Course Syllabus of Medical Parasitology II

Faculty: Medicine and Health Science
Department: Health sciences
Program: Bachelor in Medical Laboratories

I. General information about the course instructor :

Name	Dr. Rashad Abdul-Ghani	Office Hours(2 Hours Weekly)					
Location & phone number	737259467	Sat	Sun	Mo n	Tue	Wed	Thu
Email	r.abdulghani@ust.edu			2			

II. General information about the course:

1.	Course Title :	Medical Parasitology II				
2.	Course Code and Number :	BML246				
3.	Credit Hours :	Credit Hours				Total
		Theoretical	/Seminar/Tutorial	Practical	Training	
		2	---	*1*	---	3
4.	Study Level and Semester:	2nd year/ 2nd semester				
5.	Pre-requisites :	BML233				
6.	Co-requisites:	None				
7.	Program in which the course is offered:	Bachelor in Medical Laboratories				
8.	Teaching Language:	English				
9.	Instruction location:	University of Science and Technology, Sana'a ,Yemen				

جامعة العلوم والتكنولوجيا
إدارة ضمان الجودة والاعتماد
معتمد
APPROVED

الموصف : د. رشاد عبد الغني

المراجع : ا.د.محمد مهدي
د. مجاهد نصار

١٥ / ١٠

رئيس القسم: د. عبد الحبيب ردمان

عميد الكلية: د. عبد الله المخلافي

III. Course Description

This course provides undergraduate medical laboratory students with the essential knowledge and practice about medically important protozoa and protozoan diseases that prepare them for the course of Diagnostic Parasitology, with special reference to protozoa prevalent in Yemen. It provides them a background on the epidemiology, morphology, life cycles and mode(s) of transmission, pathogenesis and clinical features, laboratory diagnosis, prevention and control of protozoan parasites. The course is delivered through lecture presentations and tutorials, with the adoption of discussion-oriented and interactive teaching strategies. The practical section is delivered through laboratory demonstration and hands-on practice to ensure the greatest achievement, which is constantly assessed through laboratory logbooks, reports and portfolios of the students. Medical parasitology I course is a prerequisite

IV. Course Aims: This course aimed to

1. Provide the students with a theoretical background about medical protozoology and medically important protozoa.
2. Enable the students to integrate their basic knowledge of protozoa in the appraisal of health problems and to propose effective approaches to their diagnosis, prevention and control.
3. Equip the students with the practical skills to identify and report the diagnostic stages of protozoan parasites.
4. Enable the students to effectively manage time, be involved in collaborative teamwork and use internet resources to learn about medical protozoology.

V. Course Intended Learning Outcomes (CILOs) :

- **After completing this course, students will be able to:**

1. Define major protozoology concepts, outline medically important protozoa and describe systems of the body infected with each species.
2. Describe the epidemiology, morphology, life cycles, pathogenesis and main clinical manifestations, laboratory diagnosis, prevention and control of amoebic and flagellate parasites.
3. Describe the epidemiology, morphology, life cycles, pathogenesis and main clinical manifestations, laboratory diagnosis, prevention and control of ciliate and apicomplexan parasites as well as microsporidia.
4. Recognize zoonotic protozoal infections and the role of animal reservoir hosts and/or vectors in their transmission and epidemiology.
5. Construct charts and mind maps for the classification of protozoan parasites in relation to certain characteristics with emphasis on diagnosis.
6. Critically analyze and plan solutions for endemic protozoal health problems in Yemen and the region.
7. Design cost-effective approaches to the diagnosis and control of protozoal infections in the region by integrating theoretical and practical concepts of protozoology.
8. Properly use the microscope to detect and differentiate the diagnostic stages of protozoa on fixed slide spots.
9. Detect and distinguish between diagnostic stages of protozoa from specimen suspensions under microscope.
10. Manage time and communicate well with colleagues and staff and follow the code of conduct adopted by the institution.

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VI. Course Contents

Theoretical Aspect:

No.	Course Units	Sub-topics	Week due	Contact Hours
1	**Introduction to protozoa**	•Definitions and basic structure of protozoa •Classification of medically important protozoa	1st	2
2	**Phylum: Sarcomastigophora** **Sub-phylum: Sarcodina**	• Parasitic amoebae - *Entamoeba histolytica* - *E. coli and other commensal amoebae* • Pathogenic free-living amoebae - *Acanthameba* species - *Naegleria fowleri*	2nd, 3rd	4
3	**Phylum: Sarcomastigophora** **Sub-phylum: Mastigophora I**	• Intestinal flagellates - *Giardia lamblia* - *Dientamoeba fragilis* - *Trichomonas hominis* • Urogenital flagellate *Trichomonas vaginalis*	4th, 5th	4
4	**Midterm exam**		6th	2
5	**Phylum: Sarcomastigophora** **Sub-phylum: Mastigophora II**	• Haemoflagellates - *Leishmania* species (causing cutaneous and mucocutaneous leishmaniasis) - *Leishmania* species (causing visceral leishmaniasis) - African trypanosomes: *Trypanosoma brucei gambiense/rhodesiense* - American trypanosome: *Trypanosoma cruzi*	7th,8th,9th,10th	8
6	**Phylum: Ciliophora**	- *Balantidium coli*	11th	2
7	**Phylum: Apicomplexa**	• Tissue coccidia - *Toxoplasma gondii* • Malaria parasites -*Plasmodium falciparum* - *Plasmodium vivax* - *Plasmodium ovale* - *Plasmodium malariae* - *Plasmodium knowlesi* • Intestinal coccidian - *Cryptosporidium* species - *Cystoisospora belli* - *Cyclospora cayetanensis*	12th,13th,14th	6
8	**Uncertainly classified protozoa**	• Microsporidia	15th	2
9	**Final theoretical exam**		16th	2
Total number of weeks and hours			16	32

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Second: Practical/Tutorial/Clinical Aspects :			
No.	Practical/Tutorial/Clinical topics	No. of Weeks	Contact Hours
1.	• **Amoebae** - Fixed microscope spots and slide mounts from stool suspensions of *E. histolytica* and *E. coli* (trophozoite and cyst stages) - Fixed microscope spots of *Acanthamoeba* species (trophozoite and cyst) and *N. fowleri* (trophozoite)	2nd, 3rd	4
2.	• **Flagellates** - Fixed microscope spots and slide mounts of *G. lamblia* (trophozoite and cyst stages) - Fixed microscope spots of *D. fragilis* (trophozoite) - Fixed microscope spots of *T.vaginalis* (trophozoite)	4th , 5th	4
3.	• ***Leishmania* species** - Fixed microscope spots of *Leishmania* species amastigote and promastigote stages	6th	2
4.	• **Trypanosomes** - Blood smears of *T. rhodesiense/ gambiense* trypomastigotes - Blood smears of *T. cruzi* trypomastigotes - Tissue smears of *T. cruzi* amastigotes	7th,8th	4
5.	• ***Toxoplasma gondii*** - Fixed microscope spots *T. gondii* trophozoites and oocysts.	9th	2
6.	• **Malaria parasites** - Blood smears of the different stages of *Plasmodium* species.	10th,11th,12th 13th	8
7.	• **Intestinal coccidia** - Fixed microscope spots of oocysts of *Cryptosporidium* species, *C. belli* and *C. cayetanensis*	14th	2
8.	• **Final practical exam**	15th	2
Total number of weeks and hours		14	28

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