SUBJECT OUTLINE

1. Programme of study description

1.1.	**THE "CAROL DAVILA" UNIVERSITY OF MEDICINE AND PHARMACY**
1.2.	**THE FACULTY OF MEDICINE / THE CLINICAL DEPARTMENT 2 INFECTIOUS DISEASES- EPIDEMIOLOGY- MICROBIOLOGY- VIROLOGY- PARASITOLOGY**
1.3.	**DISCIPLINE PARASITOLOGY**
1.4.	**DOMAIN OF STUDY: Healthcare – regulated sector within the EU**
1.5.	**CYCLE OF STUDIES: BACHELOR'S DEGREE**
1.6.	**PROGRAMME OF STUDY: MEDICINE**

2. Subject description

2.1.	**Name of the subject/compulsory subject/elective subject within the discipline: PARASITOLOGY**						
2.2.	**Location of the discipline:**						
2.3.	**Course tenured coordinator:**						
2.4.	**Practicals/clinical rotations tenured coordinator:**						
2.5. Year of study	III	**2.6. Semester**	V VI	**2.7. Type of assessment**	The exam. Assement & practical exam.	**2.8. Subject classification**	Compulsory

3. Total estimated time (hours/semester of didactic activity) – teaching module

Number of hours per week	2	**Out of which: course**	1	**Clinical rotation**	1
Total number of hours from curriculum	28	**Out of which: course**	14	**Clinical rotation**	14
Distribution of allotted time	7 week				**Hours**
Study from textbooks, courses, bibliography, and student notes					
Additional library study, study on specialized online platforms and field study					
Preparing seminars / laboratories, assignments, reports, portfolios and essays					
Tutoring					
Examinations					
Other activities					
Total hours of individual study					
Number of credit points					2

4. Prerequisites (where applicable)

4.1. of curriculum	Fundamental knowledge of immunology, physiopatology, semiology.
4.2. of competencies	Optical microscopy examination, elementary microbiological/ infectious diseases laboratory techniques

5. Requirements (where applicable)

5.1. for delivering the course	Multimedia projector, overhead projector/ amphitheater
5.2. for delivering the clinical rotation	Specialized laboratory for macroscopic & microscopic profile preparations

6. Acquired specific competencies

Professional competencies (expressed through knowledge and skills)	At the end of the intership, the student must know: -the main human parasitic diseases -diagnosis, principles of treatment, prophylaxis and control At the end of the practical work, the student must: -identify the main humans pathogenic parasites, on macroscopic and microscopic preparations - to interpret in a clinical-geographical context the risk of parasitic exposure
Transversal competencies (of role, of professional and personal development)	-To have the ability to work in a medical team -Communication skills with patients, caregivers, outbreak/cluster contacts -Efficient use of informational sources/communication resources and assisted professional training in parasitology (internet portals, online courses, etc.) both in Romanian and in international language -To show empathy and professional deontology

7. Subject learning objectives (based on the scale of acquired specific competencies)

7.1. General learning objective	- Dcquiring the competence to identify and the ability to evaluate a parasitic cause in the context of health and disease problems -The correct assessment of the parasitic risk in accordance with the specific epidemiological norms -Assessment of the body`s ability to respond to the aggression of the parasite -Development of medical ethics principles in Parasitology
7.2. Specific learning objectives	-The ability of the anatomo- topographical synthesis of the parasites and parasitic diseases for diagnostic purposes by addressing health or disease issues from the specific perspective -The ability to outline practical, epidemiological and management benchmarks of parasitic infection (geographic spread, parasite reservoir, sources and mechanisms of transmission, individual risk profile or collective risk -occupational, behavioral, ecology-environmental, socio-economic, immunological, co-morbid, etc., including specific antiparasitic preventive measures) -Elementary antiparasitic therapy

8. Content

8.1. Course	**Teaching methods**	**Observations**
Course 1 Introduction to Medical Parasitology: General notions; Pathogenic, commensal and free amoebas.	In the Amphitheater, Multimedia	2 hours
Course 2 Cavitary flagellates (digestive & uro-genital) and hemoflagellates I (Trypanosoma spp.)	In the Amphitheater, Multimedia	2 hours

Course 3 Hemoflagellates II (Leishmania spp.) and Sporozoa I (Toxoplasma gondii)	In the Amphitheater, Multimedia	2 hours
Course 4 Sporozoa II (Coccidia; Pneumocystis spp; Plasmodium spp.)	In the Amphitheater, Multimedia	2 hours
Course 5 Platyhelminthes I (Cestodes)	In the Amphitheater, Multimedia	2 hours
Course 6 Platyhelminthes II (Trematodes) & Nematodes I (Trichinella spiralis & E. vermicularis)	In the Amphitheater, Multimedia	2 hours
Course 7 Nematodes II (Geohelminthes & Filariae) & Ectoparasites (Arachnidae & Pediculidae)	In the Amphitheate, Multimedia	2 hours

8.2. Clinical rotation	**Teaching methods**	**Observations**
CR 1 E.histolytica; E.coli; Naegleria fowleri; Acanthamoeba spp.	*In tehnically equipped rooms* (laptop, videoprojector, overhead projector, microscopes, magnetic board, plates, etc) in Power Point presentation, on slides, retro-projection films, with diagrams on the board, plates; *Microscopic examination* of fixed/stained slides and fresh preparations; *Macroscopic examination* (helminthes, echtoparasites, vectors), anatomical parts specific to parasitic pathology; *Clinical lessons, case presentations, diagnostic exercises* for parasitic infection (quick tests, analysis reports, etc); *Chemoprophylaxis and prevention exercises* on geographical areas and parasitic risk behaviors; *Interactive discussions*, with different degrees of diagnostic difficulty and urgency, all related to the study program	2 hours The practical demonstrative materials are, mostly, authentic parasitic products (obtained either from the patients monitored in the Parasitic Diseases Cinic, or from the collection of Parasitology Discipline), as well as virtual ones, from online sources
CR 2 Giardia lamblia: Trichomonas vaginalis, Trypanosoma brucei & Trypanosoma cruzi;	*In tehnically equipped rooms* (laptop, videoprojector, overhead projector, microscopes, magnetic board, plates, etc) in Power Point presentation, on slides, retro-projection films, with diagrams on the board, plates; *Microscopic examination* of fixed/stained slides and fresh preparations; *Macroscopic examination* (helminthes, echtoparasites, vectors), anatomical parts specific to parasitic pathology;	2 hours The practical demonstrative materials are, mostly, authentic parasitic products (obtained either from the patients monitored in the Parasitic Diseases Cinic, or from the collection of Parasitology

	Clinical lessons, case presentations, diagnostic exercises for parasitic infection (quick tests, analysis reports, etc); *Chemoprophylaxis and prevention exercises* on geographical areas and parasitic risk behaviors; *Interactive discussions*, with different degrees of diagnostic difficulty and urgency, all related to the study program	Discipline), as well as virtual ones, from online sources
CR 3 Leishmania spp; Toxoplasma gondii;	*In tehnically equipped rooms* (laptop, videoprojector, overhead projector, microscopes, magnetic board, plates, etc) in Power Point presentation, on slides, retro-projection films, with diagrams on the board, plates; *Microscopic examination* of fixed/stained slides and fresh preparations; *Macroscopic examination* (helminthes, echtoparasites, vectors), anatomical parts specific to parasitic pathology; *Clinical lessons, case presentations, diagnostic exercises* for parasitic infection (quick tests, analysis reports, etc); *Chemoprophylaxis and prevention exercises* on geographical areas and parasitic risk behaviors; *Interactive discussions*, with different degrees of diagnostic difficulty and urgency, all related to the study program	2 hours The practical demonstrative materials are, mostly, authentic parasitic products (obtained either from the patients monitored in the Parasitic Diseases Cinic, or from the collection of Parasitology Discipline), as well as virtual ones, from online sources
CR 4 Coccidia; Plasmodium spp.	*In tehnically equipped rooms* (laptop, videoprojector, overhead projector, microscopes, magnetic board, plates, etc) in Power Point presentation, on slides, retro-projection films, with diagrams on the board, plates; *Microscopic examination* of fixed/stained slides and fresh preparations; *Macroscopic examination* (helminthes, echtoparasites, vectors), anatomical parts specific to parasitic pathology; *Clinical lessons, case presentations, diagnostic exercises* for parasitic infection (quick tests, analysis reports, etc); *Chemoprophylaxis and prevention exercises* on geographical areas and parasitic risk behaviors; *Interactive discussions*, with different degrees of diagnostic difficulty and urgency, all related to the study program	2 hours The practical demonstrative materials are, mostly, authentic parasitic products (obtained either from the patients monitored in the Parasitic Diseases Cinic, or from the collection of Parasitology Discipline), as well as virtual ones, from online sources
CR 5 Tapeworms (Taenia spp; Hymenolepis nana; Echinococcus granulosus; Echinococcus	*In tehnically equipped rooms* (laptop, videoprojector, overhead projector, microscopes, magnetic board, plates, etc)	2 hours The practical demonstrative

multilocularis; Diphylobotrium latum)	in Power Point presentation, on slides, retro-projection films, with diagrams on the board, plates; *Microscopic examination* of fixed/stained slides and fresh preparations; *Macroscopic examination* (helminthes, echtoparasites, vectors), anatomical parts specific to parasitic pathology; *Clinical lessons, case presentations, diagnostic exercises* for parasitic infection (quick tests, analysis reports, etc); *Chemoprophylaxis and prevention exercises* on geographical areas and parasitic risk behaviors; *Interactive discussions*, with different degrees of diagnostic difficulty and urgency, all related to the study program	materials are, mostly, authentic parasitic products (obtained either from the patients monitored in the Parasitic Diseases Cinic, or from the collection of Parasitology Discipline), as well as virtual ones, from online sources
CR 6 Trematodes (Fasciola spp, Paragonimus spp, Opistorchis spp, Schistosoma spp; Trichinella spiralis; Enterobius vermicularis).	*In tehnically equipped rooms* (laptop, videoprojector, overhead projector, microscopes, magnetic board, plates, etc) in Power Point presentation, on slides, retro-projection films, with diagrams on the board, plates; *Microscopic examination* of fixed/stained slides and fresh preparations; *Macroscopic examination* (helminthes, echtoparasites, vectors), anatomical parts specific to parasitic pathology; *Clinical lessons, case presentations, diagnostic exercises* for parasitic infection (quick tests, analysis reports, etc); *Chemoprophylaxis and prevention exercises* on geographical areas and parasitic risk behaviors; *Interactive discussions*, with different degrees of diagnostic difficulty and urgency, all related to the study program	2 hours The practical demonstrative materials are, mostly, authentic parasitic products (obtained either from the patients monitored in the Parasitic Diseases Cinic, or from the collection of Parasitology Discipline), as well as virtual ones, from online sources
CR 7 Geohelminthes (cutaneous and digestive); Lymphatic and cutaneous filariaes; Sarcoptes scabiae; Pediculidae.	*In tehnically equipped rooms* (laptop, videoprojector, overhead projector, microscopes, magnetic board, plates, etc) in Power Point presentation, on slides, retro-projection films, with diagrams on the board, plates; *Microscopic examination* of fixed/stained slides and fresh preparations; *Macroscopic examination* (helminthes, echtoparasites, vectors), anatomical parts specific to parasitic pathology; *Clinical lessons, case presentations, diagnostic exercises* for parasitic infection (quick tests, analysis reports, etc);	2 hours The practical demonstrative materials are, mostly, authentic parasitic products (obtained either from the patients monitored in the Parasitic Diseases Cinic, or from the collection of Parasitology Discipline), as well

	Chemoprophylaxis and prevention exercises on geographical areas and parasitic risk behaviors; *Interactive discussions,* with different degrees of diagnostic difficulty and urgency, all related to the study program	as virtual ones, from online sources

Bibliography for course and clinical rotation

1**. Lidia Lazar "Baze practice în Parazitologia Medicală"**-ED. PUBLISTAR, 2001, 2005, 2009
2. **Lidia Lazar "Compendiu de Parazitologie Medicală- Paraziții în Patologia Umană"** CAROL DAVILA UNIVERSITY ED. BUCHAREST, 2006
3. **Lidia Lazar Bilingual Romanian-English CD-ROM "Parasites and Human Diseases MiniAtlas"**, 2006, "Carol Davila" University Ed., Bucharest
4**. Lidia Lazar** "**Synopsis de Parazitologie Medicală"** 2010, CAROL DAVILA UNIVERSITY ED" BUCHAREST, 2010, 2013, 2015
5. **Creţu C-M., Cilievici S. E.**:**Parazitoze autohtone și de import- Repere de Diagnostic și Tratament**, Ed. Cartea Universitară - Bucharest - 2002; 2006; 2008
6. **Creţu C-M**: Medical Parasitology – **Note de curs**, Carol Davila University Ed. - Bucharest -2005
7. **Dan Steriu** "**Infecții parazitare**". Ed. Ilex, 2003, Bucharest.
8. **E. Pilly Maladie infectieuses et tropicales**, 2012
9. **Manson's Tropical Diseases, 23rd** ed. Saunders, 2015, London
10. **Peters W: Gilles HM. A Color Atlas of Tropical Medicine & Parasitology, 4" ed.** Wolfe Medical Publications, 2013, London
11. **Harrison's Infectious Diseases, 2nd ed**. Kasper D. Fauci A, 2015
12. **CA Sanford; EC Jong, The Travel and Tropical Medicine Manual, Fifth ed.** Elsevier, 2014

9. Corroboration of the subject content with the expectations of the representatives of the epistemic community, professional associations, and major employers in the field of the programme of study

The appropriate training at the end of the Parasitology course confers the prerequisites for admission to residency training and for the development of a successful medical activity in the current conditions of globalization of the labor market, as well as the unitary concept of international health.

10. Assessment

Type of activity	Assessment criteria	Assessment methods	Assessment weighting within the final grade
Course	Knowledge of the theoretical notions of the subject	Exam multiple choice test	70 %
Clinical rotation	Active participation in seminars, positive feedback and interest in parasitological topics	Protozoan multiple choice test & clinical problem	10%
	Identification and description of the parasite or a specific diagnostic test.	Practical exam: macroscopic sample, microscopic sample-oral	20%
Minimum performance standard			

- Grade 5 (Minimum 50% for each evaluation component) represents the passing grade; The final grade is established based on the evaluation criteria taken into consideration in a weighted manner with the relationship: 70%-10%-20%
- The protozoa test is compulsory, and the practical exam and the final written test are, each separately, eliminatory tests.

Date of filing	**Signature of the course tenured coordinator**	**Signature of the seminar tenured coordinator**
20.10.2022	Lecturer Suzana Cilievici, MD, PhD	Lecturer Suzana Cilievici, MD, PhD

Date of approval in the Council of the Department:	**Signature of the Head of the Department**
	Department Director, Professor Adrian Streinu-Cercel, MD, PhD