هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission
اعتماد
NCAAA
2024
TP-153

Course Specification
(Bachelor)

Course Title:	**Parasitology**
Course Code:	**BIO-1343**
Program:	**Bachelor of Science in Biology**
Department:	**Biology**
College:	**Science**
Institution:	**Imam Mohammad Ibn Saud Islamic University**
Version:	02
Last Revision Date:	September 29, 2024

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A. General information about the course:

1. Course Identification

1. Credit hours: (3 (2 Lectures + 2 Laboratory + 0 Tutorials))					
2. Course type					
A.	☐ University	☐ College	☒ Department	☐ Track	☐ Others
B.	☒ Required		☐ Elective		
3. Level/year at which this course is offered: (Level 3 / Second Year)					
4. Course General Description:					
This course aims to educate students about parasitic infections, their significance, and the hosts that are susceptible to them. It also covers the host-parasite relationships and emphasizes the biology of parasites, including their classification and morphological features. The coursework covers unicellular protozoal parasites and helminths, with a focus on medically important parasites. By studying the life cycle of parasites, students learn to identify the different developmental stages and modes of transmission. The course also provides an overview of the epidemiology of parasitic infections, including endemic and epidemic diseases, and preventive and control measures. Students will gain specialized knowledge in identifying appropriate clinical specimens and laboratory methods required for diagnosing parasitic infections.					
5. Pre-requirements for this course (if any)**:**					
None					
6. Co-requisites for this course (if any)**:**					
None					
7. Course Main Objective(s):					
By the end of this course, the student will be able to achieve the following objectives: 1. Develop an understanding of the nature of parasitic associations and appreciate their significance. 2. Understand the terminology commonly used in parasitology. 3. Understand the ecology and life cycles of various host-parasite associations. 4. Develop an understanding of the physiological, morphological, and behavioural modifications needed to adopt a parasitic lifestyle.					

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	24	80%
2	E-learning	6	20%
3	Hybrid ● Traditional classroom ● E-learning	-	-
4	Distance learning	-	-

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures**	30
2.	**Laboratory/Studio**	20
3.	**Field**	
4.	**Tutorial**	
5.	**Others (specify)**	
Total		50

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with the program	Teaching Strategies	Assessment Methods
1.0	**Knowledge and understanding**			
1.1	Outline the major taxonomic groups of the medically important parasites and their characteristic morphologic features.	1.1-1.2	-PowerPoint presentations -Direct interactions	Lecture discussions -Short quizzes – Exams -Homework
1.2	Explain the various host-parasite relationships, and the parasitic infections responsible for clinical diseases in human and animals.	1.1-1.2	-PowerPoint presentations -Direct interactions	Lecture discussions -Short quizzes – Exams -Homework

Code	Course Learning Outcomes	Code of CLOs aligned with the program	Teaching Strategies	Assessment Methods
1.3	Describe life cycles of the main parasitic groups including protozoal and helminth parasites, and the related appropriate preventative and control measures.	1.1-1.2	-PowerPoint presentations -Direct interactions	Lecture discussions -Short quizzes -Presentations -Homework -Search on the net -Exams
1.4	Identify the common transmission modes of parasitic infections, and the proper clinical specimens necessary to establish a laboratory diagnosis.	1.1-1.2	-PowerPoint presentations -Direct interactions	-Lecture discussions -Short quizzes -Presentations -Homework -Search on Net -Exams
2.0	Skills			
2.1	Employ the proper laboratory methods and techniques to diagnose and differentiate the various parasitic infections.	2.1	-Demonstrations -Motivate students to work cooperatively with their classmates to develop individual skills.	-Lab discussions -Lab performance -Lab reports
2.2	Write a short proposal and conduct minor laboratory work to investigate the focused parasites using microscopy and other technical methods.	2.1-2.2	-Encourage Students to increase their mental thinking	-Lab discussions -Lab performance -Lab reports
2.3	Interpret the laboratory results using the acquired technical skills, and relate the findings to the	2.1-2.2	-Encourage Students to increase their mental thinking	-Lab discussions -Lab reports -Lab Exam

Code	Course Learning Outcomes	Code of CLOs aligned with the program	Teaching Strategies	Assessment Methods
	corresponding clinical parasitic infections.			
3.0	Values, autonomy, and responsibility			
3.1	Perform the assigned work independently in a safe environment and cooperate effectively with a team.	3.1	-Motivate students to ask questions and respond to the teacher's questions. -Encourage the students to work in a team	-Reports -Participations
3.2	Communicate issues of parasitology clearly, and present the scientific data through oral presentations and written formats.	3.1-3.2	-Reports Presentations	-Reports -Presentations
3.3	Adhere to the relevant ethics while working in the field of parasitology.	3.1-3.2	-Reports -Seminars	-Reports

C. Course Content

No	List of Topics	Contact Hours
1.	Course Introduction Grading; the significance of parasitism in world affairs; general principles and concepts; transmission; factors influencing parasitism; outcomes and implications of parasitism Outline of "areas of responsibility" for selected groups of parasites.	2
2.	Introduction to the protozoa. Terminology, structures, major life cycle events, and systematics.	2
3	● Amoebae. General: structure, life history Amebiasis: course of infection, pathology, treatment and prognosis Epidemiology: of intestinal amoebae Diagnosis: various techniques.	2
4	Flagellates (intestinal and urogenital). General: structure, life history.	4
5	Hemoflagellates of humans.	4

	General: structure and life history Leishmania: Kala-azar, cutaneous and mucocutaneous Trypanosomes: trypanosomiasis & world affairs, African and American trypanosomiasis.	
6	● Apicomplexa. General: anatomy, structure, life history General Coccidiosis: economic impact in animals, role as human pathogens Toxoplasma, Eimeria & Cryptosporidium: epidemiology and course of infection.	2
7	● Plasmodium. General: life history and course of infection Malaria: pathology, symptoms, treatment and prognosis Malaria and human affairs Current research on malarial control Malaria and the genetics of resistance.	2
8	● Introduction to Trematoda General: Adult anatomy/ reproductive biology; life cycles/development	2
9	● Schistosomes. General: course of infection, histopathology, treatment and prognosis Schistosomiasis and human affairs: antigenic mimicry Ecological models: approaches to parasite control Cercarial dermatitis.	2
10	● Other Trematodes. Liver flukes life histories, epidemiology, and pathology Lung flukes: life histories, epidemiology, and pathology.	2
11	● Cestodes. General: life history patterns among cestodes Pseudophyllidea of humans: dibothriocephaliasis and sparganosis Cyclophyllidiea of humans: Taenia and Echinococcus Larval tapeworms: human disease.	2
12	● Nematodes. ● Enterobia: clinical manifestations, treatment/prognosis, parasitism & human institutions Trichinella: course of infection, diagnosis/treatment, epidemiology, moral implications Intestinal nematodes of humans: the diseases, intestinal nematodes and human nutrition Hookworm disease Filariasis: course of infection, pathology, treatment and control.	2
13	● Parasitism and World Affairs ● Molecular techniques in control and prevention of parasitic disease Why are there no vaccines?	2
Total		**30**

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	**Midterm 1**	**Around 6th - 7th week**	**15%**

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
2.	Midterm 2	Around 11th -12th week	15%
3.	Quizzes, Attendance, Participation, Homework.	All the semester	10%
4.	Lab reports.	All the semester	5%
5.	Lab Exam.	Around 15th week	15%
6.	Final Exam.	Around 15th -16th week	40%
7.	Total		100%

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.).

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	• Ruth Leventhal and Russell F. Cheadle (2011) Medical Parasitology. A self-instructional text (6th edition) X. F.A. Davis Co., Philadelphia ISBN: 080362543. • Roberts & Janvy. Foundations of Parasitology, 8th edition, (2008). ISBN-13: 978-0073028279.2015. Practical guide to diagnostic parasitology (2nd edition) American Society for Microbiology, Washington DC, USA.ISBN: 1555814573.
Supportive References	Atlas of Human Parasitology (5th edition) ISBN: 0891891676 American Society for Clinical Pathology, Chicago, U.S.A. • Lynne S. Garcia (2006).
Electronic Materials	http://whqlibdoc.who.int/publications/9241544104_(part1).pdf . http://whqlibdoc.who.int/publications/9241544104_(part2).pdf).
Other Learning Materials	CDs for Parasitology.

2. Required Facilities and equipment

Items	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Each classroom is equipped with PC and retro projector with a maximum of 30 students.
Technology Resources (AV, data show, Smart Board, software, etc.)	The computers are equipped with different software.
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	Specific laboratory equipment for this course including posters, models of different experimental animals, dissection instruments, light microscopes, dissection microscopes, microtome instruments, slide preparations, mixer, fluorescent microscopes, ELISA

Items	Resources
	unit for detecting Ag-Ab reactions special for parasitology and specific stains, centrifuges, incubators, ovens and other glass wares.

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	**Students**	**Direct**
Effectiveness of Students assessment	**Course coordinator**	**Direct**
Quality of learning resources	**Peer Reviewer**	**Indirect**
The extent to which CLOs have been achieved	**Specialized committees**	**Indirect**
Other	**Faculty**	**Indirect**

Assessors (Students, Faculty, Program Leaders, Peer Reviewers, Others (specify)

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	**HEAD OF THE BIOLOGY DEPARTMENT**
REFERENCE NO.	
DATE	