



**INSTITUTIA PUBLICĂ
UNIVERSITATEA DE STAT DE MEDICINĂ SI FARMACIE
"NICOLAE TESTEMITANU" DIN REPUBLICA MOLDOVA**

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Approved
at the Chair of biochemistry and clinical biochemistry
meeting of 29.08.2019, minute no.1
Chief of the Chair, MD, PhD, assoc. prof.
_____ Olga Tagadiuc

**SYLLABUS
in Biochemistry for 2nd year students of Stomatology Faculty,
autumn semester, academic year 2019-2020**

Autumn semester (3), 2nd year			
N	Data	Theoretical classes	Practical classes
1	03-07.09.	Metabolism of simple proteins. Dynamic state of protein metabolism. Nitrogen balance. Digestion and absorption of proteins. Putrefaction of amino acids in the intestine. Decarboxylation of amino acids in tissues. Common amino acid exchange routes: transamination and deamination.	Metabolism of simple proteins. Nitrogen balance. Digestion and absorption of proteins. Putrefaction of amino acids in the intestine. Decarboxylation of amino acids in tissues. Determination of acidity of gastric juice.
2	09-13.09		Common ways of amino acids catabolism: deamination, transamination. Mechanisms for neutralizing ammonia. The fate of carbon skeletons of amino acids. Decarboxylation of amino acids in tissues. Urea synthesis. Determination of urea in urine.
3	16-20.09	The final products of protein metabolism. Neutralization of ammonia. Urea synthesis. Peculiarities of some amino acids metabolism. Metabolism of chromoproteins.	Peculiarities of some amino acids metabolism. Biosynthesis of non-essential amino acids. Regulation and pathology of simple proteins metabolism. Determination of creatinine and homogentisic acid in urine.
4	23-27.09		Metabolism of chromoproteins. Disorders associated with chromoproteins metabolism. Interrelation of protein, carbohydrate and lipid metabolism. Determination of bilirubin in serum.



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5	30.08-04.10	Metabolism of purine and pyrimidine nucleotides. Biosynthesis of DNA.	Concluding test on the topic: "Metabolism of simple proteins and chromoproteins"
6	07-11.10		Metabolism of purine and pyrimidine nucleotides. Determination of uric acid in the urine.
7	14-18.10	Biosynthesis of RNA. Biochemical bases of translation. Synthesis and post-translational modifications of collagen. Amelogenesis and dentinogenesis imperfecta.	DNA and RNA biosynthesis. Determination of DNA and RNA.
8	21-25.10		Biochemical bases of translation. Peculiarities of biosynthesis and post-translational modifications of collagen. Amelogenesis and dentinogenesis imperfecta. Determination of total protein.
9	28.10-01.11	Hormones: biological role, classification, mechanism of action. Neurohormonal regulation of metabolism. Hypothalamic-pituitary hormones. Autocrine and paracrine hormones (growth factors, cytokines and chemokines)	Concluding test on the topic: "Metabolism of nucleoproteins. Biosynthesis of nucleic acids and proteins"
10	04-08.11		Hormones, biological role, classification, mechanism of action. Hormonal regulation of metabolism. Hypothalamic-pituitary hormones.
11	11-15.11	Hormones of the thyroid gland, pancreas and adrenal medulla. Hormones that regulate the metabolism of calcium and phosphate (parathyroid hormone, calcitonin and calcitriol).	Hormones of the thyroid gland, pancreas and adrenal medulla. Determination of adrenaline.
12	18-22.11		Adrenal cortical and sexual steroid hormones. Hormones that regulate the metabolism of calcium and phosphate (parathyroid hormone, calcitonin and calcitriol). Autocrine and paracrine hormones (growth factors, cytokines and chemokines, eicosanoids). Determination of calcium in blood serum. Determination of 17-keto-steroids in urine.
13	25-29.11	Blood – general composition. Composition of blood plasma. Proteins of blood plasma, enzymes, non-protein nitrogen-containing substances, mineral compounds. Biochemical mechanisms of oxygen and carbon dioxide transport, acid-base balance and maintenance of the liquid state of blood.	Biochemistry of blood. Chemical composition of plasma. Proteins of blood plasma, enzymes, non-protein nitrogen-containing substances, mineral compounds. Blood clotting: factors, mechanisms. Anti-coagulant and fibrinolytic systems. Determination of the concentration of total protein, albumin in serum.



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14	02-06.12		Respiratory function of blood. Acid-base balance. Determination of hemoglobin.
15	09-13.12	Biochemistry of connective tissue and bone. Biochemistry of dental tissues.	Biochemistry of connective and bone tissue. Biochemistry of dental tissues and periodontium.
16	16-20.12		Concluding test on the topic: "Hormones. Blood. Biochemistry of dental tissues»
17	23-27.01	Biochemistry of parodontium, plaque, tartar and saliva.	Exam admission

NOTE: Responsible for the theoretical classes – MD, PhD, as. prof. Olga Tagadiuc;
Duration of theoretical class - 2 hours, practical class - 2 hours.