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)/ 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. Elzbieta Kalisinska, DSc, PhD
Tutor responsible for the module	Karolina Kot PhD email: kotkar@pum.edu.pl Tel: (091) 466 1851
Department's/ Clinic's/ Unit's website	Department of Biology and Medical Parasitology, tel: (091) 466 1672 https://www.pum.edu.pl/wydzialy/wydzial-lekarsko-biotechnologiczny/zaklad-biologii-i-parazytologii-medycznej
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.W14	
W03	knows correlations between organisms in ecosystem	B.W15	
W04	knows interactions within parasite-host system	B.W16	
W05	demonstrates knowledge of genetics and molecular biology	B.W17	
W06	knows clinical application of principles of genetics	B.W18	
U01	refers chemical phenomena to processes going on in oral cavity	B.U1	PM
U02	uses biological and ecological concepts in context of human being – habitat	B.U4	
U03	uses knowledge of genetics and molecular biology in clinical practice	B.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.W14	X						
W03	B.W15	X						
W04	B.W16	X						
W05	B.W17	X						
W06	B.W18	X						
U01	B.U1			X				
U02	B.U4			X				
U03	B.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
TK02	Human immune system and parasitic diseases	1	W02, W03, W04
TK03	Essential elements (macro-, micro-, and ultra-elements) with particular emphasis on fluorine, mercury, lead, and cadmium	1	W01
TK04	Xenobiotics: the environmental factors, the tolerance range,the bioaccumulation, and the biotransformation	1	W01, W02
TK05	Selected environmental factors affecting human development and its health status. Influence of mercury and fluoride on human health and environment	1	W01
TK06	Parameters characterising human populations and its diversity. Demographic explosion.	1	W02
TK07	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
TK08	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, K01
TK03	Morphology, biology, and epidemiology of parasites: Protista (part II): *Entamoeba histolytica, E. gingivalis, Plasmodium vivax, Toxoplasma gonidii*	2	U02, K01
TK04	Morphology, biology, and epidemiology of parasites: flatworms: *Schistosoma haematobium, Taenia saginata, T. solium, Echinococcus granulosus*	2	U02, K01
TK05	Morphology, biology, and epidemiology of parasites: Roundworms=Nematodes: *Ascaris lumbricoides, Trichinella spiralis, Enterobius vermicularis, Trichuris trichiura*	2	U02, 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, 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, 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…