Module (Course Syllabus) Catalogue

2023-2024

College/ Institute	Medical Technical Institute	
Department	Medical Laboratory Technique-Morning	
Module Name	Parasitology	
Module Code	PAR 402	
Semester	4	
Credits	6	
Module type	Prerequisite / Core Assist.	
Weekly hours		
Weekly hours (Theory)	(2)hr Class	(3)hr Workload
Weekly hours (Practical)	(2)hr Class	(0.5)hr Workload
Lecturer (Theory)	Hussein Mahmood Abdullah	
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Lecturer (Practical)	Hussein Mahmood Abdullah	
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Course Book

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 related to humans health such as host-pathogen interactions and laboratory diagnostic methods.
Course objectives	This course is designed to: The aim of the course is to develop basic knowledge and skill to identify the parasites, the diseases caused by them and emphasize on the laboratory diagnosis tool for 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 of prevention and control of parasitic diseases . **By microscopic examination .** **1.** Identify the parasites at different stages of life cycle, their vectors and hosts. **2.** Identify the deferent larval stages of the parasites during life cycle and pathogenesis steps . **3.** Apply suitable methods for parasites detection. **4.** Use applicable tools for parasitic disease control and prevention . **5.** Combine between vectors and parasitic disease to make a good control plan.
Student's obligation	1- **Attendance**: This is mandatory and a daily official class attendance record will be maintained. 2- **Tests**: There will be tests and quizzes covering lectures as well as textbook reading assignments, plus a mid-term and final examination. There will be four announced tests and four unannounced quizzes per semester. 3- **Laboratory exercises**: Students taking this course are also to take the laboratory class. Students will be required to wear protective clothing during laboratory exercises. Laboratory reports must be typed

	and submitted no later than seven (7) days after completion of the exercise. 4- **Assignments**: There will be one assignment each before and after mid-term. No late submissions will be accepted without prior consultation and approval of the instructor. 5- **Oral and poster** presentations may be necessary.
Required Learning Materials	1. Materials for the laboratory will be provided by the university 2. Note books for lectures and laboratory reports. 3. Laboratory coats must be worn during laboratory exercises. 4. A hall with data-show device 5. Handouts
Assessment scheme	**10% Mid Term (Theory)** **15% Mid Term (practical)** **8% Quiz** **2% class activity** **10% Lab reports and activity** **15% Assignment (report, homework, seminar)** **20% final practical** **20% final theory**
Specific learning outcome:	Upon completion of the course, students should be able to: 1- To demonstrate the ubiquity and diversity of parasites in the human body and the environment. 2- To illustrate the characteristics features of parasites and the diseases they cause. 3- To explore mechanisms by which parasites cause disease. 4- To show how the human immune system counteracts infection by specific and non- specific mechanisms. 5- To explore the routes of transmission of parasites in hospitals, communities and populations and the methods used to control the spread of infection. 6- To demonstrate the principles of vaccine preparation and the use of vaccines in immunization. 7- To show the reasons for, and the methods for sterilization of equipment and medical preparations from the microbiological point of view.
Course References:	• Text book of Medical Parasitology, 11th edition • Color **Atlas of Parasitology,** Practical Microscopic and Clinical Diagnosis, Harald Theml,M.D.

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 composed of 15 instructional weeks followed by one week of final exam .

Week	Outline theoretical	No. of Hours
1	**Introduction to medical parasitology**	2
2	**Protozoa and medically important classes**. *Entamoeba histolytica*. Nonpathogenic amoeba. Free living pathogenic amoebae	2
3	Protozoa- Ciliates, *Blantidum coli*. Flagellates, *Giardia lamblia*	2
4	Protozoa- Flagellates Trichomonas (urogenital flagellate)	2
5	Protozoa- Kinetoplastida, *Leishmania* .*Trypanosomes*	2
6	Protozoa- Sporozoa, Plasmodium (Malaria.). *Toxoplasma gondii*. *Cryptosporidium spp*. and *Isospora belli*	2
7	Protozoa- Sporozoa, Cryptosporidium spp. and Isospora belli	2
Midterm Exam		
8	**Introduction to medical helminthology.** Platyhelminthes- Cestodes, *T. sagenata, T. solium.*	2
9	Platyhelminthes- Cestodes, *Hymenolepis nana and H. diminuta*	2
10	Platyhelminthes- Cestodes, *Echinococcus granulosus* and *E. multilocularis*. *Diphyllobothrium latum*	2
11	Platyhelminthes- Trematodes , Liver and Lung Flukes, Blood Flukes	2
12	Nematoda- *Enterobius vermicularis* , *Ascaris lumbricoides*, *Strongyloides stercoralis*	2
13	Nematoda- Hook worm and Whipworm, *Filaria* and filariasis	2
14	Medically important arthropods: Insects, medical important vectors	2
Final exam		
Total		**32**

Week	Practical Outline	No. of Hours
1	**Introduction to parasitology laboratory techniques and procedures, Laboratory Safety Guidelines and Microscope use (Handout & Appendix)**	2
2	**Laboratory Procedures for Stool Examination. Procedures For Blood And Tissue Parasites. Procedures For Specimens Other Than Stool Or Blood.**	2
3	**Permanent Slide**: *Entamoeba histolytica* (trophozoite and cyst). **Permanent Slide**: *Entamoeba coli* (trophozoite and cyst).	2

	Permanent Slide: *Blantidum coli* (trophozoite and cyst).	
4	**Permanent Slide**: *Giardia lamblia* (trophozoite and cyst). **Permanent Slide**: *Trichomonas vaginalis* (trophozoite). **Permanent Slide**: *Trichomonas hominis* (trophozoite).	**2**
5	**Permanent Slide**: *Leishmania spp*. (amastigote and Promastigote). **Permanent Slide**: female of sand fly. **Permanent Slide**: *Trypanosoma spp*. (Epimastigote Trypomastigote). **Permanent Slide**: female of Tsetse fly and kissing bug.	**2**
6	**Permanent Slide**: *Plasmodium* spp. (ring-form trophozoite, Schizont, Gametocyte) **Permanent Slide**: female of mosquito **Permanent Slide**: *Toxoplasma gondii* (Oocyst, Tachyzoite, Bradyzoite, Tissue cysts). **Permanent Slide**: Cryptosporidium spp**.** (Thin and Thick walled Oocyst). **Permanent Slide**: *Isospora belli* (Mature Oocyst).	**2**
7	**Permanent Slide**: Cryptosporidium spp**.** (Thin and Thick walled Oocyst). **Permanent Slide**: *Isospora belli* (Mature Oocyst).	**2**
Midterm Exam		
8	**Introduction to medical helminthology.** **Permanent Slide**: *T. sagenata* (Scolex, mature segment, graved segment and egg) **Permanent Slide**: *T. solium* (Scolex, mature segment, graved segment and egg)	**2**
9	**Introduction to medical helminthology.** **Permanent Slide**: *H. nana* (Scolex, mature segment, graved segment and egg) **Permanent Slide**: *H. diminuta* (Scolex, mature segment, graved segment and egg)	**2**
10	**Permanent Slide**: *E. granulosus* (adult worm, egg and Hydatid cyst) **Permanent Slide**: *E. multilocularis* (adult worm, egg and Hydatid cyst) **Permanent Slide**: *Diphyllobothrium latum*(Scolex, proglottids and egg) **Permanent Slide**: crustaceans-Cyclops	**2**
11	**Permanent Slide**: Liver Flukes-*Fasciola spp*. (adult worm and egg) **Permanent Slide**: Lung Flukes-*Paragonimus spp*. (adult worm, egg and crab) **Permanent Slide**: Blood Flukes-*Schistosoma mansoni* (adult worm and egg) **Permanent Slide**: Blood Flukes- *Schistosoma japonicum* (adult worm and egg) **Permanent Slide**: Blood Flukes- *Schistosoma haematobium* (adult worm and egg)	**2**
12	**Permanent Slide**: *Entrobus vermicularis* (adult female and egg) **Permanent Slide**: *Ascaris lumbricoides* (adult worm and egg). **Permanent Slide**: *Strongyloides stercoralis* (adult female, egg, rhabditiform larvae)	**2**
13	**Permanent Slide**: Hook worm (adult female or male and egg) **Permanent Slide**: Whipworm (adult female or male and egg) **Permanent Slide**: Filaria- Wuchereria bancrofti, Brugia malayi (adult and Larvae) **Permanent Slide**: Filaria- Loa loa, Onchocerca volvulus (adult and Larvae)	**2**
14	**Permanent Slide**: Anoplura- pubic crab louse. **Permanent Slide**: Hemiptera- reduviid and bedbug. **Permanent Slide**: Siphonaptera- cat flea and human flea	**2**
Final exam		
Total		**32**

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……..**

External Evaluator

I confirmed that the contents of this syllabus are commonly more explicit and follows the principles and rules in medical parasitology subjects.

Lecturer: pshtewan Dhahir Majeed