Ministry of High

Erbil Polytechnic P University

Erbil Technical Health & Medical college

MLT department

Subject: Helminthology

Course Book: Third stage (year3) and semester 5

Lecturer's name: Dr. Hemdad Hawez Mawlood (PhD in Medical and Molecular parasitology and **Mrs. Hawri Hawar Muhammad** M.Sc. Medical parasitology)

Academic Year: 2022/2023

Course Book

1. Course name	Medical Parasitology
2. Lecturer in charge	Dr.Hemdad Hawez Mawlood
3. Department/ College	MLT/Erbil Health Technical College
4. Contact	E-mail: Hemdad.mawlood@epu.edu.iq Tel: 009647504489480
5. Time (in hours) per week	Theory: 2 Practical: 2
6. Office hours	12
7. Course code	
8. Teacher's academic profile	**Currently** Ph. D in Molecular Parasitology between University of zakho (Kurdistan)Tennessee State University(USA) and University of Tennessee at Knoxville(USA). **From** 10/2004 to 2/2007 Master in Medical Parasitology University of Alqadisiya (South of Iraq). **From** 10/1994 to 7/1998 Bachelor of Science in Biology from University of Salahaddin. **From** 2017 –till now lecturing Clinical Parasitology for second grade in MLT Dep/Erbil Health Technical college. **From** 10/2012 to 07/2014 lecturing Medical parasitology for second grade in Erbil Medical Technology Institute Erbil, Kurdistan **and** Researching for PhD at University of Zakho. **From** 11/2014 to 5/2015 researching and study in Tennessee State University and Southern Hills Medical Centres in United states of America. **From** 3/2016 to 6/2016 researching and training PCR-RFLP Technique for genotyping; Mice injection and cell culture for *T. gondii* at University of Tennessee at Knoxville/USA **From** 10/ **2010 to 10/2012** researching and working as MICROBIOLOGIST 2 Certified at Tennessee Health Department Laboratory Service/USA for following issues 1. Surveillance for the confirmation of: *Streptococcus pnumoniae, Haemophilus influenza and typing, Neisseria*

	meningitides and grouping, *Streptococcus pyogenes* (Group A *Streptococci)* and *Staphylococcus aureus*. 2.Screened for sexually transmitted diseases by Nucleic Acid Amplification Techniques by Genprobe; specifically, *Chlamydia trachomatis and Neisseria gonorrhoeae*. 3.detected microorganisms in water samples and wastewater, the methods were performed by Environmental Protection Agency (EPA). the following organism were detected: *Escherichia coli, Fecal coliform, Enterococcus species, Heterotrophic bacteria, Cryptosporidium and Giardia lumblia*
9. Keywords	Common parasites in Kurdistan , Helminthes, Ectoparasite,techniques

10. Course overview:

I Explain the view of course by following points:

1.parasitology classes it is important for each student of our department because in future when the student graduated in college and get Bachelor's degree in Medical Laboratory Technology he or she doesn't have chance to find out the job without parasitic diagnosis skills.

2.The principle of relation between parasite and hosts it is a major part of this classes especially human beings because human it has considered an intermediate host of many parasites.

3. during the course student should be understood the major type of protozoa parasites and worms especially all parasites which are available in Kurdistan, also should be know the type of hosts and mechanism of pathogenicity of each parasite.

4.Diagnostic of parasites it is topic of each subjects and follow up new techniques for diagnostic of parasites especially molecular technique and genotyping of parasites.

5.After graduation all students just need it minor review of techniques in general hospitals and private labs.

11. Course objective:

During Medical parasitology classes student, they learnt and earned knowledge of:

1.the life cycle, lab diagnostic, pathogenicity, treatment infective stage, intermediate and final host of most protozoa parasites.

2. life cycle, lab diagnostic, number of intermediate hosts, final host, and treatment of each cestoda, Nematode and other type of parasite worms

3.diffrent between Ectoparasits and endoparasites and pathogenicity of Ectoparasites with the life cycle and diagnostic of Ectoparasites in Kurdistan region/Iraq

12. Student's obligation

For each student is obligated to know:

1.draw and label all stages of parasites in lab.

2.bring fresh samples of blood, urine, sputum and stool to lab. for diagnostic common Helminths parasites in Erbil such as egg of *Entrobius vermicularis* and *ascaris lumbricodes* in stool, *H nana and microfilaria* in blood..

3.Atending all students in theory and practical classes are obligated

13. Forms of teaching

Updating lectures by Power points, using white board during explanation like life cycle and scientific name of parasites also practical parasite book it be available in lab to see image of each parasites and compare with the parasites in microscope

14. Assessment scheme

Each lecture especially practical lecture the quiz is requirement in next week and monthly seminar is requirement with the scores. The seminar is run by two or three students. Also, monthly and final semester exams are required.

15. Student learning outcome:

The outcome of this learning are:

1.students know how diagnosis most and common parasites by different techniques especially immunology and molecular techniques both of techniques available in private labs.

2.Students know what type of samples used for detecting parasites and using concentration method to detection ova of worms from stool.

3.during detecting parasites in fresh samples. preparation and fixed those parasites in slide by Canada balsam for keeping those slide in parasitology lab for next stage students.

4.using Realtime –PCR for detecting common helminthes and human lice

16. Course Reading List and References:

▪ Using diagram of life cycles from CDC (centre of control disease and control) website and using those books below:

1.ELlizabeth A. Zeibig (2013.) Clinical Parasitology a Practical Approach 2nd edition. Elsevier St. Louis, Missouri, USA.

2. John W. Ridley. (2012). Parasitology for Medical and Clinical Laboratory Professionals. Delmar, Cengage Learning, USA.

3. Larry, R.; John, J and Steve, N (2013). Foundations of Parasitology .9 edition McGraw Hill. Florida USA.

4.Using different Journals about medical parasitology such as: Journal of Bacteriology & Parasitology, Applied parasitology, Experimental parasitology, Parasitology international, Korean Journal of parasitology and European Journal of Parasitology with other international Journals.

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17. The Topics and No. of Lectures	**Lecturer's name (2hrs.)**
1. Explain general characteristics of Nemathelminthes, Platyhelminthes and Trematodes	Helminths (worms)
2..Explian life cycle, morphology, pathogenicity and method of transmission for Pin worm.	*Pin worm (Enterobius vermicularis)*
3.Explain life cycle, pathogenicity, morphology, method of transmission and diagnostic of *Ascaris Lumbricoides*	Ascaris Lumbricoides
4. Explain life cycle, pathogenicity, morphology and method of transmission of *Trichuris trichiura*.	*Trichuris trichiura* (Whipworm)
5. Explain life cycle, pathogenicity, morphology and method of transmission for both. *Ancylostoma duodenale* and *Necator Americans* and different between them.	*Ancylostoma duodenale* and Necator Americans
6. Explain life cycle, pathogenicity, morphology and method of transmission of *Strongyloides stercoralis*	*Strongyloides stercoralis*
7. Explain life cycle, pathogenicity, morphology and method of transmission of *Trichinella spiralis*	*Trichinella spiralis*
8. Explain life cycle, pathogenicity, morphology and method of transmission of Wuchereria bancrofti.	Filariasis ex. Wuchereria bancrofti
9. Explain life cycle, pathogenicity, morphology and method of transmission of *Echinococcus granulosus*	Morphology and classification of Tapeworm and Hydatid cyst
10. Explain life cycle, pathogenicity, morphology and method of transmission of *Taenia saginata*	Beef Tape worm

25.Explain life cycle, pathogenicity, morphology and method of transmission of *Teania solium and differentiation with theTeania saginata*	Pork tape worm
26.Explain life cycle, pathogenicity, morphology and method of transmission of *Diphyllobotrium latum*	Fish tape worm
27.Explain life cycle, pathogenicity, morphology and method of transmission of mite	Ectoparasites
28. Explain life cycle, pathogenicity, morphology and method of transmission of tick	
18. Practical Topics	Lecturer's name 2 hrs.
1. Describe morphology of *Enterobius vermicularis* and lab diagnosis with the illustrated by slides.	Helminths (Pinworm)
2. Describe morphology of *Ascaris lumbricodes and* lab diagnosis with the illustrated by slides.	Giant roundworm
3. Describe morphology of Echinococcosis granulosis, lab diagnosis and illustrated all stages by slides. Also determine infective stage	Tapeworm
4.see hydatid cyst in slaughters among different intermediate host	Visiting slaughter
5. Describe morphology of Teania saginata, lab diagnosis and determine infective stage with illustration of all stages by slide.	Beef tape worm
6. Describe morphology of Teania solium, lab diagnosis and determine infective stage with illustration of all stages by slide then differentiation with *Teania saginata*.	Pork tape worm
7.Diffrent egg of worms with psedoparasites	Psedoparasites
8. Describe morphology of Wuchereria bancrofti, lab diagnosis with illustration by slide.	Filiariasis

9.Describe morphology of *Ancylostoma duodenale* and lab diagnosis with illustration by slide.	*Ascaris lumbricods* *Ancylostoma duodenale*
10. Describe morphology of *Necator Americans* and lab diagnosis with illustration by slide,	Necator Americans
11. Describe morphology *Strongyloides stercoralis* of and lab diagnosis with illustration by slide,	*Strongyloides stercoralis*
12. Describe morphology mite of and lab diagnosis with illustration by slide,	Ectoparasites

19. Examinations:

1. Compositional: In this type of exam the questions usually starts with Explain how, What are the reasons for…?, Why…?, How….?
With their typical answers
Examples should be provided

2. True or false type of exams:

In this type of exam a short sentence about a specific subject will be provided, and then students will comment on the trueness or falseness of this particular sentence. Examples should be provided

3. Multiple choices:
In this type of exam there will be a number of phrases next or below a statement, students will match the correct phrase. Examples should be provided.

20. Extra notes:

Here the lecturer shall write any note or comment that is not covered in this template and he/she wishes to enrich the course book with his/her valuable remarks.

21. Peer review **پێداچوونەوەی هاوەڵ**

This course book has to be reviewed and signed by a peer. The peer approves the contents of your course book by writing few sentences in this section.

(A peer is person who has enough knowledge about the subject you are teaching, he/she has to be a professor, assistant professor, a lecturer or an expert in the field of your subject).

Review by:

Assistant proff Karwan salao Najm

Erbil polytechnic university

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