MODULE DESCRIPTION (SYLLABUS)

1.	Module: **Computer Sciences**
2.	Language of instruction: **English**
3.	Faculty: **Faculty of Biotechnology**
4.	Course/module code: **29-BT-S1-E1-ENCS** (Lect.) **29-BT-S1-E1-ENCSc** (Comp. Lab.)
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):* **autumn**
10.	Form of tuition and number of hours: Lecture: **15 h** Computer Laboratory: **30 h**
11.	Course coordinator(s): **Paweł Błażej, PhD**
12.	Initial requirements *(knowledge, skills, social competences)*: **Basic computer skills.**
13.	Objectives: **The main objective of the course is to introduce students to the advanced features of Microsoft Excel 2000, such as analysis toolpack package including basic statistics, hypothesis testing, one-way Anova. In the second part the basic features of Linux operating system (such as grep, sed, awk, bash) are presented. Students will also learn how to write basic bash and Perl script and use these tools in practise, especially in case of large data sets.**
14.	Content: **Introduction to MS Excel, Linux operating system, Perl language.**

<table>
<tr><td rowspan="2">15.</td><td>Learning outcomes:
• Student knows computational methods known in the field of statistics, as well as computer tools allowing for data analysis and interpretation of the results;
• Student uses basic statistical methods and computer technology to describe biological phenomena and analysis of experimental data;
• Student understands the need for continuing education throughout the whole life, including deepening knowledge in computer science.</td><td>Outcome symbols:
K1_W07,
K1_U06,
K1_K01</td></tr>
<tr><td>16.</td><td colspan="2">Recommended literature:
• Excel 2010 Bible, John Walkenbach, John Wiley & Sons 2010;
• Introduction to Linux, A Hands on Guide, Machtelt Garrels: www.tldp.org/LDP/intro-linux/html/;
• Begginer`s Introduction to Perl: www.perl.com.</td></tr>
<tr><td>17.</td><td colspan="2">Methods of verification of the assumed learning outcomes:
• Lect.: written exam;
• Comp. Lab.: three tests during the semester.</td></tr>
<tr><td>18.</td><td colspan="2">Conditions of earning credits:
• active participation in computer laboratory classes;
• completion of the computer laboratory is based on a three tests;
• 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.: 15 h
• Comp. Lab.: 30 h</td><td>45 h</td></tr>
<tr><td>Student’s own work:
• preparation before classes: 10 h
• preparation for test and final exam: 35 h</td><td>45 h</td></tr>
<tr><td>Total number of hours</td><td>90 h</td></tr>
<tr><td></td><td>Number of ECTS:
• Lect.: 2 ECTS
• Comp. Lab.: 2 ECTS</td><td>4 ECTS</td></tr>
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