COURSE DESCRIPTION (SYLLABUS)

1.	Course: **Animal Physiology**
2.	Language of instruction: **English**
3.	Faculty: **Faculty of Biotechnology**
4.	Course/module code: **29-BT-S1-E4-EnAph**
5.	Course/module type (*mandatory* or *elective*): **mandatory**
6.	Programme: **Biotechnology**
7.	Study cycle (*1st/2nd*): **1st cycle**
8.	Year: **2nd**
9.	Semester *(autumn* or *spring):* **spring**
10.	Form of tuition and number of hours: Lecture: **30 h**
11.	Coordinator(s): **Dariusz Rakus, Prof.**
12.	Initial requirements *(knowledge, skills, social competences)*: **Basic knowledge of biochemistry, biophysics and cell biology.**
13.	Objectives: **Understanding, on the molecular level, of the basic mechanisms of the reception and processing of exo- and endogenous stimuli by animal organisms. Understanding of physiological processes – on the cellular and organismal level – necessary to maintain homeostasis of animal organism.**
14.	Content: **The mechanisms of excitability; synaptic transmission; G-protein coupled receptors and signaling networks; central and peripheral nervous system; endocrine system; muscle contraction and neural regulation of the locomotor system; mechano- and thermoreceptors, nociceptors; mechanism of visual stimuli perception and processing; chemoreceptors: olfaction and gustation; respiration and gas exchange; circulatory**

<table>
<tr><td></td><td colspan="2">system; ion and volume homeostasis; gluco- and thermostasis; biological rhythms; the mechanism of addiction and psychoactive drug action.</td></tr>
<tr><td>15.</td><td>Learning outcomes:
Students:
• have extensive knowledge in the field of biochemistry and physiology, be able to integrate the knowledge on cell metabolism and information processing at the level of the whole organism;
• know the basic concepts, terms, techniques used in biochemistry, physiology and molecular biology, be versed in the development of the above-mentioned fields;
• read and understand scientific literature in the field of biochemistry, physiology, molecular medicine and molecular biology in English;
• take advantage of the online resources and literature to obtain information on physiology, molecular biology and molecular medicine;
• prepare writings in English, professional reports in the field of biochemistry, physiology, biotechnology and molecular biology;
• learn a given subject by himself;
• understand the need for continuing education throughout the whole life, including broadening knowledge in physiology and molecular biology.</td><td>Outcome symbols:
K1_W05
K1_W06
K1_U03
K1_U04
K1_U10
K1_U12
K1_K01</td></tr>
<tr><td>16.</td><td colspan="2">Recommended literature:
• Berne & Levy Physiology, 6th Edition, 2011.
• B J.M. Berg, L. Stryer, J. L. Tymoczko, Bioochemistry.</td></tr>
<tr><td>17.</td><td colspan="2">Methods of verification of the assumed learning outcomes:
• written exam</td></tr>
<tr><td>18.</td><td colspan="2">Conditions of earning credits::
• positive exam result</td></tr>
<tr><td rowspan="3">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):
• lecture: 30 h
• consultations: 5 h</td><td>35 h</td></tr>
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	Student's own work: • reading the literature • preparation for the exam	35 h
	Total number of hours:	**70 h**
	Number of ECTS:	**3 ECTS**