



Pomorski Uniwersytet Medyczny w Szczecinie
SYLLABUS of the MODULE (SUBJECT)
General Information

Module title:		Medical informatics and statistics
Module type	Obligatory.	
Faculty PMU	<i>Faculty of Medicine and Dentistry</i>	
Major	<i>Medical and Dentistry</i>	
Specialty	<i>Not applicable</i>	
Level of study	<i>long-cycle</i>	
Mode of study	<i>Full Time</i>	
Year of studies, semester	<i>I/I</i>	
ECTS credits (incl. semester breakdown)	<i>2</i>	
Type/s of training (Number of hours)	<i>Lectures: 5 hrs/practical classes) 20 hours;</i>	
Form of assessment ¹	<input checked="" type="checkbox"/> graded assessment: <input checked="" type="checkbox"/> <i>descriptive:</i> <input checked="" type="checkbox"/> test practical <input type="checkbox"/> oral	
Head of the Department/Clinic, Unit:	<i>dr n. tech. inż. Janusz Paweł Kowalski-Stankiewicz</i>	
Tutor responsible for the module	<i>dr n. tech. inż. Janusz Paweł Kowalski-Stankiewicz</i>	
Name and contact data of the unit	<i>Independent Laboratory of Medical Informatics and Educational Quality Research, 91 48 00 937 inf_dept@pum.edu.pl</i>	
Department's/ Clinic's/ Unit's website	<i>https://www.pum.edu.pl/wydzialy/wydzial-lekarsko-biotechnologiczny/samodzielna-pracownia-informatyki-medycznej-i-badan-jakosci-ksztalcenia</i>	
Language	<i>Polish/English</i>	

¹ where applicable, replace ☐ into ☒

Detailed information

Module objectives		<i>The module objective is to teach measurement data analysis, ability to describe stochastic phenomena, evaluation and inference on the basis of collected data.</i>
Prerequisite /essential requirements	Knowledge	<i>Knowledge of the basics of probability calculus</i>
	Skills	<i>The ability to use any Internet browser to a basic extent and the ability to use knowledge bases on the Internet and to use bibliographic sources</i>
	Competences	<i>The ability to work in a team</i>

Description of the learning outcomes for the subject/module			
No. of learning outcome	Student, who has passed the (subject)	SYMBOL (referring the standards)	Method of verification of learning outcomes*
W01	knows methods of tissue and organ imaging and principles of operation of diagnostic equipment used for this purpose	B.W09.	K, S, PS
U01	use and process information, applying IT tools and using modern sources of medical knowledge	D.U13.	K, S, PS
U02	critically analyse medical literature, including in English, and draw conclusions	D.U16.	K, S, PS
U03	interpret basic epidemiological indicators, define and assess the reliability and accuracy of tests used in screening tests	G.U17.	K, S, PS
K01	is ready to use objective sources of information	K.7.	K, S, PS
K02	is willing to formulate conclusions from own measurements or observations is ready to use reliable sources of information	K.8.	K, S, PS

Table presenting LEARNING OUTCOMES in relation to the form of classes		
No. of	Learning outcomes	Type of training

learning outcome		Lecture	Seminar	Practical classes	Clinical classes	Simulations	E-learning	Other forms
1	B.W09.	x						
2	D.U13.			x				
3	D.U16.			x				
4	G.U17.			x				
5	K.7.			x				
6	K.8.			x				

Table presenting TEACHING PROGRAMME

No. of a teaching programme	Teaching programme	Number of hours	References to learning outcomes
Winter semester			
Lectures			
TK01	Analogue and digital forms of information. Conversion A/C. Digital images. Properties of light.	2	W01
TK02	Human psychovisual model. Illusion. Properties of sound. Frequency analysis. Formants	3	W01
Practical classes			
TK03	Population, random sample, distribution series. Position characteristics. Measures of dispersion and moments of statistical distribution.	4	U01, U02, U03, K01, K02
TK04	Correlation and regression. Coefficient of linear correlation. Linear regression. Spearman's correlation coefficient.	4	U01, U02, U03, K01, K02
TK05	Estimation and verification of statistical hypotheses. Parametric tests: U test for the population mean value. Student's t-test, F-test	4	U01, U02, U03, K01, K02
TK06	ANOVA	4	U01, U02, U03, K01, K02
TK07	Non-parametric tests: chi-square test, sign test and maximum test. Wilcoxon test (Mann-Whitney U test)	4	U01, U02, U03, K01, K02

Booklist:

Obligatory literature:

1. Mikulski T.: Statystyka medyczna, Pomorska Akademia Medyczna, Dział Wydawnictw, Szczecin, 1994
2. Informatyka medyczna, Pod red. R. Rudowski, Wydawnictwo Naukowe PWN, 2003

Supplementary literature:

3. Dobosz M.: Wspomagana komputerowo statystyczna analiza wyników badań. Akademicka Oficyna Wydawnicza EXIT, Warszawa 2001

4. Material available on the Internet - links on educational websites

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	25
Time spent on preparation to seminars/ practical classess	3
Time spent on reading recommended literature	4
Time spent on writing report/making projections	0
Time spent on preparing to colloquium/ entry test	6
Time spent on preparing to exam	0
Other	0
Student's workload in total	38
ECTS credits for the course (in total)	2
Notes	

* 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 RZĆ –

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...