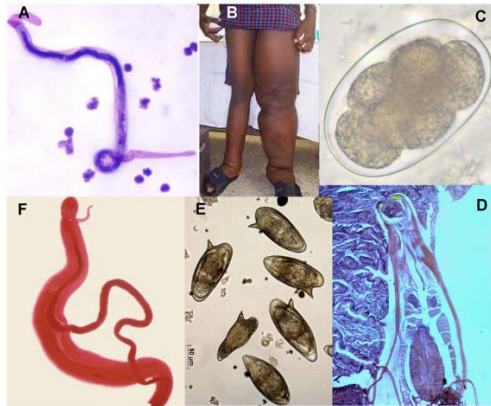


Northern Border University  
Faculty of Medicine  
Department of MICROBIOLOGY

## **Parasitology – 1212221**

(Core course)



**2<sup>nd</sup> year MBBS (IV)**

**Credit Hour – 2**

**Students Study Guide**

**2022-2023**

**Coordinator: Prof. MOHAMED SOLIMAN**

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## **Introduction:**

This course is intended to help the students to gain the basic knowledge and skills to deal with Medical Parasitology and Medical Entomology in the Kingdom of Saudi Arabia, therefore, should not be restricted only to endemic diseases but must be broad-based. It should include a reasonable amount of knowledge of the fundamental principles and factors which operate in the acquisition, establishment, and maintenance of different parasitic diseases. Furthermore, knowledge of the parasitic diseases prevalent in neighboring countries and to meet these diverse needs and conditions.

The course given to medical students will emphasize several aspects of parasites (Helminthology, Protozoology, and Entomology) comprising: Geographical distribution, morphology, life cycle, pathogenesis, clinical picture, complication, diagnosis, treatment, prevention, and control. The student should be able to deal with different parasitic diseases and their management.

The student will develop concepts and a sufficient understanding of the parasitic basis of various disease processes, which would enable him to pursue post-graduate studies and continuing medical education.

## **Course Contributors:**

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## **Structure of the course**

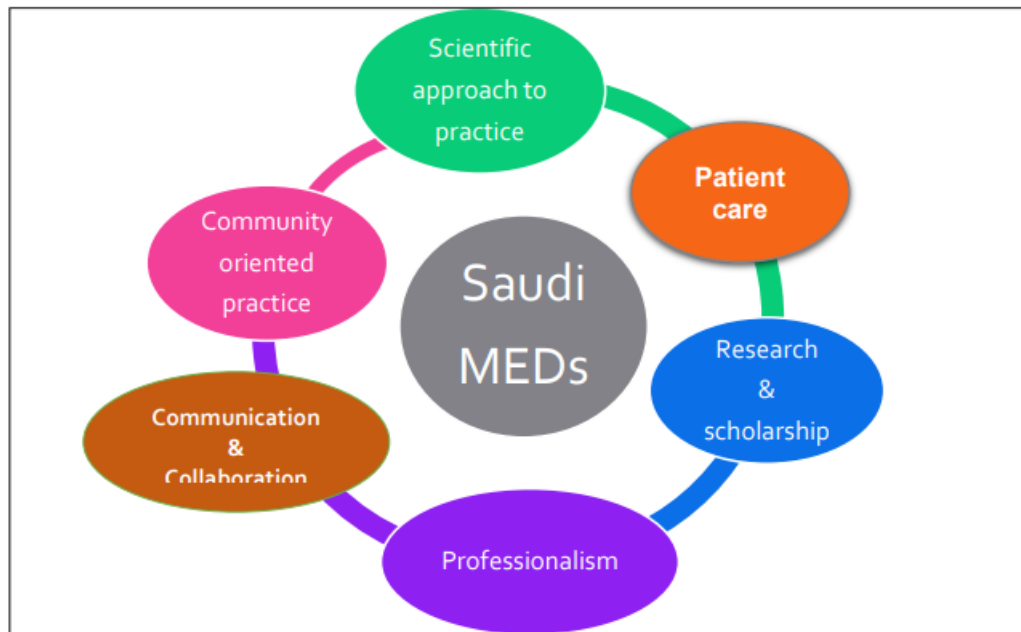
The main objective of this course is to provide basic information on parasitic infections which are emerging as important health problems all over the world. The core course has been designed to show the various aspects of parasitic infections for medical students, mainly the undergraduates, and others who are interested in the study of parasitic infections.

This course consists of many sections. Section I is an introduction to the basic concepts in parasitology with the general host immune response to parasitic infections. Sections II, III, and IV deal with helminths, protozoa, and parasitic arthropods respectively. Each parasite is discussed under various items including geographical distribution, morphology, life cycle, pathogenesis, pathogenicity, clinical manifestations, diagnosis, and treatment. Finally, prevention and control are also discussed.

The course is also provided with simplified life cycle illustrations, and schematic diagrams of various stages of the parasite.

## **General learning outcomes of the program**

The learning outcomes for the Program of Bachelor of Medicine and Bachelor of Surgery "MBBS" are designed to fulfill the Saudi Medical Education Directives Framework "Saudi MEDs", which is approved by the Deanery of Medical Colleges and the Ministry of Education date January 2015 then updated Saudi MEDs Framework in February 2017



**Figure: The six themes of Saudi MEDs**

**Objectives of the course:**

By the end of this course the student will be able to:

- Define the Parasites, the hosts, and the different types of associations.
- Explain the importance of epidemiology, biology, life-cycle, morphology, diagnosis, symptomatology, management, and prevention of the common Helminthic and Protozoal diseases.
- Describing the various aspects of each parasite could help in understanding the rationale of causation, propagation, and maintenance of each parasitic infection in man and his environment.
- Employ the different laboratory techniques and the procedures needed to carry out an accurate diagnosis of common parasitic diseases of man.
- Analyze the pathogenesis and clinical manifestations of parasitic diseases.
- Interpret the results of the laboratory investigations and the clinical diagnosis of each parasitic disease.

## Course Learning Outcomes

CLOs		Aligned PLOs
<b>1</b>	<b>Knowledge and Understanding</b>	
1.1	Discuss parasites, their life cycles, and induced diseases.	K1
1.2	Outline the preventive measures against parasitic infestation.	K3
<b>2</b>	<b>Skills :</b>	
2.1	Employ different laboratory techniques and laboratory methods to confirm the clinical diagnosis of Parasitic infection.	S2
2.2	Apply the core-writing skills to express his knowledge and ideas	S6
<b>3</b>	<b>Values:</b>	
3.1	Employ the skill of self-learning through updated medical information from different approved sources	V1

## Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Midterm	6 <sup>th</sup>	25%
2	Assignment	8 <sup>th</sup>	15%
3	Final exam	End of semester	40%
4	OSPE	End of semester	20%



## List of Topics

No	List of Topics
	<b>LECTURES</b>
1	Introduction to Medical Parasitology
2	Introduction to Trematodes & <i>Fasciola</i> spp.
3	<i>Clonorchis sinensis</i> and <i>Opisthorchis</i> spp.
4	<i>Heterophyes heterophyes</i> & <i>Fasciolopsis buski</i>
5	Introduction to Cestodes & <i>Diphyllobothrium latum</i> and Sparganosis
6	<i>Taenia saginata</i> and <i>T. solium</i>
7	<i>Taenia multiceps</i> and <i>Dipylidium caninum</i>
8	<i>Hymenolepis nana</i> and <i>H. diminuta</i>
9	Introduction to Nematodes & <i>Enterobius vermicularis</i>
10	<i>Trichuris trichiura</i> & <i>Capillaria</i> spp.
11	<i>Strongyloides stercoralis</i> & opportunistic parasites
12	Introduction to filarial & Nonpathogenic filariae ( <i>Mansonella</i> spp.)
13	<i>Onchocerca volvulus</i>
14	<i>Dracunculus medinensis</i> & <i>Toxocara</i> spp. & <i>Larva migrans</i>
15	Introduction to Protozoa & Commensal amoeba and flagellates
16	<i>Leishmania</i>
17	African trypanosomes
18	<i>Plasmodium</i> spp. & Malaria
19	Malaria(cont.) & <i>Babesia</i> spp.
20	<i>Isospora</i> & <i>Cyclospora</i>
21	<i>Blastocystis</i> & <i>Microsporidia</i>
22	Introduction to Entomology & Mosquitoes and Medical importance
23	Fleas & Lice & Bugs and Medical importance
24	Ticks & Mites
	<b>PRACTICALS</b>
25	Practical Session of Trematodes
26	Practical Session of Cestodes
27	Practical Session of Nematodes-I
28	Practical Session of Nematodes-II
29	Practical Session of Protozoa-I
30	Practical Session of Protozoa-II
31	Practical Session of Entomology -I
32	Practical Session of Entomology -II

## Teaching and Assessment Methods for Students

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
<b>1.0</b>	<b>Knowledge and Understanding</b>		
1.1	Discuss parasites, their life cycles and induced diseases.	Direct instruction (lecture)	Written exam (MCQs and SAQs)
1.2	Outline the preventive measures against parasitic infestation.	Direct instruction(lecture)	Written exam (MCQs and SAQs)
<b>2.0</b>	<b>Skills</b>		
2.1	Employ different laboratory techniques and laboratory methods to confirm the clinical diagnosis of Parasitic infection.	Laboratory-based learning strategy (Demonstration, direct instruction)	OSPE
2.2	Apply the core-writing skills to express his knowledge and ideas	Homework-assignment	Assignment rubric
<b>3.0</b>	<b>Values</b>		
3.1	Employ the skill of self-learning through updated medical information from different approved sources	Homework-assignment	Assignment rubric

## Learning Resources

<b>Required Textbooks</b>	Markell and Voge's <b>Medical Parasitology</b> , 9th Edition Publisher: Saunders, 9th Edition Publication date: (February 10, 2006) ISBN: 13:978-0721647937
<b>Essential References Materials</b>	Atlas of <b>Tropical Medicine and Parasitology</b> 6th Edition Publisher: Elsevier Mosby. Publication date: 2007 ISBN-13: 978-0323043649
<b>Electronic Materials</b>	-Markell and Voge's <b>Medical Parasitology Text Book</b> , 9th Edition 2012. eBook ISBN: 9780702054723- -Journal of Parasitology Research, Hindawi publishing cooperation, jpr@hindawi.com ISSN:20900023, 20900031 Universities and research institutions in united states
<b>Other Learning Materials</b>	Saudi Digital Library (SDL): Foundations of Parasitology. 8th Edition Publisher: McGraw-Hill Publication date: 2010 ISBN: 978-007-131103-8