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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  |  |
| **GENERAL INFORMATION** |
| Study program  | **Medicine** |
| Study Module (if applicable) |  |
| Course title | Pathophysiology |
| Level of study | ☐Bachelor x Master’s ☐ Doctoral |
| Type of course | x Obligatory ☐ Elective |
| Semester  |  x Autumn xSpring |
| Year of study  | III |
| Number of ECTS allocated | 12 |
| Name of lecturer/lecturers |

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| --- | --- |
| Radić B. Stojan | redovni profesor |
| Radenković B. Sonja | redovni profesor |
| Bojanić V. Vladmila | redovni profesor |
| Milojković M. Maja | vanredni profesor |
| Đinđić J. Boris | vanredni profesor |
| Dunjić S. Olivera | docent |
| Ljubisavljević M. Srđan | asistent |
| Stojanović R. Dijana | asistent |
| Milenković M. Jelena | saradnik u nastavi |

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| Teaching mode |  xLectures ☐Group tutorials ☐ Individual tutorials xLaboratory work ☐ Project work ☐ Seminar ☐Distance learning ☐ Blended learning ☐ Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| 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 etological 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. |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| *Theoretical teaching*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.*Practical teaching*Biological characteristics of 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. |
| **LANGUAGE OF INSTRUCTION** |
| xSerbian (complete course) x English (complete course) ☐ Other \_\_\_\_\_\_\_\_\_\_\_\_\_ (complete course)☐Serbian with English mentoring ☐Serbian with other mentoring \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **ASSESSMENT METHODS AND CRITERIA** |
| **Pre exam duties** | **Points** | **Final exam** | **points** |
| **Activity during lectures** | **5** | **Written examination** | **20** |
| **Practical teaching** | **10** | **Oral examination** | **40** |
| **Seminars** | **5** | **OVERALL SUM** | **100** |
| **Practical exam** | **20** |  |  |
| **\*Final examination mark is formed in accordance with the Institutional documents** |