Pomeranian Medical University in Szczecin

SYLLABUS of the MODULE (SUBJECT)
General Information

Module title: Biology	
Module type	Obligatory
Faculty PMU	Faculty of Medicine and Dentistry
Major	Dentistry
Level of study	long-cycle (S2J)
Mode of study	full-time studies
Year of studies, semester	year I , semester I
ECTS credits (incl. semester breakdown)	3
Type/s of training	30 h including: lectures (10 h, including 3 hours of e-learning)/ practical classes (20h)
Form of assessment*	☒graded assessment: ☐descriptive ☒test ☐practical ☐oral ☐non-graded assessment ☐final examination ☐descriptive ☐test ☐practical ☐oral
Head of the Department/ Clinic, Unit	Prof. Danuta Kosik-Bogacka, DSc, PhD
Tutor responsible for the module	Karolina Kot PhD email: karolina.kot@pum.edu.pl Tel: (091) 466 1851
Department's/ Clinic's/ Unit's website	Department of Biology, Parasitology and Pharmaceutical Botany, tel: (091) 466 1672 https://www.pum.edu.pl/studenci/informacje_z_jednostek/wfbmiml/zaklad_biologii_parazytologii_i_botaniki_farmaceutycznej/
Language	English

* replace ☐ into ☒ where applicable

Detailed information

Module objectives		The aim of the course is increase of the knowledge of ecology, medical parasitology and genetics.
Prerequisite /essential requirements	Knowledge	Increase of knowledge of: • 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. 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
	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)**	**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	B.W1	K
W02	knows basic terms regarding biology and ecology	B.W12	
W03	knows correlations between organisms in ecosystem	B.W13	
W04	knows interactions within parasite-host system	B.W14	
W05	demonstrates knowledge of genetics, molecular biology, and regenerative medicine	B.W15	
W06	knows clinical application of principles of genetics	B.W16	
W07	knows and understands the types and construction of bacteria, viruses, fungi and parasites, their biological features and pathogenicity mechanisms	C.W1	
W08	knows and understands the basics of epidemiology of infections caused by bacteria, viruses, fungi and infections caused by parasites and ways of their spread in human body	C.W3	
W09	knows and understands the species of bacteria, fungi and parasites which are the most frequent etiological factors in infections and infestations	C.W4	
W10	knows and understands the topical and general therapy in infections caused by bacteria, viruses, fungi and infections caused by parasites	C.W22	

U01	refers chemical phenomena to processes going on in oral cavity	B.U4	K, PM
U02	uses biological and ecological concepts in context of human being – habitat	B.U8	
U03	uses knowledge of genetics, molecular biology, and regenerative medicine in clinical practice	B.U9	
U04	is able to interpret results of microbiological examination, serological investigation and antibiogram	C.U2	
U05	is able to analyze clinical course of diseases in pathological processes	C.U5	
K01	recognizes need for complete understanding of physical phenomena in aspects of human body	K5	

Table presenting LEARNING OUTCOMES in relation to the form of classes

No. of learning outcome	Learning outcomes	Type of training						
		Lecture	Seminar	Practical classes	Clinical classes	Simulations	E-learning	Other…
W01	B.W1	X						
W02	B.W12	X						
W03	B.W13	X						
W04	B.W14	X						
W05	B.W15						X	
W06	B.W16						X	
W07	C.W1	X						
W08	C.W3	X						
W09	C.W4	X						
W10	C.W22	X						
U01	B.U1			X				
U02	B.U4			X				
U03	B.U5			X				
U04	C.U2			X				
U05	C.U5			X				
K01	K5			X				

Table presenting TEACHING PROGRAMME

No. of a teaching programme	Teaching programme	No. of hours	References to learning outcomes
Winter semester			
Lectures			
TK01	Inter- and intraspecific relations with particular emphasis on parasitism (part 1 and 2)	2	W02, W03, W04, W07, W08, W09, W10

TK02	Human immune system and parasitic diseases	1	W02, W03, W04, W07, W08, W09, W10
TK03	Essential elements (macro-, micro-, and ultra-elements) with particular emphasis on fluorine, mercury, lead, and cadmium	1	W01, W02
TK04	Human ecology	1	W02
TK04	Selected environmental factors affecting human development and its health status.	1	W01
TK05	Parameters characterising human populations and its diversity. Demographic explosion.	1	W02
TK06	Developmental biology and ontogenetic development of *Homo sapiens* (part 1). Reproduction and the reproductive procedure. Sex determination in humans and other mammals, including the role of SRY gene (part 2)	2	W05,W06
TK07	Selected issues of genetic diagnostics and genetic therapy. Most important human genetic disorders and their detection	1	W05, W06
Practical classes			
TK01	Microsopic techniques	1	U02, K01
TK02	Morphology, biology, and epidemiology of parasites: Protista (part 1): *Trichomonas vaginalis, T. tenax, Giardia lamblia, Trypanosoma brucei gambiense, T. cruzi;*	2	U02, U04, U05, K01
TK03	Morphology, biology, and epidemiology of parasites: Protista (part II): *Entamoeba histolytica, E. gingivalis, Plasmodium vivax, Toxoplasma gonidii*	2	U02, U04, U05, K01
TK04	Morphology, biology, and epidemiology of parasites: flatworms: *Schistosoma haematobium, Taenia saginata, T. solium, Echinococcus granulosus*	2	U02, U04, U05, K01
TK05	Morphology, biology, and epidemiology of parasites: Roundworms=Nematodes: *Ascaris lumbricoides, Trichinella spiralis, Enterobius vermicularis, Trichuris trichiura*	2	U02, U04, U05, K01
TK06	Morphology, biology, and epidemiology of parasites: Arthropods (ticks and mites) *Ixodes ricinus, Demodex folliculorum, Sarcoptes scabiei, Pediculus humanus, Pthirus pubis, Pulex irritans, Cimex lectularius*	2	U02, U04, U05, K01
TK07	Mitosis. Meiosis—human gametogenesis	2	U02, U03, K01
TK08	Chromosome structure in prokaryotes and eukaryotes. Cytogenetic diagnostic methods	2	U02, U03, K01
TK09	Inheritance patterns in humans; Blood types/blood groups	2	U03, K01
TK10	Selected human genetic diseases	2	U02, U03, K01
TK11	Student presentations (toxicological and parasitological subjects)	1	U01, U02, U03, U04,U05, 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	
Form of student's activity (in-class participation; activeness, produce a report, etc.)	Student's workload [h]
	Tutor
Contact hours with the tutor	27
Hours of e-learning3	3
Time spent on preparation to seminars/ practical classes	15
Time spent on reading recommended literature	10
Time spent on writing report/making project	7
Time spent on preparing to colloqium/ entry test	6
Time spent on preparing to exam	-
Other: time spent to prepare for the final test	10
Student's workload in total	78
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 – colloqium
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…