



Department of – Pathological Analysis

Institute of – Paitaxt technical institute- Private

Subject: Advanced Parasitology

Course Book – Second Stage- Second semester (Theory+ Practical)

Academic Year: 2023-2024

Course Book

1. Course name	Advanced Parasitology
2. Lecturer in charge	
3. Department/ College	<i>Pathological Analysis Department</i>
4. Contact	
5. Time (in hours) per week	Theory: 2 Practical: 2
6. Office hours	<i>4 hours during the week</i>
7. Course code	PAD020
8. Teacher's academic profile	<i>Assistant. Prof.</i> <i>Master's degree in Medical Zoology in College Of Science at Mousel University.</i> <i>Ph.D. degree in parasitology in the College Of Science at Mousel University.</i>
	<i>Bachelor degree in Medical Microbiology / College of Science/ Soran University</i>
9. Keywords	<i>Parasites, Protozoa, hilmenthes.</i>
10. Course overview: <i>This course aims to provide a comprehensive theoretical and practical knowledge of medical parasitology including the Morphology of parasites, diagnostic and infective stages, mode of transmission, signs & symptoms, and treatment of diseases and disorders caused by parasites.</i>	
11. Course objective: <i>Up on completion of the course, the students will:</i> <i>1. Have advanced knowledge of systematic medical parasitology.</i> <i>2. Be able to understand the structure and diagnostic features of parasites.</i>	

3. *Have advanced skills in practical methods of collecting and processing samples for detecting parasitic causative agents.*

12. Student's obligation

- 1-*The student's attention in all theoretical and practical lectures in the academic year.*
- 2- *Completion of all tests.*
- 3- *Attendance in exams*
4. *Write or prepare reports..*

13. Forms of teaching

Lecture –The main aim-highlight the problem, make sure students understand the information, and stimulate interest in the subject. Dialogue form of classroom work on one of the topics Use of PowerPoint presentations, boarding, conferences.

Practice – working out skills based on theoretic knowledge.

14. Assessment scheme

Breakdown of overall assessment and examination

- 1- *Practical examine 20%.*
- 2- *Theoretical examine 20%.*
- 3-*Activities 10%.*
- 5-*final practical examination 30%.*
- 5-*final theoretical examine 20%*

15. Student learning outcome:

- *On successful completion of this program, graduates will be able to:*
- *Identify, evaluate, and apply major theoretical traditions in medical parasitology studies.*
- *Understand how parasites cause disease.*

16. Course Reading List and References:

- *Textbook of Medical Parasitology, 11th edition*
- **Color Atlas of Parasitology**, Practical Microscopic and Clinical Diagnosis, Harald Thieml, M.D.

17. The Topics:

MEDICAL PARASITOLOGY SYLLABUS

COURSE DESCRIPTION

The Medical Parasitology course provides an overview of the human parasites and their diseases. Topics include the basic concept of protozoan parasite classes, Sarcodina, Flagellate, ciliate, sporozoa, and medical helminthology. Special emphasis is placed on topics that are related to human health such as host-pathogen interactions and laboratory diagnostic methods.

COURSE OBJECTIVES:

This course is designed to: The course aims to develop basic knowledge and skill to identify the parasites, and the diseases caused by them and emphasize the laboratory diagnosis tool for the detection of different stages of parasites.

COURSE LEARNING OUTCOMES:

After participating in the course, students would be able to :

- 1.. Define and classify the medically important parasites based on morphology, biology, and clinical criteria.
- 2.. Describe the life cycle, morphology, infective stages, diagnosis stages, sources of infection, and mode of transmission of each parasite with a view to the prevention and control of parasitic diseases .
 - **By microscopic examination .**
- .3. Identify the parasites at different stages of the life cycle, their vectors, and hosts.
- 4.. Identify the different larval stages of the parasites during the life cycle and pathogenesis steps .
- 5.. Apply suitable methods for parasite detection.
- .6 Use applicable tools for parasitic disease control and prevention .
- .7 Combine vectors and parasitic diseases to make a good control plan.

COURSE TEACHING AND LEARNING ACTIVITIES:

This course is scheduled for 5 hours per week in two equal split over two different days. The complete semester is composed of 15 instructional weeks followed by one week of final exams .

Instructional methods will include :

•Lectures. • Class discussions and presentations. • Written activities. • PowerPoint presentations and Videos. • Online learning tools.

Weeks	Outline theoretical	No. of Hours
1	Introduction to medical helminthology	2
2	Platyhelminthes- Cestodes ,T. sagenata and T. solium	2
3	Platyhelminthes- Cestodes, Hymenolepis nana and H. diminuta	2
4	Platyhelminthes- Cestodes, Echinococcus granulosus and E. multilocularis	2
5	Platyhelminthes- Cestodes Diphyllbothrium latum	2
6	Platyhelminthes- Trematodes , Liver and Lung Flukes	2
7	Platyhelminthes- Trematodes, Blood Flukes	2
8	Nematoda- Entrobus vermicularis and Ascaris lumbricoides	2
9	Nematoda- Strongyloides stercoralis	2
10	Nematoda- Hook worm and Whipworm	2
11	Nematoda- Filaria and filariasis	2
12	Medically important arthropodes	2
13	Arthropoda- Insects, medical important vectors	2
14	Revision week	2
	Final Exam	

18. Practical Topics	
1. Introduction of the parasitology, laboratory technique and Procedure, Lab Safety, Microscopic uses. 2. Urine analysis, macroscopic and microscopic examination of the urine, chemical examination of urine 3. Different type of Parasitic Specimens, Stool examination (preparation, procedure, identification of parasite), procedure of blood and tissue parasite test. 4. E.histolytica (trophozoite & Cyst). E.coli (trophozoite & Cyst). 5. Balantidium coli (trophozoite & Cyst). Giardia lamblia (trophozoite & Cyst) 6. Trichomonas vaginalis (trophozoite). Trichomonas hominis (trophozoite). 7. Leishmania spp. (amastigote & promastigote). Female of sand fly 8. Trypanosoma spp (Epimastigote trypomastigote) Female of Tsetse fly and Kissing bug) 9. Plasmodium spp (Ring- forms trophozoite, Schizont,Gametocyte) Female of mosquito 10. Toxoplasma gondii (oocyst, Tachyzoite, Bradyzoite, Tissue cysts) Cryptosporidium spp. (Thin and Thick walled oocyst) Cystoisospora belli (mature oocyst) 11. Introduction of helminthes, T.sagenata (Scolex, segments, graved segment, egg) T.solium (Scolex, segments, graved segment, egg) H.nana (Scolex, segments, graved segment, egg) 12. Schistosomiasis, Hook worm, Enterobius vermicularis, A.lumbricoides, 13. H.diminuta (Scolex, segments, graved segment, egg) E. granulosus (Adult worm, egg, Hydatid cyst) 14. Free living amebae Opportunistic tissue protozoa 15. babesia spp, Blastocystis spp 16. Dientamoeba fragilis	Ahmad Majeed Khorsheed ex: (2 hrs)

19. Examples of exams:

Differentiate between the following:

1- Cyst of *Entamoeba histolytica* and *E. coli*

Fill in the blanks:

1- The definitive host of *Taenia solium* is.....

2- The cyst of *Iodamoeba butschlii* commonly has.....

20. Extra notes:

Increasing students' activities by holding seminars is highly recommended.

21. Peer review:

The contents of this course book are verified and effective.

Lecturer