



Pomeranian Medical University in Szczecin

SYLLABUS of the MODULE (SUBJECT)

valid from the academic year 2018/2019

General Information

Module title	<i>Biology</i>
Module type	Obligatory
Faculty	Faculty of Medicine and Dentistry
Field of study	<i>Medicine and Dentistry</i>
Major	<i>Not applicable</i>
Level of study	long-cycle (S2J)
Mode of study	intramural
Year of studies, semester	<i>Year I, semester I</i>
ECTS credits (incl. semester breakdown)	3
Type/s of training	<i>40 h including: seminars (15 h)/ practical classes (25h)</i>
Form of assessment	<i>graded assessment</i>
Head of the Department/ Clinic, Unit	Prof. Elzbieta Kalisinska, DSc, PhD
Tutor responsible for the module	Prof. Elzbieta Kalisinska, DSc, PhD, Natalia Lanocha-Arendarczyk PhD
Department's/ Clinic's/ Unit's website	Department of Biology and Medical Parasitology, Powstancow Wielkopolskich Av. 72, 70-111 Szczecin Pomeranian Medical University in Szczecin Phone: +48 91 466 1672 Mail: nlanocha@pum.edu.pl www.pum.edu.pl
Language	English

Detailed information

Module objectives		The aim of the course is increase of the knowledge of ecology, medical parasitology and genetics.
Prerequisite /essential requirements	Knowledge	<p>Increase of knowledge of:</p> <ul style="list-style-type: none"> basics of ecology, genetics, cell biology; environmental and behavioural conditions influencing human health; biology of human parasites, pathogenicity, epidemiology and infection pathways, knowledge of diagnostic techniques in parasitology and prophylaxis of parasitic diseases. <p>Achievement of ability of linking the details included in the patient's interview with the morphology of individual developmental stages of different parasite species and their location in human organism</p>
	Skills	Achievement of ability of analysis relationships between organisms and environmental factors as well as influences of biotic and abiotic factors on vertebrates, operates optic microscope and is able to take advantage of immersion
	Competences	Shows habit of self-education and lifelong education, can co-operate with team members and care about occupational safety

Description of the learning outcomes for the subject /module

No. of learning outcome	Student, who has passed the (subject) knows /is able to /can:	SYMBOL (referring the standards) ZEK	Method of verification of learning outcomes *
W01	Knows importance of main and trace elements in processes within human body with regard to intake, absorption and transport;	K_B.W01	ET
W02	knows basic terms regarding biology and ecology	K_B.W14	
W03	Knows correlations between organisms in ecosystem	K_B.W15	
W04	Knows interactions within parasite-host system	K_B.W16	
W05	Demonstrates knowledge of genetics and molecular biology	K_B.W17	
W06	Knows clinical application of principles of genetics	K_B.W18	
U01	Refers chemical phenomena to processes going on in oral cavity	K_B.U01	PM
U02	Uses biological and ecological concepts in context of human being – habitat	K_B.U04	
U03	Uses knowledge of genetics and molecular biology in clinical practice	K_B.U05	
K01	Shows habit of self-education and lifelong education	K_K01	

Table presenting learning outcomes of the subject/module in relation to the form of classes									
No.	SYMBOL (referring the standards) ZEK	Type/s of training							
		Lecture	Seminar	Practical classes	Clinical classes	Other...
1.	K_B.W01	x							
2.	K_B.W14	x							
3.	K_B.W15	x							
4.	K_B.W16	x							
5.	K_B.W17	x							
6.	K_B.W18	x							
7.	K_B.U01			x					
8.	K_B.U02			x					
9.	K_B.U03			x					
10.	K_K01			x					
Module (subject) contents no.	Description of teaching programme	No. of hours			References to learning outcomes				
LECTURES (15 h)									
TK01	Medicine versus biology and ecology	1			W02				
TK02	Parameters characterising human populations and its diversity (part 1). Demographic explosion (part 2)	2			W02				
TK03	Xenobiotics: the environmental factors, the tolerance range,the bioaccumulation, and the biotransformation	1			W01, W02				
TK04	Essential elements (macro-, micro-, and ultra-elements) with particular emphasis on fluorine, mercury, lead, and cadmium	1			W01				
TK05	Inter-and intraspecific relations with particular emphasis on parasitism (part 1 and 2)	2			W02, W03, W04				
TK06	Human immune system and parasitic diseases	2			W02, W03,W04				
TK07	Selected environmental factors affecting human development and its health status	1			W01				
TK08	Developmental biology and ontogenetic development of <i>Homo sapiens</i> (part 1). Reproduction and the reproductive procedure. Sex determination in humans and other mammals, including the role of SRY gene (part 2)	2			W05				
TK09	Length of human life; organism aging and selected diseases and disorders of old age)	1			W01				
TK10	Human Genome Project	1			W05, W06				
TK11	Selected issues of genetic diagnostics and genetic therapy. Most important human genetic disorders and their detection	1			W05,W06				

PRACTICAL CLASESS (25h)			
TK12	Microscopic technics	2	U02, K01
TK13	Meiosis—human gametogenesis	2	U02, U03,K01
TK14	Chromosome structure in prokaryotes and eukaryotes	2	U02, U03,K01
TK15	Cytogenetic diagnostic methods	2	U02, U03,K01
TK16	Inheritance patterns in humans; Blood types/blood groups	2	U03,K01
TK17	Selected human genetic diseases	2	U02, U03,K01
TK18	Morphology, biology, and epidemiology of parasites: Protista (part I): <i>Trichomonas vaginalis</i> , <i>T. tenax</i> , <i>Giardia lamblia</i> , <i>Trypanosoma gambiense</i> , <i>T. cruzi</i> ;	2	U02, K01
TK19	Morphology, biology, and epidemiology of parasites: Protista (part II): <i>Entamoeba histolytica</i> , <i>E. gingivalis</i> , <i>Plasmodium vivax</i> , <i>Toxoplasma gondii</i>	2	U02, K01
TK20	Morphology, biology, and epidemiology of parasites: flatworms: <i>Schistosoma haematobium</i> , <i>Taenia saginata</i> , <i>T. solium</i> , <i>Echinococcus granulosus</i>	2	U02, K01
TK21	Morphology, biology, and epidemiology of parasites: Roundworms=Nematodes: <i>Ascaris lumbricoides</i> , <i>Trichinella spiralis</i> , <i>Enterobius vermicularis</i> , <i>Trichuris trichiura</i>	2	U02, K01
TK22	Morphology, biology, and epidemiology of parasites: Arthropods (ticks and mites) <i>Ixodes ricinus</i> , <i>Demodex folliculorum</i> , <i>Sarcoptes scabiei</i> , <i>Pediculus humanus</i> , <i>Pthirus pubis</i> , <i>Pulex irritans</i> , <i>Cimex lectularius</i>	2	U02, K01
TK23	Diagnostic methods in parasitology	2	U02, K01
TK24	Student presentations (toxicological and parasitological subjects)	1	U01,U02,U03 K01
Booklist			
Obligatory literature:			
1. Farabee M.J. 2006 On-Line Biology Book http://www.emc.maricopa.edu/faculty/farabee/biobk/biobooktoc.html			
2. Bogitsh B.J., Carter C.E., Oeltmann T.N. 2011. Human Parasitology. Forth edition. Academic Press			
3. Marten G.G. Human Ecology - Basic Concepts for Sustainable Development. Earthscan Publ. 2001 http://www.gerrymarten.com/human-ecology/tableofcontents.html			
4. Tobias E.S., Connor M., Ferguson-Smith M. 2011. Essential Medical Genetics, Includes Desktop Edition, 6th Edition			
Supplementary literature:			
1. Buczek A. (editor) 2007 "Parasitology for Medical Students" Koliber Publ., Lublin 330 pp. ISBN 83-60497-30-3			

Student's workload (balance sheet of ECTS credits)			
Form of student's activity (in-class participation; activeness, produce a report, etc.)	Student's workload [h]		
	Tutor	Student	Average
Contact hours with the tutor	40	40	
Time spent on preparation to seminars/ practical classess	20		
Time spent on reading recommended literature	5		
Time spent on writing report/making project	3		
Time spent on preparing to colloquium/ entry test			
Time spent on preparing to exam	-	-	
Other: time spent to prepare for the final test	17		
Student's workload in total	85		
ECTS credits for the subject (in total)	3		
Remarks			

* Selected examples of methods of assessment:

EP – written examination

EU – oral examination

ET – test examination

EPR – practical examination

K – colloquium

R – report

S – practical skills assessment

RZC – practical classes report, incl. discussion on results

O – student's active participation and attitude assessment

SL – lab report

SP – case study

PS - assessment of student's ability to work independently

W – entry test

PM – multimedial presentation

other...