

Faculty of Physical Education and Tourism

Course Unit					Human Physiology		
Bachelor in Physical Education					Code: I/P/6		
Year of study	Semestr	Type	Workload (hours)		Contacts hours	ECTS credits	Language of instruction
2	3,4	annual	150	Lectures	24	6	1. Polish 2. Polish with additional English support for foreign students
				Problem solving	52		
Name (s) of lecturer (s)							
e-mail:							
Prerequisites:							
Before the course unit the learner is expected to: have basic knowledge of the natural sciences (biology, biochemistry) and good knowledge of human anatomy.							
Learning outcomes and competences							
At the end of the course unit the learner is expected to: 1.Know the methods of health assessment, symptoms and causes of diseases of the motor organs. 2.Know the basic measurement methods and techniques for the assessment of physical development and tests for the assessment of the basic components of physical activity and fitness. 3.Understand the conditions of homeostasis, the processes of exercise adaptation and problems related to biological renewal. 4.Understand the course and importance of the influence of forces on the motion system during movement activities. 5.Use correctly the basic measurement methods and techniques to assess the physical structure and development as well as tests to assess the basic components of the physical fitness of children and adolescents 6.Be able to apply the basic principles of health training. 7.Be able to explain, interpret and describe changes in metabolism under the influence of efforts of different intensity and duration, using the measurements of selected biochemical parameters. 8.Be able to apply practically biomechanical and physiological knowledge to safe practice of physical activities. 9.Be able to assess body posture; use specific equipment and tools; assess positive health measures 10.Develop his/her own sports preferences, participate in sports life, inspire and advise participants of physical recreation classes to undertake independent physical activity at various stages of life.							
Course contents (lectures):							

- 1.Nervous system - functions of the central and peripheral nervous system. Transmission of sensory and motor information. Senses and their importance in communication with the external and internal environment.*
- 2.Active motor system - neuromuscular transmission, slow and fast twitch fibers, muscle contractions*
- 3.Physiology of the circulatory system - bioelectric phenomena in the heart and its work cycle.*
- 4.Correlation of the respiratory and circulatory systems.*

Authorisation – course coordinator and course teachers (signatures):

5. Endocrine system - the participation of hormones in regulation of metabolism.
6. Digestive system - digestion and absorption processes. Basic metabolism.
7. The excretory system - functioning in the resting state of the body.
8. Basics of exercise physiology. Physical capacity and its determinants.

Course contents (problem solving):

1. Nervous system: the resting and functional potential of the neuron, excitability, excitation and inhibition.
2. Muscular system: physiology of the striated muscle cell, bioelectric phenomena, types of contractions, contraction force versus stimulus force, muscle fatigue.
3. Control of motor functions.
4. Autonomous nervous system: sympathetic and parasympathetic. Control of the internal organs work.
5. The circulatory system: observation of the heart cycle, the stimulus-conduction system, stroke and minute volume, circulation regulation. Performing an ECG recording, measuring heart rate and blood pressure, measurements at rest and after exercise.
6. Blood vessels: veins, arteries, capillaries. Organ (coronary) circulation.
7. Nervous control of the circulatory system. The baroreceptor reflex. Influence of physical effort on the work of the heart and blood pressure.
8. Blood composition. Functions of individual morphotic elements. Blood Groups. Coagulation process.
9. Respiratory system: gas exchange in the lungs, regulation of breathing. Lung capacity measurements.
10. Regulation of breathing. Breath control centers.
11. Endocrine system: influence of growth hormone on the organism, regulation of glucose level in the organism, hormonal regulation of calcium ions, sex hormones and changes in the organism.
12. Basic metabolism: determination of resting metabolism.
13. Physical effort and changes in the use of energy substrates depending on the intensity of exercise
14. Simple functional tests to assess physical efficiency

Teaching and learning methods:

Knowledge assimilation method, lecturing method. discussion

Methods based on students' practical activities of direct and indirect nature.

Assessment methods:

1. Continuous evaluation
 - Practical Work - measurement
 - Intermediate Written Test
2. Evaluation by an exam:
 - Final Written Exam

Recommended reading

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| 1. | 1. Górski J.: Fizjologia wysiłku i treningu sportowego. PZWL Warszawa 2011 |
| 2. | 2. Górski J.: Fizjologiczne podstawy wysiłku fizycznego, PZWL Warszawa 2010 |
| 3. | 3. Kenney W.L., Wilmore J.H., Costill D. L., Physiology of Sport and Exercise |
| 4. | 4. Traczyk W. Z.: Fizjologia człowieka w zarysie, PZWL Warszawa 2016 |

Autoryzacja – koordynator przedmiotu wraz z osobami prowadzącymi (podpisy):