

Human physiology - opis przedmiotu

Informacje ogólne	
Nazwa przedmiotu	Human physiology
Kod przedmiotu	16.1-WB-P-HP-S20
Wydział	Wydział Nauk Biologicznych
Kierunek	WNB - oferta ERASMUS
Profil	-
Rodzaj studiów	Program Erasmus
Semestr rozpoczęcia	semestr zimowy 2022/2023

Informacje o przedmiocie	
Semestr	1
Liczba punktów ECTS do zdobycia	6
Typ przedmiotu	obowiązkowy
Język nauczania	angielski
Sylabus opracował	<ul style="list-style-type: none">dr Mateusz Ciepliński

Formy zajęć					
Forma zajęć	Liczba godzin w semestrze (stacjonarne)	Liczba godzin w tygodniu (stacjonarne)	Liczba godzin w semestrze (niestacjonarne)	Liczba godzin w tygodniu (niestacjonarne)	Forma zaliczenia
Laboratorium	30	2	-	-	Zaliczenie na ocenę
Wykład	30	2	-	-	Egzamin

Cel przedmiotu

The aim of the course is to familiarize students and his understanding of the principles of functioning of the human organism as a whole, to acquire knowledge about the nervous system and cardio-respiratory system. The student is familiar with the impact of various efforts on the functioning of individual systems. The student has to understand the importance of aerobic and anaerobic capacity for health and physical fitness. The student must acquire the ability to test human performance, knowledge and understanding of such cardiovascular differences between children and adults, he knows the consequences of lack of exercise and obesity.

Wymagania wstępne

Basic knowledge of anatomy, biochemistry and biomechanics.

Zakres tematyczny

Lectures

- × Change in the physical activity of a human being over the course of evolution and physiological changes resulting from it.
- × Akinesia and its physiological effects.
- × Obesity, causes, consequences, ways of its evaluation and counteracting. Principles of training. Impact of pro-health training on the body.
- × Sexual dimorphism.
- × Aging.
- × The importance of exercise physiology to getting high results in sport
- × Muscle work energy.
- × The nervous system.
- × Thermoregulation during rest and efforts with different characteristics and in different weather conditions.

Laboratory:

- × Nervous system: nerve cells, resting and functional potential, nerve impulses, synapses, central nervous system, peripheral nervous system, sensory integration.
- × Senses: vision, hearing, balance, smell, taste, touch.
- × Circulatory system: heart, blood vessels, blood.
- × Respiratory system: lung ventilation and its components, gas exchange, cellular respiration, breathing regulation, spirometry.

- × The reaction of the circulatory and respiratory system during exercise: the Ruffier test, orthostatic test, master test step, Harvard test.
- × Structure and function of skeletal muscles: skeletal muscle structure, types of muscle fibers, motor unit, recruitment of motor units, types of muscle fibers and sports results, types of muscle contractions, strength of muscle contraction.
- × Energy of muscular contraction - muscle fiber metabolism: energy substrates, sources of ATP resynthesis, energy storage methods.
- × Hormonal control during exercise; endocrine system, hormones, endocrine regulation of metabolism during exercise, regulation of endocrine water and electrolyte balance during exercise.
- × Energy expenditure and fatigue: measurement of energy consumption, energy expenditure at rest and during exercise, fatigue and its causes.
- × Physiology of children and adolescents: growth, development and maturity, physiological response to physical effort, adaptation to exercise, motor skills and sports results.
- × Physiology of the aging period: body height, body weight, body composition
- × Physiological response to physical effort, adaptation to effort, sport of older people.
- × Sex dimorphism: differences in body structure, differences in physiological response to physical exercise, differences in adaptation to physical exercise, differences in sporting abilities.

Metody kształcenia

Lecturers and laboratories, discussions and analysis on the results of experiments, individual students readings of laboratory documentation.

Efekty uczenia się i metody weryfikacji osiągnięcia efektów uczenia się

Opis efektu	Symbole efektów	Metody weryfikacji	Forma zajęć
Bearing in mind the physiological limitations of students, demonstrates activity and creativity in self-determination of priorities and takes actions to implement specific tasks or tasks, is determined to pursue the goal of improving the health of the society through properly organized and conducted physical activity		<ul style="list-style-type: none"> • aktywność w trakcie zajęć • dyskusja 	<ul style="list-style-type: none"> • Wykład • Laboratorium
Aware of the role of physical activity in current times, it can motivate people of all ages to undertake pro-health activities and active participation in physical activity		<ul style="list-style-type: none"> • dyskusja 	<ul style="list-style-type: none"> • Wykład • Laboratorium
Understands the need for professional training and personal development throughout life, is able to inspire and organize the learning process of others, is open to updating and expanding their knowledge of the physiology of physical exertion.		<ul style="list-style-type: none"> • aktywność w trakcie zajęć • dyskusja 	<ul style="list-style-type: none"> • Wykład • Laboratorium
Describes measurement methods in the sciences of physical culture. He can apply in practice advanced methods and techniques for conducting exercise tests. The student (s) has knowledge that allows him to interpret the results of performance tests. Is able to assess the level of the examined capacity, explain to the researcher what is its level and can suggest and implement training methods that will improve the test's efficiency.		<ul style="list-style-type: none"> • sprawdzian z progami punktowymi 	<ul style="list-style-type: none"> • Wykład • Laboratorium
Has an extensive knowledge of the physiological and biological foundations of health sciences and physical culture sciences. It allows him to assess the state of the body during exercise. Student is able to assess and explain the risks resulting from improper dosing of physical effort		<ul style="list-style-type: none"> • aktywność w trakcie zajęć • dyskusja • sprawdzian z progami punktowymi 	<ul style="list-style-type: none"> • Wykład • Laboratorium
Has a detailed knowledge of the structure and functions of the human body in the fields of health and physical education, the student is eager to read scientific articles on the physiology of physical efforts and sports physiology and has the ability to verify and reliable, objective assessment presented in the information		<ul style="list-style-type: none"> • sprawdzian z progami punktowymi 	<ul style="list-style-type: none"> • Wykład • Laboratorium
Knowing the body's response to various forms of physical exertion, it is able to take care of its own safety and those under care in educational, recreational, health and sports activities		<ul style="list-style-type: none"> • aktywność w trakcie zajęć • dyskusja 	<ul style="list-style-type: none"> • Wykład • Laboratorium
Is able to use technically advanced equipment and apparatus used in the assessment of aerobic, anaerobic capacity, muscle strength, body composition and other		<ul style="list-style-type: none"> • aktywność w trakcie zajęć • dyskusja 	<ul style="list-style-type: none"> • Wykład • Laboratorium
Is able to present and explain problems in the field of physical education and health protection, knows the principles applicable to the dosage of physical exercise, understands the importance of volume, intensity of training and the importance of optimal rest for obtaining supercompensation		<ul style="list-style-type: none"> • dyskusja 	<ul style="list-style-type: none"> • Wykład • Laboratorium

Warunki zaliczenia

Laboratory: credit for the grade includes the exercise material, the condition for passing is the student receives at least 3 positive partial marks of five questions asked during the test, to obtain a positive grade from the partial question, the student must demonstrate a minimum of 50% know what was presented to him at classes.

Lectures: the exam for assessment includes lecture and laboratory material, the condition for passing the exam is to obtain a positive grade from the laboratory. The condition for passing the exam is to receive by the student a minimum of 50% of points possible to receive from the test.

Literatura podstawowa

1. W. Larry Kenney, Jack Wilmore, David Costill, Physiology of Sport and Exercise 6th Edition With Web Study Guide. Cloth Pass/Kycd, 2015.
2. Dee Unglaub Silverthorn, Human Physiology: An Integrated Approach, 5th Edition. Pearson Education 2013
3. Jaskólski A - Podstawy fizjologii wysiłku fizycznego z zarysem fizjologii człowieka. AWF Wrocław, 2002.
4. Kozłowski S, Nazar K - Wprowadzenie do fizjologii klinicznej. PZWL, Warszawa, 1995.

Literatura uzupełniająca

Magazines and e-books available at the University Library, digital databases - medical sciences and health sciences <http://www.bu.uz.zgora.pl/>

Uwagi

Zmodyfikowane przez dr Ewa Skorupka (ostatnia modyfikacja: 03-05-2022 12:25)

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