Subject: **Pathological physiology 1**	Subject type:	**Compulsory**
Study year: **3**	Content:	**2/3 winter semester**
Study program: **General Medicine**		

Aim of the course

Pathophysiology is the essential part of pre-clinical medical education. Pathological Physiology 1 provides a systematic review of the scientific basis for the emergence and development of the disease, symptoms (nosology), contemporary overview of the causes and risk factors (etiology) of human diseases, mechanisms of progression and development of the clinical expressions (pathogenesis), including molecular and cellular processes and changes during different pathophysiological processes and diseases. The course also includes a systematic overview of the pathophysiology of the hematologic and urinary systems.
The course is included in the winter semester of the 3rd year of study. The prerequisite subject is Medical Physiology 2.
Pathophysiology is an integrative biomedical subject that helps to understand the mechanisms of diseases. It is an important part of undergraduate medical education and a necessary prerequisite for the study of clinical subjects.

Education: lectures/seminars
Assessment: credit (2 written tests)

Syllabus

Week 1
Etiology I. Introduction to Pathological Physiology; Cellular pathophysiology; General nosology; General etiology

Week 2
Etiology II: Genetic diseases; Monogenic diseases; Chromosomal diseases; Polygenic diseases; Non-mendelian heredity, Epigenetics

Week 3
Etiology III: Disorders of nutrition; Obesity, Metabolic syndrome; Malnutrition qualitative & quantitative; Dietology; Vitamins, Trace elements

Week 4
Etiology IV: Disorders of internal homeostasis, Fluid, Electrolyte, Acid-base homeostasis; Edemas

Week 5
Pathogenesis I: Acute and chronic inflammation; Fever

Week 6
Pathogenesis II: Neoplasms – biology; genetics, metastasing; Hypoxia; Shock

Week 7
Review of knowledge; Semester work instructions

Week 8
Pathogenesis III: Immunopathology, Hypersensitivity, Autoimmunity, Immunodeficiency; Pain

Week 9
Pathogenesis IV: Immunopathology (hypersensitivity, immunodeficiency)

Week 10
Hematology I: Basic manifestations of hematologic disorders, hematological parameters; Pathophysiology of leukocytes, Leukemias, Nonmalignant disorders of leukocytes

Week 11
Hematology II: Anemia; Pathophysiology of hemostasis, Disorders of thrombocytes and hemocoagulation

Week 12
Renal and urinary tract. Glomerulonephritis, tubular disorders, acute kidney injury, chronic kidney disease

Week 13
Aging
Review of knowledge

Week 14
Discussion of selected topics, knowledge assessment, evaluation of semester, credits