MODULE DESCRIPTION (SYLLABUS)

1.	Module: **Introduction to Statistics**
2.	Language of instruction: **English**
3.	Faculty: **Faculty of Biotechnology**
4.	Course/module code: **29-BT-S1-E2-IOFEEng** **29-BT-S1-E2-IOFEEngc**
5.	Course/module type (*mandatory* or *elective*): **mandatory**
6.	Programme: **Biotechnology**
7.	Study cycle (*1st/2nd*): **1st cycle**
8.	Year: **1st**
9.	Semester *(autumn* or *spring):* **spring**
10.	Form of tuition and number of hours **Lecture, 30 h** **Tutorial, 30 h**
11.	Course coordinator(s): **Paweł Błażej, PhD**
12.	Initial requirements (knowledge, skills, social competences): **Students are expected to be familiar with basics of mathematics. They are able to formulate simple problems in terms of mathematical formulas.**
13.	Objectives: **To acquaint students with the basic issues related to the theory of probability and mathematical statistics. Preparing students for independent statistical analysis.**
14.	Content: **1. Randomness – definition, some introductory examples.** **2. Classical probability distributions.** **3. Descriptive statistics: arithmetic mean, variance, median.**

<table>
<tr><td></td><td colspan="2">4. Point estimation - the law of large numbers.
5. Interval estimation.
6. Testing statistical hypotheses: one and two samples.
7. Analysis of variance and chi-square test.</td></tr>
<tr><td>15.</td><td>Learning outcomes:
Student understands why statistical analyzes are conducted;
The student is able to build, based on information, an adequate statistical model;
Student can perform the necessary calculations;
Student is able to interpret the results of the analyzes.</td><td>Outcome symbols:
K1_W01 / K1_K01
K1_W03 / K1_W07
K1_U06
K1_U06</td></tr>
<tr><td>16.</td><td colspan="2">Recommended literature:
• Brian Williams ,,Biostatistics” Chapman & Hall New York 1993;
• materials provided by the teacher.</td></tr>
<tr><td>17.</td><td colspan="2">Methods of verification of the assumed learning outcomes:
• Lect.: written exam
• Tut.: written tests, individual student’s work (solving problems) at class.</td></tr>
<tr><td>18.</td><td colspan="2">Conditions of earning credits:
• The presence and active participation in tutorial classes;
• Completion of the tutorial classes is based on a written test;
• Completion of the lecture is based on a written exam.</td></tr>
<tr><td rowspan="5">19.</td><td colspan="2">Student’s workload:</td></tr>
<tr><td>Activity</td><td>Number of hours for the activity</td></tr>
<tr><td>Hours of instruction (as stipulated in study programme) :
• Lect.: 30 h
• Tut.: 30 h</td><td>60 h</td></tr>
<tr><td>Student’s own work
• preparation before classes: 20 h
• preparation for the test and final exam: 40 h</td><td>60 h</td></tr>
<tr><td>Total number of hours:</td><td>120 h</td></tr>
<tr><td></td><td>Number of ECTS:
• Lect.: 6 ECTS
• Tut.: 2 ECTS</td><td>6 ECTS</td></tr>
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