

DESCRIPTION OF THE COURSE OF STUDY

Course code	0512.6.BIOT1.B/C.PS	
Name of the course in	Polish	Podstawy statystyki
	English	Fundamentals of statistics

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

1.1. Field of study	Biotechnology
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	Lecture, laboratory classes (computer classes)	
3.2. Place of classes	Courses in the teaching rooms of UJK	
3.3. Form of assessment	Lecture: credit with grade 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 objective of the lecture is to familiarise students with the statistical methods used in the description and analysis of biotechnological processes, as well as with the specialised terminology of statistics.	
Laboratory classes: C1 - The main aim of the exercises is for the student 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. The agreement tests for one and two populations. The independence tests for one and two populations. Correlation and regression. Parameters that determine the strength of the relationship between variables. Rank correlation. Data visualisation.	
Laboratory: Acquisition of practical skills in applying basic statistical methods to analyse experimental data and interpret biotechnological processes using mathematical statistics.	

4.3 Intended learning outcomes

Code	A student, who passed the course	Relation to learning outcomes
within the scope of KNOWLEDGE:		
W01	Knows selected statistical concepts	BIOT1A_W05

W02	Knows selected parametric and non-parametric tests and parameters that determine the strength of a relationship between variables	BIOT1A_W05
W03	Knows basic Polish and English statistical terminology	BIOT1A_W07
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.	BIOT1A_U04
U02	Can judge the strength of a relationship between variables on the basis of statistical parameters.	BIOT1A_U04
within the scope of SOCIAL COMPETENCE:		
K01	Is prepared to critically evaluate his/her knowledge, selection and use of familiar statistical methods	BIOT1A_K01

4.4. Methods of assessment of the intended learning outcomes		
Teaching outcomes (code)	Method of assessment (+/-)	
	Final test*	Test*
	Form of classes	Form of classes
	L	LC
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>	60	
<i>Participation in lectures*</i>	30	
<i>Participation in laboratory classes*</i>	30	
<i>INDEPENDENT WORK OF THE STUDENT/NON-CONTACT HOURS/</i>	40	
<i>Preparation for the lecture*</i>	10	
<i>Preparation for the laboratory classes*</i>	30	
<i>TOTAL NUMBER OF HOURS</i>	100	
ECTS credits for the course of study	4	

**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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