Subject: **CLINICAL BIOCHEMISTRY**	Subject type:	**compulsory**
Study year: **5**	Content:	**2/2 winter semester**
Study program: **General Medicine**		*ULCHBKB-CB-GM/18*

Aim of the course

Clinical biochemistry in the 5th year of general medicine study is an extension of the Medical biochemistry from 2nd year. The subject is organized in form of lectures and seminars performed by lecturers with experience in clinical biochemistry and it offers information on biochemical laboratory tests used in clinical practice for screening, diagnostics and monitoring of therapy of the most frequent organ disorders.
The subject is aimed to explain principal pathobiochemical mechanisms of selected diseases, teaching students to understand the relationships between metabolism and laboratory test results, make students familiar with routinely ordered biochemical tests and to demonstrate on some typical case reports or tests results of model patients how to select laboratory tests and to follow typical diagnostic algorithms. The correct and targeted indication of laboratory tests concerning to the expected diagnosis and proper interpretation of test results is an important part of a physician's daily work.

Education: block (lectures/practical)
Assessment: graduated (written test)

Syllabus

Clinical biochemistry as a part of laboratory medicine. Biological material, sampling and manipulation with samples in the preanalytical phase. Preanalytical factors influencing the laboratory results, reference intervals, target values. Interpretation of results – the biological variation, sensitivity, specificity, predictive values of the test. Water and mineral homeostasis. Regulation of osmolality. Hyper- and dehydration. Hyponatremia, hypernatremia. Hyper- and hypokalemia. Acid-base balance disorders. Metabolic and respiratory acidosis and alkalosis. Liver function tests. Assessment of hepatic functions – hepatocellular integrity, cholestasis, synthetic function. Jaundice – differential diagnosis. Renal function. Biochemical tests for assessment of glomerular and tubular function. Proteinuria. Diabetes mellitus – biochemical background. Biochemical tests for diagnosis and monitoring of diabetes mellitus. Diabetic emergencies. Hypoglycaemia. Cardiac markers. Dyslipidaemias, risk factors of atherogenesis. Calcium and phosphate metabolism disorders, bone markers. Markers of inflammation and sepsis. Biochemical diagnostics of selected endocrine disorders. Ectopic hormone secretion.