

Adult *Musca domestica*
Adult *sarcophagi*
Adult *walpharchia*
Adult *calliphora*
Adult *lucilia*
Ault soft tick

CM = compound microscope.

DM = dissecting microscope.

OIL = oil immersion lens.

4- Teaching and learning methods:

Teaching and learning facilities:

- 1-Lecture halls
- 2-Small group in lab.
- 3-Equiped labs with microscopes, slide projectors, overhead projectors and data show.



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- 4-Departmental museum is used
- 5-Faculty library can be used for projects and textbooks
- 6-CD for theoretical and practical revision.

Teaching plan:

Lectures: Division of students into five groups twice /week

Tutorials & Practical classes: Division of students into five groups once / week.

The practical training in the labs is every week. The students will be organized by dividing them into 5 big groups, one group each day, and then each group is divided into 4 smaller sub- groups in 4 labs simultaneously. These Subgroups of students allow interaction, presentations and feedback. The plan for practical training is attached in instructional units section. Each lab includes presentation of the scheduled topic by one of the staff, and explanation of the slides. Then the students examine the slides themselves helped by joiner staff aided with microscopes, projector slides, data show photos. The tutorial data show photos of sections of tissues and organs similar to those studied in practical lab but of different and variable sources for training and Quizzes. This is carried by senior staff members.

Time plan:

Item	Time schedule	Total hours
Lectures	twice / week	60hours
Tutorial & Practical	once / week	60 hours
Revision	two weeks/semester	
Mid-year Exam	two weeks	
Total	30 weeks	120



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5- Students assessment methods:

5.1. Attendance criteria: Faculty bylaws

The minimum acceptable attendance is 75%, Students who fail to meet their attendance requirements are deprived of their final practical exams.

5.2. Assessment tools:

Tool	Purpose (ILOs)
Written examination <u>Mid year exam :</u> short questions MCQ, true & false & Matching <u>End of year:</u> short & long questions , drawings, MCQ, true and false, Matching	To assess knowledge and understanding and skills
Oral examination end of Year	To assess of knowledge & understanding, general and transferable skills (communication), professional attitudes/skills & intellectual skills
Practical examination(OSPE)	To assess descriptive & diagnostic abilities (intellectual skills) and practical skills
practical book plus problem solving	To assess practical skills and to assess attendance.
Group assignments	To assess of communication skills To assess of ability to use computer to reach biomedical information.



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5.3. Time schedule Faculty by laws.

Exam	Week
1- First half of the academic year	November fourth week
2- Mid-year exam	January second week
3- Second half of the academic year	March fourth week
4- Practical exam	May first week
5- Final exam	June fourth week

5.4. Grading system:

Examination	Marks allocated	% of Total Marks
1- First mid term	2.5	1.6%
2- Mid-year	22.5	15%
3- Second mid term	2.5	1.6%
4- Final exam:		
a- Written	75	50%
b- Practical	25	16.8%
c- Oral	20	13.4%
5- Assignments & other Activities	2.5	1.6%
Total	150	100%

The minimum passing & Passing grades (Faculty bylaws).

The minimum passing score is 60% provided at least 40% are obtained in the final written exam. Passing grades:

Excellent 85%

Very good 75%

Good 65 %

Fair 60– 65



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5.5. Formative assessment:

Student knows his marks after the Formative exams.

Examinations description:

EXAMINATION		DESCRIPTION	MARKS
Quiz		Identification of 5 projector slides in 10 minutes	5
Mid examination	Year	One-hour written paper composed of short essay type questions –MCQs and case description and discussion	25
Project presentation		Writing project on some endemic parasitic diseases provided with illustrations	5
Quiz		Identification of 5 projector slides in 10 minutes	5
Final examination	Written	Two hours written paper composed of short essay type questions –MCQs and case description and discussion	60
	Practical	Spotting of 20 slides, boxes and jars	30
	Oral	Two sessions : One for helmentology & snails for 10 min. One for Arthropodes & protozoology for 10min.	20
Total			150



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6. List of references:

6.1. Basic materials:

Department book: constructed by staff members.
Department's colored atlas book.
Department's practical book.

6.2. Essential books (text books):

Basic Medical Parasitology text and atlas.

6.3- Recommended books:

Topley & Wilson tropical diseases.
Manson's tropical diseases.
Parasitology an integrated approach.

7- Facilities required for teaching and learning;

Facilities used for teaching this course include:

- Lecture halls: five grand lectures halls allocated daily for teaching central lecture halls).
- Small 2 well equipped labs available within the department. One lecture rooms available within the department.
- Two data show equipment and computers for slide and photo presentation. Microscopes.
- Writing boards are available in all rooms; overhead aids and slide projectors. Microscopic slides.

Course coordinator:

Dr Marwa Ghallab (lecturer of Medical Parasitology).

Head of Department:

Date: 13/12/2017