

Study program: Integrated academic studies in dentistry			
Type and level of the study program: integrated academic studies			
Course title: Physiopathology (DII-PHYSP)			
Teacher: Mirjana J. Đerić, Gorana P. Mitić, Biljana A. Vučković, Branislava P. Ilinčić, Radmila R. Žeravica			
Course status: compulsory			
ECTS Credits: 6			
Condition: Biochemistry; Physiology; General and oral pathology (Exam)			
Course aim Enabling students to understand the etiology and pathogenesis of diseases and to understand alterations of specific organ and organ systems functions.			
Expected outcome of the course: Knowledge Acquiring knowledge about pathophysiological alterations, etiological factors as well as developing pathogenetic mechanisms in developing different diseases. Exploring general principles in organ function and organ system disorders. Skills Student should be introduced with principles for performing and the interpretation of functional examinations of biochemical, haematological, immunometric and other analysis and tests that are used in diagnostics of different pathophysiological alterations.			
Course description			
Theoretical education 1. Etiology of the diseases, external and internal etiological factors. 2. Primary and secondary etiologic factors in diseases. 3. Mechanism of inflammatory reaction and the role of mediators. 4. General changes in the host during inflammation. 5. Disorders of protein metabolism – part 1. 6. Disorders of protein metabolism – part 2. 7. Disorders of carbohydrate metabolism – part 1. 8. Disorders of carbohydrate metabolism – part 2. 9. Disorders of lipid metabolism and atherosclerosis. 10. Disorders of metabolism of water and electrolytes – part 1. 11. Disorders of metabolism of water and electrolytes – part 2. 12. Disturbances of energy balance – malnutrition and obesity. 13. Disorders of calcium and phosphorus metabolism. 14. Parathyroid gland disorders. 15. Disorders of pituitary and gonad axis. General adaptation syndrome. 16. Disorders of the adrenal axis. 17. Disorders of thyroid gland. 18. General and local effects of heat on the human body. 19. Effects of atmospheric pressure on the human body. 20. General and local effects of cold on the human body. 21. Effect of mechanical factors, electricity and electromagnetic radiation on the human body. 22. Biological effects of ionizing radiation on the human body. 23. Effect of chemical factors on the human body. 24. Disorders of metabolism of vitamins and enzymes. 25. Disorders of white blood cells – part 1. 26. Disorders of white blood cells – part 2. 27. Disorders of Hemostasis – part 1. 28. Disorders of Hemostasis – part 2. 29. Disorders of red blood cells – part 1. 30. Disorders of red blood cells – part 2. 31. Pathophysiology of the respiratory system – part 1. 32. Pathophysiology of the respiratory system – part 2. 33. Pathophysiology of the respiratory system – part 3. 34. Pathophysiology of nervous system. 35. Pathophysiology of the digestive tract – part 1. 36. Pathophysiology of the digestive tract – part 2. 37. Pathophysiology of the cardiovascular system – part 1. 38. Pathophysiology of the cardiovascular system – part 2. 39. Pathophysiology of the cardiovascular system – part 3. 40. Pathophysiology of the cardiovascular system – part 4. 41. Pathophysiology of the digestive tract – part 1. 42. Pathophysiology of the digestive tract – part 2. 43. Pathophysiological changes in liver diseases – part 1. 44. Pathophysiological changes in liver diseases – part 2. 45. Etiology and pathogenesis of neoplasia. Tumor-host interactions. 46. Pathophysiology of nervous system-pain, headache, neural transmission disorders. 47. Pathophysiology of the uropoietic system – part 1. 48. Pathophysiology of the uropoietic system – part 2. 49. Pathophysiology of the uropoietic system – part 3. 50. Pathophysiology of the uropoietic system – part 4. 51. Mechanisms of autoimmune diseases – part 1. 52. Mechanisms of autoimmune diseases – part 2. 53. Acid/base balance disorders – part 1. 54. Acid/base balance disorders – part 2. 55. Disorders of bone metabolism. 56. Pathophysiology of musculoskeletal disorders. 57. Pathophysiology of dental diseases – part 1. 58. Pathophysiology of dental diseases – part 2. 59. Pathophysiology of dental diseases – part 3. 60. Pathophysiology of dental diseases – part 4.			
Practical education – methodical units: 1. The basic functional testing of inflammation. 2. The basic functional testing metabolic protein. 3. Functional testing of the basic disorder of carbohydrate metabolism. 4. Functional testing of primary disorders of lipid metabolism. 5. Functional testing of the basic disorders of calcium metabolism and bone phosphorus. 6. Functional testing of the thyroid gland. 7. The basic functional testing of white cell line. 8. Functional testing of a hemorrhagic syndrome. 9. Functional testing of a hemostasis system in thrombosis. 10. Functional testing of red cell line. 11. Functional testing of the cardiovascular system. 12. The basic functional testing of the liver. 13. The basic functional test. Digestive tract (stomach and pancreas). 14. The basic functional testing of the respiratory system. 15. The basic functional testing of uropoietic system. Note: Each practical exercise lasts for 2 classes.			
Literature <i>Compulsory</i> 1. Porth C. Essentials of Pathophysiology: Concepts of Altered States. Lippincott Williams and Wilkins; 2014. <i>Additional</i> 1. Huether SE, Mc Cance KL. Understanding Pathophysiology, 6 th ed. Elsevier Science; 2016.			
Number of active classes			Other:
Lectures: 60	Practice: 30	Other types of teaching: Research related activities:	
Teaching methods Interactive theoretical and practical education, Consultation, Seminars.			
Student activity assessment (maximally 100 points)			
Pre-exam activities	points	Final exam	points
Lectures	15	Written	15
Practices	15	Oral	45
Colloquium	10	
Essay			