

FACULTY OF CHEMISTRY					
SUBJECT CARD					
Name of subject in Polish:	Wprowadzenie do statystyki				
Name of subject in English:	Introductory statistics				
Main field of study:	Chemistry				
Specialization:	Medicinal Chemistry				
Profile:	practic				
Level and form of studies:	2nd level, full-time				
Kind of subject:	obligatory				
Subject code:	CHC024069				
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)		60			
Form of crediting		crediting with grade			
For group of courses mark (X) final course					
Number of ECTS points		2			
including number of ECTS points for practical (P) classes		2			
including number of ECTS points for direct teacher-student contact (BK) classes		0.5			
<b>PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES</b> 1. Basic knowledge of mathematical calculations, linear algebra. 2. Basic ability to use a spreadsheet software.					
<b>SUBJECT OBJECTIVES</b> 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.					
<b>SUBJECT EDUCATIONAL EFFECTS</b> <b>relating to knowledge:</b> PEK_W01 Student has a basic knowledge in the area of descriptive statistics. PEK_W02 Student has information about data analysis methods with aid of statistics. <b>relating to skills:</b> PEK_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. <b>relating to social competences:</b> PEK_K01 Student is able to present and explain the results of the completed project.					
<b>PROGRAMME CONTENT</b>					
Classes					Number of hours
C11	Introduction to the basic subjects of descriptive statistics. Types of data sets.				2
C12	Methods of experimental data processing and its analysis.				2

CI3	Numerical and graphical representation of the statistical data.	2
CI4	Confidence intervals and statistical hypothesis testing. Student's t-test.	2
CI5	Data distribution functions and its utilization.	2
CI6	Correlation analysis of experimental data.	2
CI7	Usage of ANOVA tests in data analysis.	2
CI8	Analysis of common errors and application of improvements.	1
	Total hours	<b>15</b>
<b>TEACHING TOOLS USED</b>		
N1. Multimedia presentation. N2. Solving project tasks with mathematical and statistical calculations software. N3. Project with usage of <i>Design thinking</i> method.		
<b>EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT</b>		
<b>Evaluation</b> (F – forming (during semester), P – concluding (at semester end))	Educational effect number	Way of evaluating educational effect achievement
F1	PEK_W01, PEK_U01	Report 1
F2	PEK_W01, PEK_W02, PEK_U01	Report 2
F3	PEK_W01, PEK_W02, PEK_U01, PEK_K01	Report 3
$C = (F1 + F2 + F3) / 3$		
<b>PRIMARY AND SECONDARY LITERATURE</b>		
<b><u>PRIMARY LITERATURE:</u></b>		
[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.		
<b><u>SECONDARY LITERATURE:</u></b>		
[1] L. Rogers, D. Willoughby, Numbers: data and statistics for the non-specialist, HarperCollins Publishers, London, 2013.		
<b>SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)</b>		
dr inż. Izabela Pawlaczyk-Graja + team,    izabela.pawlaczyk@pwr.edu.pl		