

Faculty for Sport and Physical Education / PHYSICAL EDUCATION / Fundamentals of Physiology and Phys. of Sports I

Course:	Fundamentals of Physiology and Phys. of Sports I			
Course ID	Course status	Semester	ECTS credits	Lessons (Lessons+Exercises+Laboratory)
8170	Mandatory	3	4	2+1+0
Programs	PHYSICAL EDUCATION			
Prerequisites	There are no prerequisites required for signing up for this course			
Aims	The aim of the course is to acquaint students with the physiology of human body			
Learning outcomes	Upon the completion of this course, the student will show the ability to: 1. Master the basic principles of cell physiology and its functions in human beings; 2. Explain the structure and function of applied physiology of sport; 3. Use physiological aspect of locomotor system in creating the teaching and training process; 4. Analyse the adaptation of cardiorespiratory and urogenital system to the physical exertion and sports training; 5. Value morphological and functional characteristics of oxygen consumption.			
Lecturer / Teaching assistant	Prof. dr Miroslav Kezunović ; dr sci med Zoran Terzić assistant.			
Methodology	Lectures, exercises, exams, consultations.			
Plan and program of work				
Preparing week	Preparation and registration of the semester			
I week lectures	Introduction to human physiology. The cell and its functions. Homeostasis, body fluids.			
I week exercises	Introduction to human physiology. The cell and its functions. Homeostasis, body fluids.			
II week lectures	Structure and function of a cell membrane. Membrane and action potential.			
II week exercises	Structure and function of a cell membrane. Membrane and action potential.			
III week lectures	Physiology of the locomotor system. Muscular tissue. Muscle contraction and hypertrophy.			
III week exercises	Physiology of the locomotor system. Muscular tissue. Muscle contraction and hypertrophy.			
IV week lectures	The impact of sports training on muscles and muscular functioning. Fatigue.			
IV week exercises	The impact of sports training on muscles and muscular functioning. Fatigue.			
V week lectures	Physiological aspect of the bone tissue: types, composition and role. The impact of sport on the bone tissue.			
V week exercises	Physiological aspect of the bone tissue: types, composition and role. The impact of sport on the bone tissue.			
VI week lectures	The composition and role of blood. Blood groups, immunity. Coagulation. Circulation			
VI week exercises	The composition and role of blood. Blood groups, immunity. Coagulation. Circulation			
VII week lectures	Mid-term exam			
VII week exercises				
VIII week lectures	Physiological structure of the cardiac muscle. Regulation of the heart's function. Principles of hemodynamics.			
VIII week exercises	Physiological structure of the cardiac muscle. Regulation of the heart's function. Principles of hemodynamics.			
IX week lectures	Physiological causes of shock. Adaptation of the cardiovascular system to the exertion and exercising.			
IX week exercises	Physiological causes of shock. Adaptation of the cardiovascular system to the exertion and exercising.			
X week lectures	respiratory system. Structure and function. Oxygen debt. Respiratory membrane.			
X week exercises	respiratory system. Structure and function. Oxygen debt. Respiratory membrane.			
XI week lectures	The mechanics of breathing. Lung volumes and capacities. Breathing during muscular activity.			
XI week exercises	The mechanics of breathing. Lung volumes and capacities. Breathing during muscular activity.			
XII week lectures	Adaptation of the respiratory system to exertion. O ₂ consumption, Aerobic metabolism.			
XII week exercises	Adaptation of the respiratory system to exertion. O ₂ consumption, Aerobic metabolism.			

XIII week lectures	Urogenital system. Morphological and functional characteristics of kidneys and nephrons					
XIII week exercises	Urogenital system. Morphological and functional characteristics of kidneys and nephrons					
XIV week lectures	Second exam					
XIV week exercises						
XV week lectures	Final exam					
XV week exercises						
Student workload	Weekly: 4 credits x 40/30 = 5 hours 20 min. Structure of the load: 2 hours of lectures 1 hour of exercises 2 hours 20 min. of independent work including consultations During the semester: Lectures and final exam: 5.20 hours x 16 = 85 hours Necessary preparations before the start of the semester 2 x (5 hours 20 min.) = 10 hours 40 min. Total hours for the course: 4x30 = 120 hours Additional work for the course from 0 to 24 hours and 20 min. Structure of the load: 85 hours (teaching) + 10 hours 40 min. (preparation) + 24 hours 20 min. (additional work)					
Per week			Per semester			
4 credits x 40/30=5 hours and 20 minuts 2 sat(a) theoretical classes 0 sat(a) practical classes 1 excercises 2 hour(s) i 20 minuts of independent work, including consultations			Classes and final exam: 5 hour(s) i 20 minuts x 16 =85 hour(s) i 20 minuts Necessary preparation before the beginning of the semester (administration, registration, certification): 5 hour(s) i 20 minuts x 2 =10 hour(s) i 40 minuts Total workload for the subject: 4 x 30=120 hour(s) Additional work for exam preparation in the preparing exam period, including taking the remedial exam from 0 to 30 hours (remaining time from the first two items to the total load for the item) 24 hour(s) i 0 minuts Workload structure: 85 hour(s) i 20 minuts (cources), 10 hour(s) i 40 minuts (preparation), 24 hour(s) i 0 minuts (additional work)			
Student obligations			Students are obliged to attend theoretical and practical classes, and do mid-term exams.			
Consultations			According to the previously set terms.			
Literature			Gayton; Medicinska fiziologija ; M.Kezunović i sar. Osnovi fiziologije i fiziologija sporta; Drecun M. i sar. Praktikum iz fiziologije			
Examination methods			Attendance 6 points - Participation 4 points - 2 exams 20 points each - Final exam: 50 points The passing grade is achieved if the student cumulatively earns 51 points and regularly attends the classes.			
Special remarks			The methodological units for practical classes correspond to the methodological units for theoretical classes.			
Comment			No			
Grade:	F	E	D	C	B	A
Number of points	less than 50 points	greater than or equal to 50 points and less than 60 points	greater than or equal to 60 points and less than 70 points	greater than or equal to 70 points and less than 80 points	greater than or equal to 80 points and less than 90 points	greater than or equal to 90 points