Pomeranian Medical University in Szczecin

SYLLABUS of the MODULE (SUBJECT)
General Information

Module title: Biophysics 2023/2024	
Module type	Obligatory
Faculty PMU	Faculty of Medicine and Dentistry
Major	Medicine
Level of study	long-cycle (S2J)
Mode of study	full-time studies
Year of studies, semester	Year 1, semester I
ECTS credits (incl. semester breakdown)	2,5
Type/s of training	seminars (35h)
Form of assessment*	☒graded assessment: ☐descriptive ☒test ☐practical ☐oral ☐non-graded assessment ☐final examination ☐descriptive ☐test ☐practical ☐oral
Head of the Department/ Clinic, Unit	Dr hab. n. med. Wojciech Podraza, wojciech.pozdraza@pum.edu.pl
Tutor responsible for the module	Dr hab. n. med. Wojciech Podraza, wojciech.pozdraza@pum.edu.pl
Department's website	https://www.pum.edu.pl/wydzialy/wydzial-lekarsko-biotechnologiczny/zaklad-fizyki-medycznej/information-for-students
Language	English

* replace ☐ into ☒ where applicable

Detailed information

Module objectives		Lectures and exercises are designed to introduce students to the basic issues of physics and biophysics regarding the physical foundations of physiological processes and to familiarize themselves with the physical phenomena underlying modern medical diagnostics and therapy in medicine.
Prerequisite /essential requirements	Knowledge	physics and mathematics at the matriculation level
	Skills	is able to define and estimate the measurement error, graphically present the results of measurements, know the basic mathematical functions, know the operations on exponents and logarithms
	Competences	openness to knowledge, self-study habit, willingness to cooperate in a group, teamwork skills

Booklist
Obligatory literature:
1. Cameron J., Skofronic J.G., Grant R.M.: Physics of the Body, Medical Physics Publishing 1992
Supplementary literature:
1. „PHYSICS Principles with applications" Douglas C. Giancoli

TEACHING PROGRAMME	
SEMINARS	
Sem 1 (2h)	**Radiation I.**
Sem 2 (2h)	**Radiation II.**
Sem 3 (2h)	**Spectroscopy.**
Sem 4 (2h)	**Lasers, photometry and optical fibers.**
Sem 5 (2h)	**Radiotheraphy.**
Sem 6 (2h)	**Biophysics of the process of seeing and hearing.**
Sem 7 (2h)	**Lungs and breatching.**
Sem 8 (2h)	**Medical diagnostics.**
Sem 9 (2h)	**Ultrasound in medicine.**
Sem 10 (2h)	**Radiation protection in medicine.**
Sem 11 (2h)	**Influence of physcical factors on human body.**
Sem 12 (2h)	**3D printing.**

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	35
Time spent on preparation to seminars/ practical classess	10
Time spent on reading recommended literature	5
Time spent on writing report/making project	5
Time spent on preparing to colloqium	15
Time spent on preparing to exam	
Other …..	
Student's workload in total	70
ECTS credits for the subject (in total)	2,5
Remarks	