****

**Department of Biology**

**College of Education**

**University of Salahaddin Erbil**

**Subject: Medical parasitology**

**Course Book – *For* Year 4)**

**Lecturer's name: Assist prof. Dr.Louis A. Saida**

**Academic Year:  2022-2023 course 1**

**Medical protozoa**

**Course Book**

|  |  |  |
| --- | --- | --- |
| **1. Course name** | **Medical parasitology protozoa and helminthes** | |
| **2. Lecturer in charge** | **Dr. Louis A. Saida Assist prof in med. parasitology** | |
| **3. Department/ College** | **Biology / college of Education** | |
| **4. Contact** | **e-mail: dr.louissaida@gmail.com**  **Tel: (0750 4655148)** | |
| **5. Time (in hours) per week** | **For example Theory: 2**  **Practical:2** | |
| **6. Office hours** | **Availability of the lecturer to the student during the week** | |
| **7. Course code** | **Edb0401** | |
| **8. Teacher's academic profile** | **Personal:**  **Date of Birth: Feb. 1/ 1961**  **Place of Birth: Erbil, Kurdistan Region, Iraq.**  **Nationality: Iraqi- Christian**  **Gender: Male**  **Home address: Ainkawa., Erbil, Kurdistan/Iraq.**  **Office address: Biology, Department, College,of Education/University of Salahaddin /Hawler.**  **Dr.louissaida@gmail.com 009647504655148**  **Higher Education: M.Sc. of Science (Medical parasitology ), 1989 Salahaddin Univrsity. Ph.D. of Science (Medical parasitology), Baghdad University 2005, Title of thesis (Trials** **in treatment of secondary hydatid disease in laboratory mice (Balb /c).**  **Area Of Interests/ Field Of Research:**  **1-medical parasitology**  **2-General biology**  **3-General healthy**  **4-General Zoology**  **Published researches 11 papers** | |
| **9. Keywords** | **Medical parasitology, Course book, 4th. Biology.** | |
| **10. Course overview:**  Importance of studying the medical parasitology. Why do students need to learn the course of medical parasitology? 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 anti-parasitic 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, and science education 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 WHO, 2001 year report, parasitic diseases is still an important human disease. 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. So TDR/WHO has proclaimed that 10 major unconquered human tropical diseases, African trypanosomiasis, Dengue, Leishmaniasis, Malaria, Schistosomiasis, Chagas disease, Leprosy, Lymphatic filariasis , Onchocerciasis . Among them 7 diseases are parasitic in the traditional sense. So it is considered that parasitic diseases are still one of the important problems in public health in our country. That’s why the students of biology need to take course in medical parasitology. | | |
| **11. Course objective:**  Importance of studying the medical parasitology. Why do students need to learn the course of medical parasitology? 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 anti-parasitic 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, and science education 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 WHO, 2001 year report, parasitic diseases is still an important human disease. 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. So TDR/WHO has proclaimed that 10 major unconquered human tropical diseases, African trypanosomiasis, Dengue, Leishmaniasis, Malaria, Schistosomiasis, Chagas disease, Leprosy, Lymphatic filariasis , Onchocerciasis . Among them 7 diseases are parasitic in the traditional sense. So it is considered that parasitic diseases are still one of the important problems in public health in our country. That’s why the students of biology need to take course in medical parasitology. Course objective: The end of the course the students should be able to: (i) demonstrate detailed knowledge and understanding of the biology, life cycles, pathogenesis, diagnosis of parasitic infections in humans and their relevance for human health and strategies for control;  (ii) demonstrate detailed knowledge and understanding of the biology and strategies for control of the vectors and intermediate hosts of human parasites;  (iii) carry out practical laboratory identification of the various parasite stages both free and in tissues and diagnose infections;  (iv) demonstrate specialised skills acquired through taking Modules on: advanced diagnostic, molecular, immunological, genetic, chemotherapeutic, ecological and/or control aspects of the subject;  (v) demonstrate the ability to design a laboratory or field based research project, apply relevant research skills, critically analyse and interpret data, and work with minimal supervision;  (vi) prepare a written report including a critical literature review of relevant scientific publications; and  (vii) show competence in communicating scientific information and findings | | |
| **12. Student's obligation**  Medical parasitology is one of the importance subjects that given to the biology students in the fourth year in education college or another classes in Science College and in Medicine. Medical parasitology is that branch of Microbiology, belonging to the Animal Kingdom, , which deals or study the parasites found or infect man. their morphology, life cycle, prevention, diagnosis, treatment and their pathogenic effects,  In this course the students learn, what is the parasite, what are their types? What are the host, and their types, what is the relationship between the host and the parasite? In this course also the students learn how the human prevent their self against the parasite agents, and how they diagnose the parasites disease, and how they treat the patients. During the concepts of the lecturers of this subject, Students they learn many methods of parasites that infects man, and they know types of animals that acts as reservoir host **or potential source for infection of man. So this subject is very important for studding the students in the biology department.** | | |
| **13. Forms of teaching**  Different forms of teaching will be used to reach the objectives of the course: power point presentations for the head titles, definitions, and life cycles of the parasites, diagnosis, treatments, and prevention of parasitic disease. in addition to discussions .  Grading: The students are required to do closed book exam monthly and at the mid of The semester. Course material required book: Many references are required for study this subject | | |
| **14. Assessment scheme**  During the academic year the students should be examined at least 2-3 exam. And the quizzes examination should be done to the students at least 2 exam per month, to increasing the level of the students with this subject. ‌ | | |
| **15. Student learning outcome:**  The final of the course book the student should be able to:  1- To know what is the medical parasite, and their types, what is the host and their types.  2- The students are able to diagnosis the parasitic disease that infects human.  3- The students are able to how to make prevention from all parasitic disease that may infects man.  4- The students are able to know lifecycle of each parasites.to be able to control the parasitic disease in their live area.  5- The students are able to learn the pathogenicity and symptoms of each parasitic disease that may infect man.  6- The students are able to make comparative study between the parasitic disease of each area and they are able to know the geographic distribution of each parasitic disease that may infects man.  7- The final of this course the students are able to demonstrate the role of insects that transmits the infection of the parasites. | | |
| **16. Course Reading List and References‌:**  For more information about this subject the students can see the following links or books:  • Medical parasitology new Edition by Edward K. Markell and Marietta Voge.  Text Book Of Human, Parasitology, Edited by Lu Gang  • Online lectures in parasitology, University of South Carolina  Companion Animal Parasite Council  • American Society of Parasitology  • ARC-NHMRC Research Network for Parasitology  • Australian Society for Parasitology  • British Society for Parasitology  • Japanese Society of Parasitology  • Korean Society for Parasitology  • An Introduction to Parasitology  • Institute of Parasitology, McGill University | | |
| **17. The Topics:** | | **Lecturer's name** |
| 11. Course objective:/Medical Parasitology/Fourth year / biology  **WEEK:1,2,**  Introduction to medical parasitology.  \* Definition of medical parasitology, sub-division of medical parasitology, what is the parasite, type of the parasites, what is the host, type of the hosts. Some terms are used in parasitology, symbiosis, infection and infestation. Commensalisms, mutualisms, parasitism’s, habitats. Etc. \*Effects of Parasites upon their Hosts, with some examples of each type of effecting. \*Effects of Hosts on the parasite with some examples. Mode of Parasitic Transmission to Man.  **WEEK 3 and 4**  Intestinal and urogenital protozoa: *Entamoeba histolytica*,(causes amoebic dysentery), epidemiology, geographic distribution, pathogenicity, morphology, life cycle, symptoms, diagnosis, prevention, control and treatment of disease. and studying some type of non-pathogenic that may infect man for example :  *E.coli, E. polecki , E.gingivalis, Iodamoeba butschlii, Endolimax nana.*  Soil ameba (Naegleria) is opportunistic amebae. Morphology, pathology, diagnosis, lifecycle, symptoms, prevention and control. Treatment.  **WEEK 5**  *Giardia lamblia* and *Trichomonas vaginalis* (urogenital Flagellates) studying morphology of the parasite, epidemiology, geographic distribution, pathogenicity, morphology, life cycle, symptoms, diagnosis, prevention, control and treatment of disease. Of each of *Giardia lamblia* and *Trichomonas vaginalis* .  **WEEK 6**  *Balantidium coli* (Ciliates), Cryptosporidium parvum and Isospora belli (Sporozoa) ) studying morphology of the parasite, epidemiology, geographic distribution, pathogenicity, morphology, life cycle, symptoms, diagnosis, prevention, control and treatment of disease. Of each of these parasites.  **WEEK 7**  Blood and tissues protozoa parasites:  Trypanosoma *T. brucei* causing sleeping sickness (*T.gambianse* T.rhodesianse) and T.cruzi; causing chagas disease the study include morphology of the parasite, epidemiology, geographic distribution, pathogenicity, morphology, life cycle, symptoms, diagnosis, prevention, control and treatment of disease. Of each of them.  **WEEK 8**: Lieshmania parasites  Leishmaniasis: type of leishmania parasites that infect humans, *Leishmania donovani L.tropica, L.barasiliansis*. morphology, type of disease, geographic distribution,their Life cycle ,Symptoms, Etiology, Epidemiology, Morphology symptoms and treatments. Prevention and control.  **WEEK 9**: Malaria parasites. Genus plasmodium. Types of  Plasmodium (P. falciparum*, P. ovale, P. malariae* and *P. vivax*). the study include morphology of the parasite, epidemiology, geographic distribution, pathogenicity, morphology, life cycle, symptoms, diagnosis, prevention, control and treatment of disease. Of each of the parasites.  **WEEK 10**  *Toxoplasma gondii*; and Babesia (B. microfti). the study include morphology of the parasite, epidemiology, geographic distribution, pathogenicity, morphology, life cycle, symptoms,    **WEEK 11** EXAMINATION TIME: At least the students have 2examinations one of each semester. | | Dr. Louis A. Saida  Assist prof in medical parasitology  Theory time (2 hours /week)  Practical time per week 2hrs. |
| **18. Practical Topics (If there is any)** | |  |
| In this section The lecturer shall write titles of all practical topics he/she is going to give during the term. This also includes a brief description of the objectives of each topic, date and time of the lecture | | Lecturer's name  ex: (2-3 hrs.) |
| **19. Examinations:**  ***1. Compositional***  Examples    1-Explain how, you can prevent yourself from the following parasitic disease:  Amoebic dysentery, Toxolasmosis, Hydatidosis, and Baghdad boil. ?,  2-What are the reasons for distribution of some parasites more than others.…?,  3- Explain Why the parasite *Toxoplasma gondi* causes abortion in pregnancy women…?,  4- Explain how the transmition of following parasitic disease occurs to man ….?  1- Malaria 2- chagas diseas, 3- sleeping sickness.  **2. True or false type of exams:**  **Answer by true or false only all the following. ?**  1-the eggs of *T.trichiura* are less resistant than Ascars eggs.  2- Man is the only known host for *E.vermicularis*.  3- The diagnosis of pin worm infection is made by finding the adult warm or eggs in the faces.  4- The *Trichomonas vaginalis* has only trophozoite stage in its lifecycle.  5-Species of hook warms cannot be distinguished by egg morphology.  6-The malaria parasites are causing anaemia to man during the infections.  7-The parasite that cause abortion to women during the infection is *Balantidium coli.*  **3. Multiple choices:**  Chose the correct answer?  1- P.falciparum , is an example of  a- facultative parasite b- accidental parasite c- Temporary parasite  d- obligate parasite.  2- *F.hepatica*, is the parasite that cause  a- diarrhea b- meningo-encephalitis c- liver disease d- sheep liver fluke  3- Visceral larva migrants, is the name due to a- A.lambricoides b- T.cati c- T.gondi  d- T.canis  4- Elephantiasis, the disease due to a- O.volvulus b- Loa loa c-T.spiralis d- W.bancrofti  5- Thorny headed worm, is a parasite that belong to the  a- Nematodes b- Cestodes c- Protozoa d- Acanthocephalan .  6- T.spiralis, is a parasite that infect human by a- Black fly bite b- Mosquito bite  c- skin d- poorly cooked pork.  7-River blindness, is the disease due to the parasite,  a- Loa loa b- O.volvulus c- Brugia malayi d- D .medinensis  8-The vector of the parasite W.bancrofti, is  a- Culex b- Anopheles c-Aedes d- all of mentioned | | |
| **20. Extra notes:** | | |
| **21. Peer review**  Was dune.‌‌ | | |