



Parasitology

1. IMPRINT	
Academic Year	2020/2021
Faculty	English Division
Field of study	Medicine
Main scientific discipline <i>(in accord with appendix to the Regulation of Minister of Science and Higher education from 26th of July 2019)</i>	Medical sciences
Study Profile <i>(general academic / practical)</i>	General academic
Level of studies <i>(1st level / 2nd level / uniform MSc)</i>	Uniform MSc
Form of studies	Stationary
Type of module / course <i>(obligatory / non-compulsory)</i>	Obligatory
Form of verification of learning outcomes <i>(exam / completion)</i>	Exam
Educational Unit / Educational Units <i>(and address / addresses of unit / units)</i>	Department of General Biology and Parasitology, 5 Chałubińskiego Str., 02-004 Warsaw, tel. (22) 6212607, e-mail: biologia@wum.edu.pl

Head of Educational Unit / Heads of Educational Units	Ph.D., Associate Professor, Daniel Młocicki
Course coordinator (title, First Name, Last Name, contact)	Ph.D., Associate Professor, Monika Dybicz, monika.dybicz@wum.edu.pl
Person responsible for syllabus (First name, Last Name and contact for the person to whom any objections concerning syllabus should be reported)	Monika Dybicz, monika.dybicz@wum.edu.pl
Teachers	Monika Dybicz, Daniel Młocicki, Aleksandra Sędzikowska, Julia Dąbrowska

2. BASIC INFORMATION

Year and semester of studies	3 rd year, 5 th semester	Number of ECTS credits	2.00
FORMS OF CLASSES		Number of hours	ECTS credits calculation
Contacting hours with academic teacher			
Lecture (L)			
Seminar (S)		10	0.35
Discussions (D)			
e-learning (e-L)			
Practical classes (PC)		25	0.65
Work placement (WP)			
Unassisted student's work			
Preparation for classes and completions		35	1.00

3. COURSE OBJECTIVES

O1	The main objective is to provide necessary information on the biology, physiology and morphology of medically important parasites invading the tissues, organs and systems of the human body.
O2	Transfer of knowledge about current problems of medical parasitology, environmental factors of parasite invasion and dispersion, opportunistic species, pathogenesis and course of parasitic diseases in the states of immunosuppression or immunological defects and epidemiology of parasitic invasions.
O3	Making the future doctor aware of the dangers of parasites occurring in Poland and in the world.

O4	Learning the rules for conducting a correct parasitological interview with the patient.
O5	Introduction of the methods of modern laboratory diagnostics.
O6	Acquiring the student's ability to correctly interpret diagnostic test results.

4. STANDARDS OF LEARNING – DETAILED DESCRIPTION OF EFFECTS OF LEARNING (concerns fields of study regulated by the Regulation of Minister of Science and Higher Education from 26 of July 2019; does not apply to other fields of study)

Code and number of effect of learning in accordance with standards of learning <i>(in accordance with appendix to the Regulation of Minister of Science and Higher education from 26th of July 2019)</i>	Effects in time
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Knowledge – Graduate* knows and understands:

C.W13	Epidemiology of parasitic infections, including the geographical range of their occurrence.
C.W16	Human invasive forms or developmental stages of selected parasitic fungi, protozoa, helminths and arthropods, considering the geographical range of their occurrence.
C.W17	Principle of the parasite system - host and basic disease symptoms caused by parasites.
C.W19	Basics of parasitological diagnostics.

Skills– Graduate* is able to:

C.U6	Evaluate environmental threats and use the basic methods to detect the presence of harmful factors (biological and chemical) in the biosphere (in the field of parasitology).
C.U7	Recognize the most common human parasites on the basis of their structure, life cycles and disease symptoms.
C.U9	Prepare the preparation and recognize pathogens under the microscope (in the field of parasitology).

* In appendix to the Regulation of Minister of Science and Higher education from 26th of July 2019 „graduate”, not student is mentioned.

5. ADDITIONAL EFFECTS OF LEARNING (non-compulsory)

Number of effect of learning	Effects of learning i time
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Knowledge – Graduate knows and understands:

K1	Health education issues.
K2	Rules of conducting the scientific research and disseminating their results.

Skills– Graduate is able to:

S1	Carry out diagnostics of parasitic diseases, assess and describe the somatic and mental state of the patient.
S2	Critically evaluate the results of scientific research and properly justify the position.

Social Competencies – Graduate is ready for:

SC1	Transfer of knowledge in the society about parasitological threats in the country and during foreign travel, especially to tropical and endemic regions.
SC2	Use of objective sources of information.

C.W13, C.W16, C.W17, C.W19

6. CLASSES		
Form of class	Class contents	Effects of Learning
Seminars and practical classes	<ol style="list-style-type: none"> 1. Introduction to parasitology. Host-parasite relationship. Protozoa of the digestive and urogenital system (<i>Giardia intestinalis</i>, <i>Entamoeba histolytica</i>/<i>E. dispar</i>, <i>E. coli</i>, <i>Endolimax nana</i>, <i>Iodamoeba butchlii</i>, <i>Balantidium coli</i>, <i>Blastocystis hominis</i>, <i>E. gingivalis</i>, <i>Trichomonas tenax</i>, <i>Pentatrichomonas hominis</i>, <i>T. vaginalis</i>). 2. Cellular and tissue protozoans (<i>Plasmodium</i> spp., <i>Trypanosoma</i> spp., <i>Leishmania</i> spp., <i>Babesia</i> spp.). 3. Opportunistic and facultative protozoans (<i>Toxoplasma gondii</i>, <i>Cryptosporidium parvum</i>, <i>Cyclospora cayetanensis</i>, <i>Isospora belli</i>, <i>Sarcocystis</i> spp., <i>Acanthamoeba</i> spp., <i>Naegleria</i> spp.). 4. Flukes of the digestive and circulatory system (<i>Fasciola hepatica</i>, <i>Opisthorchis felinus</i>, <i>Dicrocoelium dendriticum</i>, <i>Fasciolopsis buski</i>, <i>Schistosoma</i> spp.). 5. Intestinal tapeworms (<i>Taenia solium</i>, <i>T. saginata</i>, <i>Rodentolepis nana</i>, <i>Hymenolepis diminuta</i>, <i>Dipylidium caninum</i>, <i>Diphyllobothrium latum</i>, <i>Spirometra erinaceieuropaei</i>). 6. Nematodes of the gastrointestinal tract (<i>Ascaris lumbricoides</i>, <i>Enterobius vermicularis</i>, <i>Trichuris trichiura</i>, <i>Ancylostoma duodenale</i>, <i>Necator americanus</i>, <i>Strongyloides stercoralis</i>). 7. Helminths invading human tissues and organs (<i>Echinococcus granulosus</i>, <i>E. multilocularis</i>, <i>Toxocara canis</i>, <i>Anisakis</i> spp., <i>Trichinella</i> spp.). 8. Filariae (<i>Loa loa</i>, <i>Onchocerca volvulus</i>, <i>Wuchereria bancrofti</i>, <i>Brugia malayi</i>, <i>Dirofilaria repens</i>, <i>Dracunculus medinensis</i>). Helminthotherapy of human autoimmune diseases. 9. Parasitic arthropods and pathogen carriers. 10. Laboratory diagnostics of parasitic diseases. 11. Repetition. Discussing clinical cases. 12. Preparation recognition. 	C.W13, C.W16, C.W17, C.W19

7. LITERATURE	
Obligatory	
<ol style="list-style-type: none"> 1. Essentials of Medical Parasitology. Apurba Sankar Sastry, Sandhya Bhat K. JP Medical Ltd, 2014. 2. Diagnostic Medical Parasitology. Lynne S. Shore. ASM Press, 2007. 3. Workbook: Parasitology - materials for 3rd year students of English Division Medicine. Monika Pliszka, Bożenna Oleszczak, Monika Dybic. Oficyna Wydawnicza WUM, Warszawa, 2020. 	
Supplementary	
<ol style="list-style-type: none"> 1. Markell and Voge's Medical Parasitology. David T. John, William A Petri. Elsevier Health Sciences, 2006. 4. Medical Parasitology. Rohela Mahmud, Yvonne Ai Lian Lim, Amirah Amir. Springer, 2018 . 	

8. VERIFYING THE EFFECT OF LEARNING

Code of the course effect of learning	Ways of verifying the effect of learning	Completion criterion
C.W13, C.W16, C.W17, C.W19, C.U6, C.U7, C.U9	Question answer or quiz during classes.	The correct answer to the question.
C.W13, C.W16, C.W17, C.W19, C.U6, C.U7, C.U9	Colloquium at the end of the semester.	Obtaining over 50% points.
C.W13, C.W16, C.W17, C.W19, C.U6, C.U7, C.U9	Exam in the form of a multiple choice test.	Obtaining over 50% points.

9. ADDITIONAL INFORMATION *(information essential for the course instructor that are not included in the other part of the course syllabus e.g. if the course is related to scientific research, detailed description of, information about the Science Club)*

1. Students are required to prepare for the course, which will be verified by the student's answer or written test.
2. Students watch microscopic and macroscopic preparations of various forms of development of parasites and make drawings documenting the preparations.
3. Due to contact with invasive material during classes, hygiene instructions should be strictly followed.
4. Attendance at all classes is obligatory, attendance should be on time. Abandoned due to illness should be done with another group after prior agreement with the person responsible for the subject.
5. Students should have the workbook "Parasitology - materials for 3rd year students of English Division Medicine" - available for purchase at the WUM Publishing House (Oficyna Wydawnicza WUM, ul. Pawińskiego 3, 02-106 Warszawa).
6. Persons applying for transfer of the subject from previous years or from another university should write an application to the Head of the Department of General Biology and Parasitology and obtain permission of the Faculty Dean.