SYLLABUS

Subject:	**Clinical Biochemistry**		
Study	*Dental Medicine*	**Study Period:**	*8th semester*
Evaluation:	*exam*	**Subject Type:**	*Elective course*
Content:	*1 h. lectures and 1 h. practical exercises / week*		*Total 28 hours*

Department: **Department of Medical and Clinical Biochemistry UPJŠ FM**

Week	***Lectures – OTW*** *https://portal.lf.upjs.sk/index-en.php*	***Seminars – OTW***
1.	**Introduction to clinical biochemistry** - Clinical biochemistry as a part of laboratory medicine - Biological material, sampling and manipulation in preanalytical phase **Diabetes mellitus** - DM – diagnostic criteria and monitoring of disease - insulin resistance, metabolic syndrome - Hypoglycaemia	**Sampling and interpretation of laboratory tests** - Organizing of clinical laboratory - visit of medical laboratory - Venous blood sampling, preanalytical errors - Interpretation of results - reference intervals, biological variation, sensitivity, specificity
2.		
3.	**Kidney function tests** - Hormonal regulation of urine production and composition - Urine analysis - proteinuria and albuminuria - Glomerular filtration rate - creatinine clearance, estimated GFR - Acute kidney injury, chronic kidney disease **Basic laboratory parameters in emergency:** - Sodium, potassium, acid base disorders, laboratory signs in volume changes	**Clinical case studies** - Hyponatraemia, hypernatraemia - Hyper-and hypokalaemia **Interpretation of laboratory results in patients** - Urine analysis - Acute kidney injury - Chronic kidney disease
4.		
5.	**Biochemical test in liver disease** - Tests for integrity of hepatocytes and for cholestasis - Tests for assessing of synthetic liver function **Plasmatic proteins:** - Electrophoresis of proteins	**Interpretation of laboratory results in patients** - Jaundice - differential diagnosis - Liver failure acute and chronic **Diabetes mellitus** - Controlled and uncontrolled DM - Diabetic emergencies
6.		
7.	**Complete blood count** - RBC, anaemias, differential diagnosis - WBC - PLT	**Interpretation of laboratory results in patients** - Sideropenic anaemia - Leucocytosis

8.		
9.	**Coagulation tests** - Principle of coagulation test and their clinical significance - Basic test used in diagnosis clotting disorders - Preoperative assessment of haemostasis - Monitoring of anticoagulation therapy	**Interpretation of laboratory results in patients** - Unexplained bleeding - Bleeding disorders - Preoperative testing
10.		
11.	**Inflammatory markers** - Inflammation, sepsis, multiorgan failure syndrome - Biochemical markers of inflammation - Diagnostics and monitoring of sepsis **Cardiac markers** - Biochemical markers of myocardial necrosis - Diagnosis of heart failure - natriuretic peptides - Biochemical risk factors of cardiovascular diseases	**Interpretation of laboratory results in patients** - Localized and systemic inflammation - Rhabdomyolysis and SIRS, muscle compartment syndrome - Acute myocardial infarction - Hyperlipidaemia
12.		
13.	**Biochemical markers of bone metabolism** - Regulation Ca-P metabolism - Disorders of Ca, P - Biochemical bone markers	**CREDIT TEST**
14.		