هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

اعتماد NCAAA T4 2020

Course Specifications

Course Title:	Medical Parasitology
Course Code:	CLS 362
Program:	**Bachelor of Science in Clinical Laboratory Science (BSCLS)**
Department:	**Clinical Laboratory Science (CLS)**
College:	**College of Applied Medical Sciences - Al-Dawadmi Campus**
Institution:	**Shaqra University**

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A. Course Identification

1. Credit hours: (2+1) credit hours
2. Course type **a.** University ☐ College ☐ Department ☒ Others ☐ **b.** Required ☒ Elective ☐
3. Level/year at which this course is offered: Level six /third year
4. Pre-requisites for this course (if any)**:** CLS 241
5. Co-requisites for this course (if any)**:** None

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**	45	75%
2	**Blended**	15	25%
3	**E-learning**		
4	**Distance learning**		
5	**Other**		

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	45hours
2	**Laboratory/Studio**	30 hours
3	**Tutorial**	
4	**Others** (specify)	
	Total	75 hours

B. Course Objectives and Learning Outcomes

1. Course Description

This course deals with the classification, morphological characteristics, life cycles, pathogenicity, epidemiology of parasites, namely: Protozoa- pathogenic and non-pathogenic amoebae,free living pathogenic amoebae, intestinal and urogenital flagellates, blood and tissue flagellates, ciliates, malarial parasites and other coccidia. Helminths- Cestodes (pseudophyllidea and cyclophyllidea), Nematodes (intestinal and tissue worms), Trematodes (Intestinal,hepatic and lung flukes). The clinical presentation of the diseases caused by these parasites will be fully discussed, as well as their transmission, prevention and control, and laboratory diagnosis.

2. Course Main Objective

Explain and understand the characteristics of parasites of medical importance to man with emphasis on the morphology, epidemiology, pathogenicity, laboratory diagnosis of diseases, distribution and life cycles as well as preventive measures against infection;

- ❖ Perform the different laboratory procedures contained in the series of activities to explain the characteristics of parasites of medical importance to man with emphasis on the morphology, epidemiology, pathogenicity, laboratory diagnosis of diseases, distribution and life cycles as well as preventive measures against infection; and
- ❖ Acquire the basic concepts of quality assurance and safety in the performance of laboratory procedures

3. Course Learning Outcomes

	CLOs	Aligned PLOs
1	**Knowledge and Understanding**	
1.1	Recognize the life histories of parasites of medical importance in relation to transmission, prevention and control, epidemiology &humans-parasites interaction during parasitic infections	K1
1.2	Recognize the clinical significance of laboratory procedures in the diagnosis and treatment of diseases.	K1
2	**Skills :**	
2.1	Explain the development of parasites in the human body in relation to clinical signs and potential pathology, including an outline of key interactions between parasites and immune and genetic host factors;	S1,S2,S3
2.2	Demonstrate the public health significance of parasites in humans including the potential interactions between infection with specific parasites and other agents of disease; and apply principles of laboratory safety, including Universal Precautions	S3,S2
3	**Values:**	
3.1	Communicate properly and ethically with the patients in a serious and respectable manner to have relevant data to their complaints;	V1,V2
3.2	Demonstrate professional conduct and interpersonal communication skills with patients, laboratory personnel, other health care professionals, and with the public.	V3,V4

C. Course Content

week No	List of Topics	Contact Hours(Theory 3+ Practical 2)
1&2	**Introduction to medical parasitology** • Parasites: Types of parasites • Host : Types of host • Host parasite relationship • Life Cycle of Parasites, Pathogenesis Immunity in Parasitic Infection	10
3	**Introduction to Protozoa**: • General Features, Terminologies Used in Protozoology, Reproduction, Life Cycle , Classification of Protozoa	5

	• History and Distribution; Morphology, Life Cycle, Clinical Features Laboratory Diagnosis, Treatment Prophylaxes of: -	
4	**Intestinal protozoa**: - Amoeba: *Entamoeba histolytica* **Intestinal, Oral and Genital Flagellates** *Giardia lamblia, & Trichomonas vaginali,*	5
5&6	**Hemoflagellates** Blood and Tissue Protozoa**:** *Trypanosomes, Leishmania* **Malaria Parasites and Babesia,**	10
7	**Coccidia**: *Toxoplasma gondii; Isospora belIi,; Cryptosporidium parvum Cyclospora cayetanensis ;Blastocystis hominis ; Sarcocystis* **Microsporidia** **Ciliate :***Balantidium coli*	5
8	**Introduction to Helminths**: : Phylum Platyhelminthes Phylum Nemathelminthes (Nematoda) Important Features of Helminths Zoological Classification of Helminths	5
9	**Intestinal Nematodes: Soil-Transmitted Helminths (STH)** Trichuris trichiura;Ascaris lumbricoides;Strongyloides stercoralis	5
10	**Hookworm:** *Ancylostoma duodenale Necator americanus ;Trichostrongyliasis;* *Enterobius vermicularis ;Ascaris lumbricoides* **Intestinal Nematodes: Non-Soil Transmitted Helminths** *Enterobius vermicularis;Trichinella spiralis*	5
11	**Filarial Worms causing** Lymphatic Filariasis *Wuchereria bancrofti; Brugia malayi; Brugia timori* **Filarial Worms Causing Subcutaneous Filariasis** *Loa loa;Onchocerca volvulus;Subcutaneous Filariasis;Dracunculus medinensis*	5
12	**Cestodes**: Tapeworms; Classification of Cestodes;Tapeworms: General Characteristics **Pseudophyllidean Tapeworms** *Diphyllobothrium latum*	5

	Cyclophyllidean Tapeworms *Taenia saginata and Taenia solium;Echinococcus multilocularis Hymenolepis nana;Hymenolepis diminuta*	
13	**Trematodes:** Flukes Classification of Trematodes Flukes: General Characteristics Life Cycle **Blood Flukes** Hermaphroditic Flukes: *Schistosoma spp* **Liver Flukes**; *Fasciola hepatica* **Intestinal Flu**kes: *Fasciolopsis buski, Heterophyes heterophyes* **Lung Flukes**: *Paragonimus westermani*	5
14	**Medical entomology** Insects, ticks, and other related vectors Parasitic & Zoonotic Diseases of Public Health Importance in KSA	5
15	Diagnostic methods in parasitology	5
16	**Revision**	
…		
Total		75

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	**Knowledge and Understanding**		
1.1	Discuss the life histories of parasites of medical importance in relation to transmission, prevention and control	a) Interactive Lecture/Discussion (b) Report Back Session (c) Power point/ Multimedia Presentation (d) CD/Video viewing (f) Large Group Discussion (g) Reading (h)Online assignment /Assigned Homework	(a) Paper and Pencil Tests (b) Oral Reports (c) Open-book examinations and Closed-book examinations (d) Tests and quizzes (f) Assignments (g) Final written examination at the end of semester
1.2	Review the key features of the epidemiology of major parasites in humans, including the role of human behavior in transmission;		
…	Recognize the clinical significance of laboratory procedures in the diagnosis and treatment of diseases		
2.0	**Skills**		
2.1	Explain the development of parasites in the human body in relation to clinical signs and potential pathology, including an outline of key interactions between parasites and immune and genetic host factors;	a)Teaching and learning in English to improve student a) skills. (b) Training on numerical skills and data presentation. (c) Student involvement in seminars. (d) Internet search and assignments	a) Written presentation (essay, report, reflective paper etc.) (b) Oral presentation (c) Group work (d) Discussion/debate/role play (e) Seminar evaluation ((f) Marks given to for good reports and presentations
2.2	Analyze the advantages and disadvantages of different approaches to the diagnosis of parasites		
…	Relate laboratory test results to common disease processes by recognizing the		

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
	principles and methodologies practiced in the parasitology department	c)Laboratory classes	
3.0	**Values**		
3.1	Demonstrate professional conduct and interpersonal communication skills with patients, laboratory personnel, other health care professionals, and with the public	(a) Assignment (b) Internet search (c) Group dynamics (d) Online Assignment /Assigned Homework (e) Small Project	(a) Journal (b) Portfolio (c) Group work (d) Oral examination
3.2	Establish and maintain continuing education as a function of growth and maintenance of personal and professional competence.		
…			

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	1st Midterm Test	6	15%
2	2nd Midterm Test	12	15%
3	Attendance & Quizzes	1-15th	5%
4	Online assignment & Presentation	7th and 13th	5%
5	Practical midterm& activities	6/12th	20%
6	Final Exam	15	40%
7	Total		100%

***Assessment task** (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice :

(a) Office hours (4 hours / week / staff) (b) Regular meeting with course organizer and the team leader.

(c) Course 3 hours per day, 5 days a week for any inquiry and support for the students

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	• Mahmud, R., Ai Lian Lim, Y., & Amir, A. (2017). Medical Parasitology A Textbook. Gewerbestrasse 11, 6330 Cham,, Switzerland: Springer International Publishing AG The registered company address is:. doi:ISBN 978-3-319-68794-0 ISBN 978-3-319-68795-7 (eBook) https://doi.org/10.1007/978-3-319-68795-7 • Paniker, C., & Ghosh, S. (2018). *Paniker's Textbook of MEDICAL PARASITOLOGY* (Eighth Edition: ed.). New Delhi 110 002,, India: Jaypee Brothers Medical. doi:ISBN: 978-93-5270-186-5 • Cheesbrough, M. (2009). *District Laboratory Practice in Tropical Countries* (Second Edition ed., Vol. Part 1). New York, United States of America: CAMBRIDGE UNIVERSITY PRESS. doi:ISBN-13 978-0-521-67630-4
Essential References Materials	International Journal of Parasitology Research ❖ Internet Journal of Parasitic Diseases ❖ Journal of Parasitology and Vector Biology ❖ ❖ ❖ Open Parasitology Journal
Electronic Materials	The American Society of Parasitologists, (http://amsocparasit.org) ❖ http://www.la-press.com/human-parasitic-diseases-journal-j142 ❖ http://www.hindawi.com/journals/jpr/ ❖ http://www.epu-eg.com/ ❖ http://www.parasitesonline.net/ http://pathmicro.med.sc.edu/book/parasit-sta.htm
Other Learning Materials	Parasitology Atlas

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classrooms ready and equipped with educational media ❖ Lecture rooms are air conditioned with at least 35 seats ❖ Labs equipped with material for teaching ❖ LCD projectors are available in the lecture rooms ❖ Smart Board available in the lecture rooms ❖ Laptop and desktop computers ❖ Central printer and scanner ❖ Up-to-date scientific books in the library
Technology Resources (AV, data show, Smart Board, software, etc.)	LCD Projector ❖ Smart Board ❖ Internet (Wifi) connection in the lecture and laboratory rooms ❖ Desktop computer and microphone in lecture rooms
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	Light microscopes ❖ Microscope with Video cameras linked to TV circuits ❖ Fluorescent microscope ❖ ELISA machinePCR ❖ Centrifuge, slides, dishes/plates, safety cabinets, hoods, disposals (tips, tubes, etc.) ❖ Animation models ❖ Parasites Slides ❖ Learning program (CD)

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Regular evaluation of the theoretical and practical parts of the course to identify the weaknesses areas	Teaching staff	course report
Confidential completion of standard course evaluation questionnaire	Students	Course Evaluation Template
Regular annual evaluation of the program	Head of the Department Quality Committee	Annual program report

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)
Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	Department of Clinical Laboratory Science Council
Reference No.	2/1442
Date	10/01/2021