



**Quality Assurance Unit**



**Tanta University  
Faculty of Medicine**

**Medicine and Surgery Bachelor Program – Credit Point  
MSBP –CP**

**Course/ Module Specifications**

**[Principles of Parasitology]**

**Semester II**

**2020 -2021**

**Code PARA 1202**

## 1- Administrative Information

- **Program title: Medicine and Surgery Bachelor Program – Credit Point MSBP – CP**
- **Course/ module title: Principles of Parasitology**
- **Course/ module code: PARA 1202**
- **Course/ module coordinator: Assistant Professor Dr Dina Abou Rayia**
- **Department(s) offering the module/course: Parasitology Department**
- **Academic year: 2020-2021**
- **Level: 1**
- **Date of approval by:**
  - ✓ **The Board of Program: 6/10/2020**
  - ✓ **Council of the Faculty of Medicine, Tanta University:**
- **No. of hours:**

Credit points	Lectures	Practical/clinical	Media	PBL	Assig.	Seminar	Exam	Taught hrs.
5	42	28	14	6	10	21	4	125

## 2- Professional Information

Academic standards adopted in this course is designed according to NARS 2017

## 3 – Course/ Module Description

This course is designed to provide the students with basic knowledge of the parasitic infections of humans. It will cover the epidemiology, biology and life cycles of the parasites in addition to the clinical features, laboratory diagnosis, treatment and prevention of human parasitic infections. It will also help the students to gain some basic practical skills to identify parasites and laboratory diagnose parasitic diseases.

## 4– Overall Course Aim/Objectives

### Aim:

The aim of the course is to prepare a distinguished student with the ability to completely understand human parasitic infections regarding the causative parasites and the clinical aspects, qualified to diagnose, prescribe the appropriate treatment and put programs for prevention and control of these infections.

### Objectives:

1. To introduce the students to basic concepts of parasitology.
2. To help the students to acquire knowledge concerning biological, epidemiological and ecological aspects of parasites causing diseases to humans with special emphasis on endemic parasitic problems.
3. To develop students awareness of the pathogenesis, clinical presentations and complications of these parasitic infections.

4. To help the students to select the diagnostic methods in order to reach the final proper diagnosis.
5. To help the students to know the general outlines of treatment, the best drug of choice, prevention and control of parasitic diseases.

#### **5 - Intended learning outcomes (ILOs)**

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

##### **Competency Area I: The graduate as a health care provider**

- 1.6. Select the appropriate investigations regarding medical parasitology problems and interpret their results taking into consideration cost/ effectiveness factors.
- 1.8. Apply basic knowledge of parasitology relevant to the clinical problem at hand.
1. 10. Integrate the results of history, clinical manifestations and laboratory test findings into a meaningful diagnostic formulation for parasitic diseases.
- 1.16. Apply the appropriate pharmacological and nonpharmacological approaches for treatment of parasitic diseases.

##### **Competency Area II: The graduate as a health promoter**

- 2.4 Identify the major parasitic health risks in his/her community, including demographic, occupational and environmental risks.
- 2.5 Describe the principles of parasitic diseases' prevention, and empower communities, specific groups or individuals by raising their awareness and building their capacity.
- 2.6 Recognize the epidemiology of common parasitic diseases within his/her community and apply the systematic approaches useful in reducing the incidence and prevalence of those diseases.
- 2.9 Adopt suitable measures for parasitic infection control.

##### **Competency Area III: The graduate as a professional**

- 3.1. Exhibit appropriate professional behaviors and relationships in all aspects of practice, demonstrating honesty, integrity, commitment, compassion, and respect.

##### **Competency Area IV: The graduate as a scholar and scientist**

- 4.5 Identify various causes of parasitic diseases and explain the ways in which they operate on the body (pathogenesis).
- 4.6 Describe altered structure and function of the body and its major organ systems that are seen in various parasitic diseases.
- 4.8 Demonstrate basic practical skills in the diagnosis of parasitic diseases relevant to future practice, recognizing their scientific basis, and interpret the laboratory assays in order to reach final diagnosis.

**Competency Area V: The graduate as a member of the health team and system**

5.2 Respect colleagues and other health care professionals and work cooperatively with them, negotiating overlapping and shared responsibilities and engaging in shared decision-making for effective patient management.

5.3 Implement strategies to promote understanding, in a manner that supports collaborative work through group presentation of a parasitic clinical problem.

5.6 Evaluate his/her work and that of others using constructive feedback.

**Competency Area VI: The graduate as a lifelong learner and researcher**

6.3 Identify opportunities and use various resources for learning.

6.4 Engage in inter-professional activities and collaborative learning to continuously improve personal practice and contribute to collective improvements in practice.

**6 – Course/ Module Contents**

Courses	Interactive Lecture	TBL	Web based L	Patient L	Tutorial	Workshop			Small group teaching		Bedside T	Skill L.	Portfolio
						Media	Lab	Computer	CBL	PBL			
Principles of Parasitology	√		√			√	√			√			√

Topics	No of hours								Total Hours	ILOs covered
	Lectures	Lab.	Media	PBL	Assi.	seminar	Exam			
	42	28	14	6	10	21	4		125	
Introduction to parasitology	1									1.8, 2.4
Biology of trematodes- Liver flukes (Fasciola spp.)	1	2	2							1.6, 1.8, 1.10, 1.16, 2.4, 2.5, 2.6, 2.9, 3.1, 4.5, 4.6, 4.8, 5.2, 5.3, 5.6, 6.3, 6.4
Intestinal flukes (H. heterophyes)	1									1.6, 1.8, 1.10, 1.16, 2.4, 2.5, 2.6, 2.9, 3.1, 4.5, 4.6, 4.8, 5.2,

Topics	No of hours							Total Hours	ILOs covered
	Lectures	Lab.	Media	PBL	Assi.	seminar	Exam		
									5.3, 5.6, 6.3, 6.4
Basic Schistosoma	2								1.6, 1.8, 1.10, 1.16, 2.4, 2.5, 2.6, 2.9, 3.1, 4.5, 4.6, 4.8, 5.2, 5.3, 5.6, 6.3, 6.4
Biology of cestodes- Intestinal cestodes (Taenia spp )	1	2							1.6, 1.8, 1.10, 1.16, 2.4, 2.5, 2.6, 2.9, 3.1, 4.5, 4.6, 4.8, 5.2, 5.3, 5.6, 6.3, 6.4
Hymenolepis spp.,	1		2						1.6, 1.8, 1.10, 1.16, 2.4, 2.5, 2.6, 2.9, 3.1, 4.5, 4.6, 4.8, 5.2, 5.3, 5.6, 6.3, 6.4
Diphyllobothrium latum	1								1.6, 1.8, 1.10, 1.16, 2.4, 2.5, 2.6, 2.9, 3.1, 4.5, 4.6, 4.8, 5.2, 5.3, 5.6, 6.3, 6.4
Biology of nematodes - Ancylostoma duodenale	1	6							1.6, 1.8, 1.10, 1.16, 2.4, 2.5, 2.6, 2.9, 3.1, 4.5, 4.6, 4.8, 5.2, 5.3, 5.6, 6.3, 6.4
T. colubriformis	1		2						1.6, 1.8, 1.10, 1.16, 2.4, 2.5, 2.6, 2.9, 3.1, 4.5, 4.6, 4.8, 5.2, 5.3, 5.6, 6.3, 6.4
Ascaris lumbricoides	1								1.6, 1.8, 1.10, 1.16, 2.4, 2.5, 2.6, 2.9, 3.1, 4.5, 4.6, 4.8, 5.2, 5.3, 5.6, 6.3, 6.4

Topics	No of hours							Total Hours	ILOs covered
	Lectures	Lab.	Media	PBL	Assi.	seminar	Exam		
<b>E. vermicularis</b>	<b>1</b>								1.6, 1.8, 1.10, 1.16, 2.4, 2.5, 2.6, 2.9, 3.1, 4.5, 4.6, 4.8, 5.2, 5.3, 5.6, 6.3, 6.4
<b>Strongyloides stercoralis</b>	<b>1</b>								1.6, 1.8, 1.10, 1.16, 2.4, 2.5, 2.6, 2.9, 3.1, 4.5, 4.6, 4.8, 5.2, 5.3, 5.6, 6.3, 6.4
<b>Trichuris trichiura</b>	<b>1</b>								1.6, 1.8, 1.10, 1.16, 2.4, 2.5, 2.6, 2.9, 3.1, 4.5, 4.6, 4.8, 5.2, 5.3, 5.6, 6.3, 6.4
<b>Capillaria philippinensis</b>	<b>1</b>								1.6, 1.8, 1.10, 1.16, 2.4, 2.5, 2.6, 2.9, 3.1, 4.5, 4.6, 4.8, 5.2, 5.3, 5.6, 6.3, 6.4
<b>Trichinella spiralis</b>	<b>1</b>								1.6, 1.8, 1.10, 1.16, 2.4, 2.5, 2.6, 2.9, 3.1, 4.5, 4.6, 4.8, 5.2, 5.3, 5.6, 6.3, 6.4
<b>Tissue nematodes (Lymphatic Filariae)</b>	<b>2</b>								1.6, 1.8, 1.10, 1.16, 2.4, 2.5, 2.6, 2.9, 3.1, 4.5, 4.6, 4.8, 5.2, 5.3, 5.6, 6.3, 6.4
<b>Cutaneous Filariae</b>	<b>1</b>								1.6, 1.8, 1.10, 1.16, 2.4, 2.5, 2.6, 2.9, 3.1, 4.5, 4.6, 4.8, 5.2, 5.3, 5.6, 6.3, 6.4
<b>Larva migrans (visceral &amp; cutaneous)</b>	<b>1</b>								1.6, 1.8, 1.10, 1.16, 2.4, 2.5, 2.6,

Topics	No of hours							Total Hours	ILOs covered
	Lectures	Lab.	Media	PBL	Assi.	seminar	Exam		
									2.9, 3.1, 4.5, 4.6, 4.8, 5.2, 5.3, 5.6, 6.3, 6.4
<b>Biology of protozoa Intestinal protozoa (Entamoeba, histolytica)</b>	1	4							1.6, 1.8, 1.10, 1.16, 2.4, 2.5, 2.6, 2.9, 3.1, 4.5, 4.6, 4.8, 5.2, 5.3, 5.6, 6.3, 6.4
<b>Balantidium coli</b>	1								1.6, 1.8, 1.10, 1.16, 2.4, 2.5, 2.6, 2.9, 3.1, 4.5, 4.6, 4.8, 5.2, 5.3, 5.6, 6.3, 6.4
<b>Flagellates (intestinal: Giardia lamblia and trichomonas vaginalis)</b>	2		3						1.6, 1.8, 1.10, 1.16, 2.4, 2.5, 2.6, 2.9, 3.1, 4.5, 4.6, 4.8, 5.2, 5.3, 5.6, 6.3, 6.4
<b>Haemoflagellates Leishmania species</b>	2								1.6, 1.8, 1.10, 1.16, 2.4, 2.5, 2.6, 2.9, 3.1, 4.5, 4.6, 4.8, 5.2, 5.3, 5.6, 6.3, 6.4
<b>Coccidia (intestinal )</b>	1								1.6, 1.8, 1.10, 1.16, 2.4, 2.5, 2.6, 2.9, 3.1, 4.5, 4.6, 4.8, 5.2, 5.3, 5.6, 6.3, 6.4
<b>Basic Toxoplasma</b>	2								1.6, 1.8, 1.10, 1.16, 2.4, 2.5, 2.6, 2.9, 3.1, 4.5, 4.6, 4.8, 5.2, 5.3, 5.6, 6.3, 6.4
<b>Biology and classification of arthropods</b>	1								1.8, 2.4
<b>Bionomics &amp; medical importance of Mosquitoes &amp;</b>	2	8	2						1.6, 1.8, 1.10, 1.16, 2.4, 2.5, 2.6,

Topics	No of hours							Total Hours	ILOs covered
	Lectures	Lab.	Media	PBL	Assi.	seminar	Exam		
Phlebotomus papatsii									2.9, 3.1, 4.5, 4.6, 4.8, 5.2, 5.3, 5.6, 6.3, 6.4
Bionomics & medical importance of flies & myiasis	1								1.6, 1.8, 1.10, 1.16, 2.4, 2.5, 2.6, 2.9, 3.1, 4.5, 4.6, 4.8, 5.2, 5.3, 5.6, 6.3, 6.4
Bionomics & medical importance of Fleas, Lice, Bugs	1								1.6, 1.8, 1.10, 1.16, 2.4, 2.5, 2.6, 2.9, 3.1, 4.5, 4.6, 4.8, 5.2, 5.3, 5.6, 6.3, 6.4
Bionomics & medical importance of Ticks & and Cyclops	1								1.6, 1.8, 1.10, 1.16, 2.4, 2.5, 2.6, 2.9, 3.1, 4.5, 4.6, 4.8, 5.2, 5.3, 5.6, 6.3, 6.4
Bionomics & medical importance of mites	1								1.6, 1.8, 1.10, 1.16, 2.4, 2.5, 2.6, 2.9, 3.1, 4.5, 4.6, 4.8, 5.2, 5.3, 5.6, 6.3, 6.4
Diagnostic methods of parasitic diseases	1								4.8
Revision		6							1.6, 1.8, 1.10, 1.16, 2.4, 2.5, 2.6, 2.9, 3.1, 4.5, 4.6, 4.8, 5.2, 5.3, 5.6, 6.3, 6.4
	5		3						

## 7. Teaching and learning methods

- online lectures, Interactive lectures, Flipped classroom, PBL
- Self-directed learning
- Oral presentation and online video lectures using PowerPoint
- Multi-media
- Lab contact hours



- Home assignments

Item	Time schedule	Teaching hours
Lectures	3 hours/week	42
Practical Classes	2 hours/week	28
Clinical	-----	-----
Small groups (PBL)		6
Multi-media	1hour/week	14
Skill Lab	-----	-----
Self-directed learning (seminar)		21
Assignment		10
<b>Total</b>		<b>125</b>

## 8 - Student evaluation

### 8-1 COURSE POLICIES

#### 8.1.1. Attendance:

Attendance is mandatory to all sessions. Due to the course emphasis in developing skills and not only knowledge, the students' participation in all course activities is critical. Students who expect to be late for a mandatory class, lab, or small group session for any reason must contact the course director before the start of class. Unexcused absences demonstrate unprofessional behavior by the student.

#### 8-1-2 Remediation of Unsatisfactory Performance in Course

A student who performs below the satisfactory level will be notified to Course Director for the purpose of developing a formal remediation plan which will be established by the course director and the student.

#### 8-1-3 Missing tests

- Students with sufficient reason for missing a test will have no grade for the missed test and their mean grade for tests will be based only on those that they completed.
- Students missing a test without sufficient reason will have a zero as grade for the missed tests, which will be incorporated to obtain the mean grade for their tests and the final grade for the course.

### 8-2 Course assessment:

**Formative and summative assessment: they include:**

1. Online assignments, Quizzes, logbook, reflection reports
2. Written exams: MCQs in addition to ultra-short essay and case studies.
3. Clinical and practical skills assessment:
  - a. Objective Structured Practical Exams (OSPE)

### 8-3 course assessment schedule and grading:

Grades are obtained based on the following complementary assessments:

Assessment Method	Date	Description	ILOs/Competencies assessed	Marks	% of Total
1.Continuous assessments (Portfolio)	Through semester	<ul style="list-style-type: none"> <li>• Quizzes</li> <li>• Log book</li> <li>• PBL</li> <li>• Project</li> </ul>	1.6, 1.8, 1.10, 1.16, 2.4, 2.5, 2.6, 2.9, 3.1, 4.5, 4.6, 4.8, 5.2, 5.3, 5.6, 6.3, 6.4	30	30%
2.Mid-term written exam	Midterm	MCQ		10	10%
3-Final written exam	End semester	MCQ & Ultra short		30	30%
4-Practical exam	End semester	OSPE		30	30%
<b>Total</b>				<b>100</b>	<b>100</b>

## 9. Facilities required

- Lecture rooms with data show and computer facilities

- A u-shaped teaching halls with internet connection ( hosting 24 students )
- Flip chart and colored pen
- A wall board
- Facilities for photocopying

## 10 - List of references

### TEXTBOOK, MATERIALS, READINGS, RESOURCES, TERMINOLOGY

#### Mandatory Textbook

- Lecture notes
- Practical and self-evaluation book.
- A color atlas.
- Handouts.
- E learning: an electronic copy of the course is available on line.
- Microscopic slides photos are available on line.

#### Recommended reference textbooks:

##### Text books

- USMLE step 1 Lecture Notes 2016 (Kaplan test Prep.)
- Human Parasitology 4<sup>th</sup> Edition Authors: Burton Bogitsh Clint Carter Thomas Oeltmann 2012
- Basic Clinical Parasitology: By H.W., Brown, F.A. Neva (2005)
- Medical Parasitology: By E.K., Markell; M.A., Marietta Voge and D.T., John.(2007)
- Color Atlas of Tropical Medicine and Parasitology By W. Peters& H.M. Gillies (1989).
- Atlas of Medical Helminthology and Protozoology. By H.C. Jeffrey, R.M. Leach and G.O. Cowan, 3rd ed., Churchil Livingstone (2002).
- Diagnostic Medical Parasitology 6th Edition by Lynne S. Garcia, 2016
- Clinical Parasitology: A Practical Approach, 2e 2nd Edition by Elizabeth Zeibig, 2013
- Topley&Wilson's microbiology & microbiological infections By F.E.G. Cox, Derek Wakelin, Stephen H. Gillespie and Dickson D. Despommier (2009)

**Course coordinator:** Assistant Professor Dr Dina Abou Rayia

**A) Summary of topics matched with competencies' domains ILOs in the module**

The name of course		Principles of Parasitology				
Code of course		PARA 1202				
Topics of the course	Health care provider	Health promoter	Professionalism	Scholar and scientist	Health team & system	LLL & researcher
<b>Lectures:</b>						
Introduction to parasitology	√					
Trematodes	√	√		√	√	√
Cestodes	√	√		√	√	√
Nematodes	√	√		√	√	√
Protozoa	√	√		√	√	√
Entomology	√	√		√	√	√
Diagnostic methods of parasitic diseases	√	√		√	√	√
Assignment	√	√		√	√	√
<b>Practical/Clinical</b>						
Trematodes	√					√
Cestodes	√					√

Topics of the course	Health care provider	Health promoter	Professionalism	Scholar and scientist	Health team & system	LLL & researcher
Nematodes	√					√
Protozoa	√					√
Arthropods	√					√
revision	√					√
<b>Multi-media</b>						
Trematodes	√	√		√	√	√
Cestodes	√	√		√	√	√
Nematodes	√	√		√	√	√
Protozoa	√	√		√	√	√
Arthropods	√	√		√	√	√

**Course coordinator:** Assistant Professor Dr Dina Abou Rayia

Course ILOs	Health care provider				The graduate as a health promoter				professionalism	Scholar and scientist			Health team & system			LLL & researcher	
	1.6	1.8	1.10	1.16	2.4	2.5	2.6	2.9	3.1	4.5	4.6	4.8	5.2	5.3	5.6	6.3	6.4
Competency 1	1.1																
	1.2																
	1.3.																
	1.4.																
	1.5.																
	1.6.	*															
	1.7.																
	1.8		*														
	1.9																
	1.10			*													
	1.11																
	1.12																
	1.13																
	1.14																
	1.15																
	1.16				*												
	1.17																
Competency 2	2.1																
	2.2																
	2.3																

Course ILOs	Health care provider				The graduate as a health promoter				professionalism	Scholar and scientist			Health team & system			LLL & researcher	
	1.6	1.8	1.10	1.16	2.4	2.5	2.6	2.9	3.1	4.5	4.6	4.8	5.2	5.3	5.6	6.3	6.4
Competency 1	2.4				*												
	2.5					*											
	2.6						*										
	2.7																
	2.8																
	2.9							*	*								
	3.1.								*								
	3.2.																
	3.3.																
Competency 3	3.4.																
	3.5.																
	3.6.																
	3.7.																
	3.8																
	3.9																
Competency 4	4.1.																
	4.2.																
	4.3.																
	4.4.																
	4.5									*							

Course ILOs	Health care provider				The graduate as a health promoter				professionalism	Scholar and scientist			Health team & system			LLL & researcher	
	1.6	1.8	1.10	1.16	2.4	2.5	2.6	2.9	3.1	4.5	4.6	4.8	5.2	5.3	5.6	6.3	6.4
Program ILOs	4.6										*						
	4.7																
	4.8										*						
	4.9																
Competency 5	5.1																
	5.2												*				
	5.3													*			
	5.4																
	5.5																
	5.6														*		
	5.7																
	5.8																
	5.9																
	5.10																
	5.11																
	5.12																
Competency 6	6.1																
	6.2																
	6.3															*	
	6.4																*



Course ILOs	Health care provider				The graduate as a health promoter				professionalism	Scholar and scientist			Health team & system			LLL & researcher	
	1.6	1.8	1.10	1.16	2.4	2.5	2.6	2.9	3.1	4.5	4.6	4.8	5.2	5.3	5.6	6.3	6.4
Program ILOs																	
6.5																	
6.6																	
6.7																	
6.8																	
6.9																	
6.10																	

**Course coordinator:** Assistant Professor Dr Dina Abou Rayia

**Head of the Department:** Professor Dr Howaida Ismail