KAPITAŁ LUDZKI
NARODOWA STRATEGIA SPÓJNOŚCI

Projekt współfinansowany przez Unię Europejską w ramach Europejskiego Funduszu Społecznego

UNIA EUROPEJSKA
EUROPEJSKI
FUNDUSZ SPOŁECZNY

Course title	ECTS code
Statistics in biotechnology 2	11.2.0292

Name of unit administrating study

Intercollegiate Faculty of Biotechnology UG-MUG

Studies

faculty	field of study		
Intercollegiate Faculty of Biotechnology UG-MUG	Biotechnology	type	second tier studies (MA)
		form	full-time
		specialty	all
		specialization	all

Teaching staff

dr hab. Adam Iwanicki

Forms of classes, the realization and number of hours

Forms of classes

Laboratory classes

The realization of activities

classroom instruction

Number of hours

Laboratory classes: 15 hours

ECTS credits

2

The academic cycle

2021/2022 summer semester

Type of course

obligatory

Language of instruction

polish

Teaching methods

group work

Form and method of assessment and basic criteria for eveluation or examination requirements

Final evaluation

Graded credit

Assessment methods

assignment work – completing a specific practical assignment

The basic criteria for evaluation

Each of the mentioned learning outcomes will be assessed. Students must obtain at least a satisfactory grade for each assessed learning outcome. The final grade is a mean of partial grades. The assessment is performed according to percentage index (compliant with the Rules and Regulations for Studies at the UG).

Method of verifying required learning outcomes

All learning outcomes will be verified based on performed tasks:
- selection of appropriate data analysis method,
- correct conducting of the analysis,
- appropriate preparation of data and drawing proper conclusions.

Required courses and introductory requirements

A. Formal requirements
Statistics or equivalent

B. Prerequisites
N/A

Aims of education

The aim of the course in to acquaint students with practical methods of statistical analysis of experimental data with use of such programs as MS Excel and Past.

Students will acquire knowledge about statistical methods used in biotechnology.
Students will become skillful in appropriate acquiring experimental data and preparing them for analysis with statistical methods. Moreover, students will become skillful in conducting properly statistical analyses of experimental data and drawing appropriate conclusions based on performed analyses.

Course contents

1. Planning of and experiment which will provide data appropriate for correct statistical analysis.
2. Preparation of experimental data for analysis.
3. Selection of an appropriate method of graphical presentation of experimental data.
4. Verification of statistical hypothesis. Calculation of statistical power.
5. Introduction to linear models.
6. Parametric and non-parametric analysis of variance.
7. Analysis of regression with selection of significant explanatory variables.

Bibliography of literature

Adam Łomnicki „Wprowadzenie do statystyki dla przyrodników”, PWN, Warszawa 2014
Robert R. Sokal F. "Introduction to biostatistics", Dover Publications
Instructions prepared by the teacher
A course prepared in the UG Education Portal

The learning outcomes (for the field of study and specialization)

KW_05
KU_02
KU_03_BM

Knowledge

KW_05 - Has knowledge in the field of sciences and life sciences, indispensable for the understanding of basic natural phenomena and processes, in particular cellular processes on molecular level

Skills

KU_02 - Collects and interprets experimental data; uses statistical methods and informatics tools in data analysis; draws conclusions from experimental data
KU_03_BM - Is capable of working independently or in a team; when working in a team is able to take different roles, including the role of a leader

Social competence

N/A

Contact

adam.iwanicki@biotech.ug.edu.pl