

DESCRIPTION OF THE COURSE OF STUDY

Course code	0531.6.CHEM1.B/C.PSwLC	
Name of the course in	Polish	Podstawy statystyki w laboratorium chemicznym
	English	Basics of statistics in chemical laboratory

1. LOCATION OF THE COURSE OF STUDY WITHIN THE SYSTEM OF STUDIES

1.1. Field of study	Chemistry
1.2. Mode of study	Full-time studies
1.3. Level of study	First cycle
1.4. Profile of study*	General academic
1.5. Person/s preparing the course description	Sabina Dołęgowska, Artur Michalik, Karina Krzciuk
1.6. Contact	Sabina.Dolegowska@ujk.edu.pl; tel. 41-349-70-23

2. GENERAL CHARACTERISTICS OF THE COURSE OF STUDY

2.1. Language of instruction	Polish, English
2.2. Prerequisites*	Mathematics

3. DETAILED CHARACTERISTICS OF THE COURSE OF STUDY

3.1. Form of classes	e.g. lectures, classes (including e-learning)	
3.2. Place of classes	Courses in a teaching rooms of UJK	
3.3. Form of assessment	Lecture: exam Laboratory classes: credit with grade	
3.4. Teaching methods	Lecture: informative lecture Laboratory classes: solving problems	
3.5. Bibliography	Required reading	Petrie A., Sabin C. Medical Statistics at a Glance. Third Edition. John Wiley & Sons, Ltd. 2009. Brown S., Tauler R., Walczak B. COMPREHENSIVE CHEMOMETRICS: Chemical and Biochemical Data Analysis. Elsevier 2009.
	Further reading	Brereton R. Applied Chemometrics for Scientists. John Wiley & Sons, Ltd. 2007. Online materials

4. OBJECTIVES, SYLLABUS CONTENT AND INTENDED LEARNING OUTCOMES

4.1. Course objectives (including form of classes)	
Lecture: C1 - The main aim of the lecture is to familiarise students with the statistical methods used in the description and analysis of chemical processes, as well as with the specialised terminology of statistics.	
Laboratory classes: C1 - The main aim of the laboratory classes is to acquire the ability to select and apply statistical methods correctly, and to critically evaluate the methods used.	
4.2. Detailed syllabus (including form of classes)	
Lecture: Selected Statistical Concepts. Types of variables. Measurement scales. Descriptive Statistics. Measures of location, dispersion, asymmetry and concentration. Theoretical distributions - examples. Statistical tests. Statistical hypotheses. Selected parametric and nonparametric tests for one and two populations, e.g., the agreement tests, the independence tests. Correlation and regression. Rank correlation.	
Laboratory: Acquisition of practical skills in applying basic statistical methods to analyse experimental data and interpret chemical processes using statistics.	

4.3 Intended learning outcomes

Code	A student, who passed the course	Relation to learning outcomes
within the scope of KNOWLEDGE:		
W01	Zna wybrane pojęcia statystyczne	CHEM1A_W02
W02	Knows selected parametric and non-parametric tests and parameters that determine the strength of a relationship between variables	CHEM1A_W02
W03	Knows basic Polish and English statistical terminology	CHEM1A_W02

within the scope of ABILITIES:		
U01	Can select an appropriate statistical test on the basis of his/her knowledge, formulate a statistical hypothesis and test it.	CHEM1A_U03
U02	Can judge the strength of a relationship between variables on the basis of statistical parameters.	CHEM1A_U03
within the scope of SOCIAL COMPETENCE:		
K01	Is prepared to critically evaluate his/her knowledge, selection and use of familiar statistical methods	CHEM1A_K01

4.4. Methods of assessment of the intended learning outcomes		
Teaching outcomes (code)	Method of assessment (+/-)	
	Exam (written)*	Test*
	Form of classes	Form of classes
	<i>L</i>	<i>LC</i>
W01	+	-
W02	+	-
W03	+	+
U01	-	+
U02	-	+
K01	-	+

*delete as appropriate

4.5. Criteria of assessment of the intended learning outcomes		
Form of classes	Grade	Criterion of assessment
Lecture (L) (including e-learning)	3	51%-60% of the total number of available points
	3,5	61%-70% of the total number of available points
	4	71%-80% of the total number of available points
	4,5	81%-90% of the total number of available points
	5	91%-100% of the total number of available points
Laboratory classes (C)* (including e-learning)	3	51%-60% of the total number of available points
	3,5	61%-70% of the total number of available points
	4	71%-80% of the total number of available points
	4,5	81%-90% of the total number of available points
	5	91%-100% of the total number of available points

5. BALANCE OF ECTS CREDITS – STUDENT'S WORK INPUT

Category	Student's workload	
	Full-time studies	Extramural studies
<i>NUMBER OF HOURS WITH THE DIRECT PARTICIPATION OF THE TEACHER /CONTACT HOURS/</i>	30	
<i>Participation in lectures*</i>	15	
<i>Participation in laboratory classes*</i>	15	
<i>INDEPENDENT WORK OF THE STUDENT/NON-CONTACT HOURS/</i>	20	
<i>Preparation for the exam*</i>	10	
<i>Preparation for the laboratory classes*</i>	10	
<i>TOTAL NUMBER OF HOURS</i>	50	
ECTS credits for the course of study	2	

*delete as appropriate

Accepted for execution (date and legible signatures of the teachers running the course in the given academic year)

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