


University of Niš Faculty of Medicine	Study program: INTEGRATED ACADEMIC STUDIES OF MEDICINE <i>ACCREDITATION 2018</i>	
Course: Pathophysiology		
Course head: prof. dr Dijana Stojanović		
Course status:	Required	
Semester: V, VI	Study year: III	
ECTS: 12	Course code: M-III-17	
Course purpose:		
<p>Upon completion of the course, students should be well acquainted with the notions of etiology, pathogenesis, wellbeing and disease; most important causes and mechanisms of damage to the cell and tissues (mechanisms of cell adaptation, aging, and apoptosis), mechanisms of local and systemic response to tissue damage; general pathophysiologic mechanisms of local circulation disorders, inflammation, infection, shock, fever, and mechanisms of action of physical, chemical, and biological factors; immunobiological characteristics and specific interactions of an organism and etiological factors in pregnancy and in the elderly; causes and mechanisms of malignant transformation and carcinogenesis, with changes in human body (paraneoplastic syndrome); etiopathogenesis of disorders of different organ systems: cardiovascular, respiratory, digestive, urogenital, endocrine, nervous, hematopoietic, immune, and skeletal; methods of functional diagnosis, lab tests, and analyses for an etiopathogenetically adjusted treatment; students should be adequately prepared for the attendance of courses in Pharmacology, Internal Medicine, Infectious Diseases, Epidemiology, Clinical Biochemistry, Dermatovenerology, Pediatrics, Gynecology with Obstetrics, Surgery, Oncology, and other clinical disciplines.</p>		
Course outcome: (knowledge, skills, attitudes)		
<p>Upon completion of the course, students should (be qualified to): know the causes and mechanisms of occurrence of diseases from the cellular level to the level of organism as a whole; to associate basic clinical manifestations of most important functional and organic disorders with the causes and mechanisms of their occurrence; to understand the place and significance of laboratory and functional tests and assays regarding the diagnosis and etiopathogenetically-adjusted treatment of various diseases; to get a deep insight and understand modern approaches in prevention, early detection, diagnosis, differential diagnosis, and treatment of diseases.</p>		
Nr. of classes of active teaching: 165		
Lectures: 75	Study research work: 90	
Course content		
<p><i>Theoretical teaching</i></p> <p>Subject and tasks of pathophysiology. Etiology, pathogenesis, disease. Consciousness disorders and terminal conditions. Homeostasis. General reaction of a cell to injury. Mechanisms of recovery of human organism. Pathophysiology of aging. Genetic factors. Physical etiologic factors. Exogenous hyperthermia and burns. Chemical factors. Biological factors. Non-specific protection of organism. Fever. Etiology and pathogenesis of inflammation. Basic properties of immune system. Etiopathogenesis of hyperlipoproteinemia, obesity, starvation. Etiopathogenesis of atherosclerosis. Protein metabolism disorders. Carbohydrate metabolism disorders (diabetes mellitus). Pathogenic aspects of hyper- and hypovitaminoses. Pathogenic aspects of the disturbed metabolism of oligoelements. Etiopathogenesis of hypoxia. Pathophysiology of fatigue. Pathophysiology of pregnancy. Etiopathogenesis of the malignancy (functional characteristics of malignant cells, paraneoplastic syndrome). Disorders of red blood cell line. Anemia syndrome. Disorders of the white blood cell line. Leukocytoses and leukoses. Disorders of the liver function. Symptoms of digestive tract diseases. Disorders of swallowing and saliva secretion. Disorders of the motility and secretion of the stomach and guts. Ulcer disease. Acute bowel obstruction. Disorders of the exocrine pancreatic function. Etiopathogenesis of urinary tract disorders. Pathophysiology of the respiratory system. Endocrine function disorders. Parathyroid disorders, disbalance of Ca and P. Damage to the central and peripheral motor neuron. CNS circulation disorders. Blood-brain barrier and CSF disorders. Etiopathogenesis of hypotension and hypertension. Locomotor system disorders.</p> <p><i>Practical teaching</i></p> <p>Research methodology (experiment, observation, functional diagnosis). Biological characteristics of</p>		

experimental animals. Preparation of experimental animals. Methods of experimental work – observation – experiment – functional diagnosis. Definition, symptoms and signs of disease. Effects of asphyxia on organism. Burns. Hypothermia. Local circulation disorders. Iatrogenic damage/injury. Pathophysiological aspects of addictions.

Shock – seminar. Infection (mechanisms). Etiopathogenesis of fever. Inflammation – seminar. Acid-base status disorders – seminar. Osmolarity disorders. Cellular and humoral immunity disorders – seminar. Homeostasis disorders – seminar. Etiopathogenesis of obesity. Disorders of the metabolism of fats.

Etiopathogenesis of atherosclerosis. Protein metabolism disorders. Carbohydrate metabolism disorders – seminar. Analysis of the biliary retention syndrome. Etiopathogenesis of fever. Inflammation – seminar. Disorders of the acid-base status – seminar. Osmolarity disorders. Disorders of the cellular and humoral immunity – seminar.

Homeostasis disorders – seminar. Etiopathogenesis of obesity. Disorders of the metabolism of fats.

Etiopathogenesis of atherosclerosis. Disorders of the metabolism of proteins. Disorders of the metabolism of carbohydrates – seminar. Analysis of the syndrome of biliary retention. Etiopathogenesis of stomach and bowel motility disorders. Components of the urinary syndrome – seminar. Pathogenetic aspects of the development of white blood cell line. Pathophysiological aspects of acute and chronic leukoses.

Physiological and pathological leukocytosis. Recognition of pathological processes in the hematopoietic tissue – microscopic practice. Basic symptoms of the diseases of respiratory system. Functional studies of the respiratory system. Demonstration of endocrine disorders. Functional studies of endocrine disorders. Characteristics of normal and pathological evoked potentials. Biochemical and cytological studies of the CSF. ECG recording. Normal ECG findings. Functional examination of the CV system. Hypertension and hypotension. Pathogenesis of the atherosclerotic process – seminar. Etiopathogenesis of edema.

Recommended literature:

1. Radić S. Opšta patološka fiziologija. Niš: Medicinski fakultet Niš; 2012.
2. Kulauzov M, ur. Specijalna patološka fiziologija. Novi Sad: Ortomediks; 2011
3. Kulauzov M, ur. Opšta patološka fiziologija. Novi Sad: Ortomediks; 2015
4. Živačević Simonović S. Opšta patološka fiziologija, Medicinski fakultet u Kragujevcu, Kragujevac 2002.
5. Borota R, Stošić Z, ur: Upotreba funkcijskih ispitivanja u dijagnozi bolesti. Novi Sad: Medicinski fakultet; 2015.
6. Autorizovana skripta. Praktikum iz patofiziologije. Medicinski fakultet, Niš 2006.

Teaching methods:

- Interactive theoretical and practical teaching
- Consultations
- Preexam practice
- Problem-oriented seminars

Required previously passed exams:

- Physiology
- Biochemistry

Grade (max. 100 points)

Pre-exam obligations

Activity at classes

- Lectures: 0 – 2 points
- Practice: 0 – 6 points
- Seminar papers: 0 – 2 points
- Tests: 0 – 20 points
- Practical exam: 0 – 20 points

Final exam

- Oral exam: 0 – 50 points