

Ministry of Higher Education and Scientific research



Department of Biology

College of Education

Salahaddin University

Subject: Practical Parasitology

Course Book – (Year: 4th Class)

Lecturer's name: Ashna Muhamad-Ali Abubakr -MSc.

Academic Year: 2022/2023

Course Book

1. Course name	Practical Parasitology
2. Lecturer in charge	Ashna Muhamad-Ali Abubakr
3. Department/ College	Biology Dept./ College of Education
4. Contact	e-mail: Ashna.hamawand@gmail.com
5. Time (in hours) per week	Practical: 12 hrs.
6. Office hours	6 hrs
7. Course code	
8. Teacher's academic profile	<p>Academic requirements for most elementary teachers are typically far different from those for teachers of mathematics, for example. The teachers are the main factors of the teaching process has important role performance the teaching program and preparing the students, he is the follower of the results of teaching process and try to progress this process.</p> <p>There are no ready answers to the problems facing education, and teacher preparation in particular, it is clear some frequently cited data do not bring relevant information to the debate.</p> <p>Given the complex interrelationships among teacher academic ability, supply, and diversity, combined with the debate and controversy surrounding the role of teacher testing in the reform movement, it is critical to provide hard data about the impact of testing on the pool of potential teachers.</p>
9. Keywords	
10. Course overview:	<p>Parasitology, the study of parasites and their relationships to their hosts, is one of the most fascinating areas of the biology. While it is entirely proper to classify many bacteria and fungi and all viruses as parasites, parasitology has traditionally been limited to parasitic protozoa, helminthes, and arthropods, as well as those species of arthropods that serve as vectors for</p>

parasites. It follows, then, that parasitology encompasses elements of protozoology, helminthology, and medical arthropodology.

Human parasitology, an important part of parasitology, studies the medical parasites including their morphology life cycle, the relationship with host and environment. The objectives are to study the way or the measurement of parasitic diseases control.

Importance of parasitology

Why do students need to learn the course now? In past time, parasitic infections or parasitic diseases were the most common diseases in the world. Therefore, parasitology played important role on the medicine and public health, none neglect the important of parasitology. With the nearly simultaneous development of antibiotic drugs, synthetic pesticides, and various antiparasitic agents, it was for a time widely believed that the infectious diseases would for all practical purposes disappear from the clinical scene. Someone has asked the question, why do medical students still need to learn parasitology? Before answer the question, let me review the epidemic situation of parasitic diseases in the world. According to the WHO2001 year report, parasitic diseases are still important human diseases. In the world, 210 million people reside in the endemic areas of malaria, 10 million cases with malaria occur every year; 20 million infected individuals was estimated in the world. The increased mobility of large segments of the population, and popularity of the tropics and subtropics as vacation areas, exposes them to a largely undiminished threat of parasitic infection, and the speed of transportation ensures that many return to their native shores before their infections become patent. For these reasons it remains necessary that all physicians have some familiarity with the parasitic diseases, no matter how “exotic”. Global warming is suggested as a possible reason for the eventual spread of diseases now seen primarily in the tropics to more temperate climes. An important development of recent years has been the appearance of the human immunodeficiency virus (HIV) and its sequel, the acquired immunodeficiency syndrome (AIDS), which results in greatly increased prevalence and severity of a number of parasitic, viral, and bacterial diseases. As immunosuppression becomes more widespread, not simply because of AIDS, but also as necessitated by organ transplantation, the result of cancer chemotherapy, or the indiscriminate release of toxic chemicals and carcinogens into environment, heretofore unknown or extremely rare infections are being reported from human. In our country, various parasites have long been recognized as one of the important endemic diseases for many years. So it is considered that

<p>parasitic infection /or parasitic diseases are still one of the important problems in public health in our country. As a candidate for doctor, to learn some knowledge of parasitology is necessary.</p>
<p>11. Course objective:</p> <p>The course will cover different pathogenic and non-pathogenic parasites (protozoan and helminthes) infecting human specially and some of his/her domestic and wild animals in generally.</p> <p>The course including necessary information on various aspects of parasitic infection, geographical distribution of parasites, nomenclature, classification, morphology, lifecycle, information on parasitic disease, their transmission and spreading, parasite diagnosis, prevention and control.</p>
<p>12. Student's obligation</p> <p>The student's obligation throughout the academic year involves their attendance in the lectures, drawing parasite slides, and giving an abstract of the former lecture with daily/weekly quizzes, laboratory activity and monthly exams.</p>
<p>13. Forms of teaching</p> <p>Weekly preparing lectures (hard copy) and students getting by coping it that contain classification, definition, life cycle of parasite and illustrated (software copy-power pint program- windose 2010) that presented by data show and using white board as more facilitated way with different pen colures, and Classroom discussion will done about the studied parasite including life cycle, transmission, information on its pathogenesis, and pathology, clinical manifestation diagnosis which including clinical diagnosis and laboratory diagnosis, treatment, prevention, and control.</p>
<p>14. Assessment scheme</p> <p>Every student must have two examinations (each on 5 marks), one at the mid of the semester, and the other before the end, the weekly quizzes with presence of student activity in laboratory also taken into account by (3 marks) for all.</p> <p style="text-align: center;">(Mean of two examinations) + (weekly quizzes+ activity) = 40%</p> <p style="text-align: center;">Final Grade of the student in Practical parasitology: 40%</p>

15. Student learning outcome:

The objective of the course is to present a foundation of the approach, research, goals and terminology of parasitology and to summarize information on the most recent knowledge of

evolutionary relationship of parasite as well as practical information vital in laboratory and in future. The student may learn different pathogenic and non-pathogenic parasites (protozoan and helminthes) infecting human specially and some of his/her domestic and wild animals in generally. The course including necessary information on various aspects of parasitic infection, geographical distribution of parasites, nomenclature, classification, morphology, lifecycle, information on parasitic disease, their transmission and spreading, parasite diagnosis, prevention and control.

16. Course Reading List and References:

- 1. Atlas of Medical Parasitology.** (2006). Shibs, K.R.; Shoji, U.; Nobumasa, K. and Takeo, M. Kobe University School of Medicine. Kobe-Japan. 1st Edn., 78 pp.
- 2. Medical Parasitology.** (2006). Ethiopia Public Health Training Inivatiative. Dawit, A.; Ephrem, K.; Nagesh, S. et. al., 150 pp.
- 3. Encyclopaedia of Parasitology.** (2008). 3rd Edn., Heinz Mehlhorn, Springer Reference. Springer-Verlag Berlin Heidelberg New Yourk. 1592 pp.
- 4. Diagnosing Medical Parasites: a public health officers guide to assisting laboratory and medical officers.** (2014). Michael, J.C.; Lawrence B.N. and Daryl, B.W. 286 pp.
- 5. Text Book of Medical Parasitology (Protozoology and Helminthology), Text and color atlas,** (2014) by Parija, S. C. 2nd edition, medical books publishers, Chennai, New delhi.
- 6. Medical Parasitology.** (2006) by Assafa, D.; Kibru, E.; Nagesh, S.; Solomon, G.; Deribe, F. and Ali, J. USAID Cooperative Agreement No. 663-A-00-00-0358-00.
- 7. Basic laboratory methods in medical parasitology.** Geneva: World Health organization; 1991. p. 77-8.
- 8. Medical Parasitology - A Practical Approach.** (2018). Ackers JP. Trichomonads. In: Gillespie SH, Hawkey PM, editors. Oxford: Oxford University Press; p. 137.

9. Basic Clinical Parasitology. (2014). Neva FA, Brown H W, editors. 6th ed. ed. London: Prentice Hall International; p. 103	
17. The Topics:	Lecturer's name
18. Practical Topics (If there is any)	
Week 1: Introduction- general terms of Practical Parasitology	Ashna Muhamad-Ali Abubakr

<p>Week 2: Protozoology Sub kingdom: Protozoa 1. Phylum: Sarcomastigophora I. Subphylum: Sarcodina <i>Entamoeba coli</i> <i>Entamoeba histolytica</i> <i>Giardia lamblia</i></p> <p>Week 3: II. Subphylum: Mastigophora <i>Trypanosoma spp.</i> <i>Leishmania spp.</i></p> <p>Week 4: II. Subphylum: Mastigophora <i>Trichomonas vaginalis</i> Subphylum: Ciliphora <i>Balantidium coli</i></p> <p>Week 5: Subphylum: Sporozoa <i>Toxoplasma gondii</i> <i>Babesia sp.</i></p> <p>Week 6: <i>Plasmodium spp.</i> Slides of all <i>Plasmodium</i> sp. stages</p> <p>Week 7: Helminthes Phylum: Platyhelminthes 1. Class: Digenea Trematoda <i>Fasciolopsis buski</i> <i>Heterophyes heterophyes</i></p> <p>Week 8: <i>Fasciola hepatica</i> <i>Clonorchis sinensis</i> <i>Dicrocoelium lanceolatum</i></p> <p>Week 9:</p>	<p>Note: 1. Every lab. takes 2 hrs. 2. In each lecture we talking about most characters that related to practical part including (taxonomic classification morphology- life cycle- pathology- laboratory methods of diagnosis of parasite)</p>
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Paragonimus westermani
Family: Schistosomatidae
Schistosoma haematobium

<p><i>Schistosoma mansoni</i> <i>Schistosoma japonicum</i></p> <p>Week 10: 2. Class: Cestoda <i>Taenia saginata</i> <i>Taenia solium</i></p> <p>Week 11: <i>Hymenolepis nana</i> <i>Dipylidium caninum</i></p> <p>Week 12: <i>Echinococcus granulosus</i> <i>Diphyllobothrium latum</i></p> <p>Week 13: Phylum: Nematelminthes Class: Nematoda <i>Ascaris lumbricoides</i> Week 14: <i>Enterobius vermicularis</i> <i>Necator americanus</i></p> <p>Week 15: <i>Ancylostoma duodenale</i> Week 16: <i>Trichinella spiralis</i> <i>Trichuris trichiura</i></p> <p>Week 17: Class: Acanthocephala <i>Moniliformis moniliformis</i> <i>Bolbosoma</i> sp.</p> <p>Week 18: Phylum: Annelida <u><i>Hirudo medicinalis</i></u></p> <p>Week 19-21: Medical entomology Week 22-24: laboratory methods for diagnosis</p>	
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19. Examinations:

Q./ Diagnose the given sample / or slide.

1. Count other species
2. name of Disease that causes this parasite
3. Draw and label
4. Type of movement
5. What are differences between the nearest species?
6. Write hosts of parasite
7. Name of this plate (life cycle) and indicate the point parts
8. Write the common name of it
9. Write treatment of this parasite
10. Classify this parasite
11. Write the infective stage
12. Write the diagnosis stage
13. Whereas live inside host

20. Extra notes:

21. Peer review

Signature:

Name: Assist. Prof. Dr. KHIDHER NIAZI