Zał. nr 5 do ZW 78/2023

Attachment no. 4. to the Program of Studies

FACULTY of CHEMISTRY

SUBJECT CARD

Name of subject in Polish Wprowadzenie do Statystyki
Name of subject in English Introductory Statistics
Main field of study (if applicable): **Biosciences**
Specialization (if applicable): **Medicinal Chemistry**
Profile: academic / ~~practical~~*
Level and form of studies: ~~1st~~/ 2nd level, ~~uniform magister studies~~*, full-time / ~~part-time~~*
Kind of subject: obligatory / ~~optional~~ / ~~university-wide~~*
Subject code W03BSS-SM2017C
Group of courses NO

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)		15			
Number of hours of total student workload (CNPS)		50			
Form of crediting (Examination / crediting with grade)		crediting with grade			
For group of courses mark (X) final course					
Number of ECTS points		2			
including number of ECTS points for practical classes (P)		2			
including number of ECTS points corresponding to classes that require direct participation of lecturers and other academics (BU)		0.7			

*delete as not necessary

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. Basic knowledge of mathematical calculations, linear algebra.
2. Basic ability to use a spreadsheet software.

SUBJECT OBJECTIVES

C1 Acquainting the student with the basics of descriptive statistics and possibilities of its practical usage.
C2 Acquainting the student with possibilities of mathematical models utilization in analysis and interpretation of data.

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:
PEU_W01 Student has a basic knowledge in the area of descriptive statistics.
PEU_W02 Student has information about data analysis methods with aid of statistics.

relating to skills:
PEU_U01 Student is able to solve basic problems from the descriptive statistics field and is able to present experimental data sets in an appropriate way.

relating to social competences:
PEU_K01 Student is able to present and explain the results of the completed project.

PROGRAMME CONTENT

	Classes	**Number of hours**
Cl 1	Introduction to the basic subjects of descriptive statistics. Types of data sets.	2
Cl 2	Methods of experimental data processing and its analysis.	2
Cl 3	Numerical and graphical representation of the statistical data.	2
Cl 4	Confidence intervals and statistical hypothesis testing. Student's t-test.	2
Cl 5	Data distribution functions and its utilization.	2
Cl 6	Correlation analysis of experimental data.	2
Cl 7	Usage of ANOVA tests in data analysis.	2
Cl 8	Analysis of common errors and application of improvements.	1
	Total hours	**15**

TEACHING TOOLS USED

N1. Multimedia presentation.
N2. Solving project tasks with mathematical and statistical calculations software.
N3. Project with usage of *Design thinking* method.

EVALUATION OF SUBJECT LEARNING OUTCOMES ACHIEVEMENT

Evaluation (F – forming during semester), P – concluding (at semester end)	Learning outcomes code	Way of evaluating learning outcomes achievement
F1	PEU_W01, PEU_U01	Sprawozdanie 1
F2	PEU_W01, PEU_W02, PEU_U01	Sprawozdanie 2
F3	PEU_W01, PEU_W02, PEU_U01, PEU_K01	Sprawozdanie 3
P = (F1 + F2 +F3) / 3		

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

[1] A. Agresti, C. A. Franklin, Statistics: the art and science of learning from data, Pearson Prentice Hall, Upper Saddle River, 2007,
[2] T. Hill. P. Lewicki, Statistic: methods and applications: a comprehensive reference for science, industry and data mining, StatSoft, Tulsa, 2006.

SECONDARY LITERATURE:

[1] L. Rogers, D. Willoughby, Numbers: data and statistics for the non-specialist, HarperCollins Publishers, London, 2013.

SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)

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