

KARTA PRZEDMIOTU**ANIMAL PHYSIOLOGY****I. Dane podstawowe**

Nazwa przedmiotu	Fizjologia zwierząt
Nazwa przedmiotu w języku angielskim	Animal physiology
Kierunek studiów	Biotechnologia
Poziom studiów (I, II, jednolite magisterskie)	I
Forma studiów (stacjonarne, niestacjonarne)	stacjonarne
Dyscyplina	biologia
Język wykładowy	Grupy w języku polskim – język polski Grupy w języku angielskim – język angielski

Koordynator przedmiotu/osoba odpowiedzialna	Dr hab. Anna Rymuszka
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Forma zajęć (<i>katalog zamknięty ze słownika</i>)	Liczba godzin	semestr	Punkty ECTS
lecture	30	III	6
classes	30	III	

Wymagania wstępne	basics of: cytophysiology and ontogenesis, chemistry
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II. Cele kształcenia dla przedmiotu

To acquire knowledge about the principles of functioning of the human and animal organism.
Getting acquainted with biological processes taking place in living organisms. Knowledge and understanding of adaptive mechanisms to maintain homeostasis of the organism.

III. Efekty kształcenia dla przedmiotu wraz z odniesieniem do efektów kierunkowych

Symbol	Opis efektu przedmiotowego	Odniesienie do efektu kierunkowego
KNOWLEDGE		
W_01	explains basic physiological concepts and terms, principles of functioning of the following systems: nervous, hormonal, digestive, respiratory, circulatory, excretory, sense organs of the human and animal organism;	K_W01, K_W02, K_W08,
W_02	is able to interpret the biological, biochemical and biophysical processes which occurring in living organisms;	K_W03, K_W08,
W_03	understands and correctly interprets the body's reactions to environmental stress and adaptive mechanisms;	K_W01, K_W02,
SKILLS		
U_01	selects and applies the method of analysis of the basic physiological phenomena and is able to interpret the obtained data;	K_U01, K_U02, K_U03,
U_02	performs selected basic serological and biochemical analyses of blood and urine; measurements of reflex reactions and stimulus	K_U01, K_U02, K_U05,

	perception, assessment of heart rate and blood pressure under unencumbered conditions and after physical exertion;	
U_03	designs, executes and interprets the spirometric measurements;	K_U02, K_U05
U_04	verifies the physiological parameters with the reference values based on literature data;	K_U07, K_U10,
U_05	elaborates in writing issues related to the mechanisms of functioning of individual organs, systems;	K_U10,
SOCIAL COMPETENCES		
SOCIAL COMPET ENCESK_ 01	is open to improving their knowledge and skills to improve the quality of life;	K_K01,
K_02	is able to cooperate in the group; demonstrates a willingness to solve tasks and discuss in a team;	K_K02,
K_03	possesses appropriate habits required to the work in scientific laboratories, proceeds according to work safety regulations, knows about behaviour in danger	K_K03,

IV. Opis przedmiotu/ treści programowe

Lecture contents:

Hematopoiesis; composition and functions of the plasma; iron metabolism; types of the circulatory systems in vertebrates; the venous blood return to the heart, morphology and characteristics of blood vessels; homeostasis; regulation of the circulatory system; metabolism, catabolism, anabolism, the role of enzymes in the regulation of metabolism, vitamins, minerals; the acid-base balance and regulation; thermoregulation, the importance and functioning of the endocrine glands: hypothalamus, pituitary, thyroid, parathyroids, adrenals, pineal body; functions of the hypothalamo-pituitary axis; hormones.

Classes content:

- functions of plasma proteins, homeostasis; determination of hematocrit and hemoglobin, erythrocyte sedimentation rate;
- dynamics of blood circulation; regulation of cardiovascular system, changes in cardiovascular function, characteristic of the cardiac muscle, mechanical and electrical events in the cardiac cycle, blood pressure, determination the physical fitness using the \"Harvard step-up test \";
- respiratory, gas transport, regulation of respiratory system, lung volumes and capacities, spirometry;
- functional morphology of the kidney, nephron structure and function, regulation of the urinary system, endocrine function of the kidney, renal clearance;
- digestion and absorption, secretion and regulation of gastric secretion, bile duct and pancreatic secretion, liver functions;
- physiology of nerve cells, membrane potentials, synaptic conduction, reflex arc;
- 7 information and the senses, perception and processing of various types of stimuli, the phenomenon of adaptation, receptors, anatomy of the eye, functions of the retina, photoreceptors, color vision, mechanisms of visual perception, the functional anatomy of the ear, smell and taste physiology;

V. Metody realizacji i weryfikacji efektów kształcenia

Symbol	Metody dydaktyczne	Metody weryfikacji	Sposoby dokumentacji
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efektu	(lista wyboru)	(lista wyboru)	(lista wyboru)
KNOWLEDGE			
W_01	Conventional lecture, Work with text, Laboratory analysis, Discussion, Guided practice	Report, Written test, Exam/ Written test	Report file, Evaluated written test, Evaluated written exam,
W_02	Conventional lecture, Work with text, Laboratory analysis, Discussion, Guided practice	Report, Written test, Exam/ Written test	Report file, Evaluated written test, Evaluated written exam,
W_03	Conventional lecture, Work with text, Laboratory analysis, Discussion, Guided practice	Report, Written test, Exam/ Written test	Report file, Evaluated written test, Evaluated written exam,
SKILLS			
U_01	Laboratory classes, Practical classes, Group Work, Socratic method	Report, Written test,	Report file, Evaluated written test,
U_02	Laboratory classes, Practical classes, Group Work, Socratic method	Report, Written test,	Report file, Evaluated written test,
U_03	Laboratory classes, Practical classes, Group Work, Socratic method	Report, Written test,	Report file, Evaluated written test,
U_04	Laboratory classes, Practical classes, Group Work, Socratic method	Report, Written test,	Report file, Evaluated written test,
U_05	Laboratory classes, Practical classes, Group Work, Socratic method	Report, Written test,	Report file, Evaluated written test,
SOCIAL COMPETENCES			
K_01	Laboratory classes, Socratic method	Report, Written test,	Report file, Evaluated written test,
K_021	Laboratory classes, Socratic method	Report, Written test,	Report file, Evaluated written test,
K_03	Laboratory classes, Socratic method	Report, Written test,	Report file, Evaluated written test,

VI. Kryteria oceny, wagi...

Grades from the written examination, colloquium and reports are taken into account. The indicated level of knowledge of the educational content applies to each of the assessed elements.

Ocena	Kryteria oceny	
Note (5)	student accomplishes the assumed learning outcomes to a very good degree	demonstrates knowledge of the education content at the level of 91-100%
Note (4,5)	student accomplishes the	demonstrates knowledge of the education

	assumed learning outcomes to an extent over good	content at the level of 86-90 %
Note(4)	student accomplishes the assumed learning outcomes to a good degree	demonstrates knowledge of the education content at the level of 71-85%
Note (3,5)	student accomplishes the assumed learning outcomes to a quite good degree	demonstrates knowledge of the education content at the level of 66-70%
Note (3)	the student accomplishes the assumed learning outcomes to a sufficient degree	demonstrates knowledge of the education content at the level of 51-65%
Note (2)	the student accomplishes the assumed learning outcomes to an insufficient degree	demonstrates knowledge of the education content at the level below of 51%

VII. Obciążenie pracą studenta

Forma aktywności studenta	Liczba godzin
Liczba godzin kontaktowych z nauczycielem	60
Liczba godzin indywidualnej pracy studenta	90

VIII. Literatura

Grupy w języku polskim

Literatura podstawowa
1. Traczyk W. i Trzebski A. (red.), Fizjologia człowieka z elementami fizjologii stosowanej i klinicznej, PZWL, W-wa 2004
2. Traczyk W., Fizjologia człowieka w zarysie, Wyd. VIII, PZWL, W-wa 2016
3. Krzymowski T., Przała J. (red.), Fizjologia zwierząt, Państwowe Wydawnictwo Rolnicze i Leśne, W – wa 2005
4. Dee Unglaub Silverthorn, Fizjologia człowieka – zintegrowane podejście, PZWL 2018
Literatura uzupełniająca
1. Ganong W.F., Fizjologia. Podstawy fizjologii lekarskiej. PZWL, W-wa 2007
2. Bullock J., Boyle J., Wang M.B., Fizjologia, Urban & Partner, Wrocław 2004
3. Konturek S., Fizjologia człowieka Podręcznik dla studentów medycyny , Elsevier Urban & Partner, 2011

Grupy w języku angielskim

Literatura podstawowa
HALL, J.E 2016. Guyton and Hall textbook of medical physiology. 13th edition. Philadelphia, PA, Saunders Elsevier.

Guyton, A.C. & Hall, J.E. 2011. Textbook of medical physiology. 11th edition. Philadelphia, PA, Saunders Elsevier

Literatura uzupełniająca

Scanlon V. C., Sanders T. Essentials of Anatomy and Physiology. 5th edition. F.A. Davis Company, 2006
