



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

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APPROVED
at the Chair meeting of 24.08.2020, minute no.1,
Head of the Biochemistry and Clinical Biochemistry Chair,
Ph.D., assoc. prof., Silvia Stratulat _____

SYLLABUS
in Biochemistry for 2nd year Spring Batch students of Faculty of Medicine,
autumn semester, academic year 2020-2021

Autumn semester (4) – second year

N	Data	Theoretical classes	Practical lessons
1	01-04.09.20	Metabolism of simple proteins. The dynamic state of proteins. The nitrogen balance. Digestion and absorption of proteins.	Metabolism of simple proteins. Nitrogen balance. Digestion and absorption of proteins. Putrefaction of amino acids in the intestine. Determination of acidity of gastric juice.
2	07-11.09.20	General ways of amino acid metabolism: deamination, transamination. Decarboxylation of the amino acids.	Common pathways of amino acids catabolism: deamination, transamination. Mechanisms of ammonia neutralization. The fate of carbon skeletons of amino acids. Decarboxylation of amino acids in tissues. Urea assay in urine.
3	14-18.09.20	The final products of nitrogen metabolism. Ammonia detoxification. Ureagenesis.	Peculiarities of some amino acids metabolism. Biosynthesis of non-essential amino acids. Regulation and pathology of simple proteins metabolism. Creatinine and homogentisic acid assay in urine.
4	21-25.09.20	Peculiarities of the metabolism of some amino acids.	Metabolism of chromoproteins. Disorders associated with the metabolism of chromoproteins. Interrelation of protein, carbohydrate and lipid metabolism. Determination of bilirubin in serum.
5	28.09-02.10.20	Metabolism of chromoproteins.	Concluding test on chapter "Metabolism of simple proteins and chromoproteins"
6	05-09.10.20	Metabolism of purine nucleotides. Metabolism of pyrimidine nucleotides.	Metabolism of purine and pyrimidine nucleotides. Determination of uric acid in urine.
7	12-16.10.20	Biochemical bases of DNA biosynthesis - mechanism, regulation.	Biochemical bases of DNA and RNA biosynthesis. DNA and RNA assay.
8	19-23.10.20	Biochemical bases of RNA biosynthesis - mechanism,	Biochemical bases of translation. Peculiarities of collagen



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		regulation.	biosynthesis and post-translational modifications. Total protein assay.
9	26-30.10.20	Biochemical bases of translation. Post-translational changes of proteins. General notions about folding.	Concluding test on chapter "Metabolism of nucleoproteins Biosynthesis of nucleic acids and proteins"
10	02-06.11.20	Hormones, biological role, classification, mechanism of action. Neuro-hormonal regulation of metabolism. Hypothalamic-pituitary hormones.	Hormones, biological role, classification, mechanism of action. Hormonal regulation of metabolism. Hypothalamic-pituitary hormones. Experimental prove of the proteic nature of insulin
11	09-13.11.20	Hormones of the thyroid gland. Hypo- and hyperfunction of the thyroid gland. Hormones of the pancreas. Diabetes mellitus.	Hormones of the thyroid gland. Hormones of the pancreas and adrenal glands medulla. Determination of adrenaline.
12	16-20.11.20	Medullo- adrenal gland hormones. Adrenal cortex hormones. Sex hormones.	Hormones of the adrenal glands cortex. Sex hormones. Hormones that regulate the metabolism of calcium and phosphates (parathyroid hormone, calcitonin and calcitriol). Paracrine and autocrine hormones (growth factors, cytokines and chemokines, eicosanoids). Determination of 17-ketosteroids in urine.
13	23-27.11.20	Hormones that regulate calcium and phosphate homeostasis (parathyroid hormone, calcitonin and calcitriol). Paracrine and autocrine hormones (growth factors, cytokines and chemokines, eicosanoids).	Biochemistry of blood. Chemical composition of plasma. Proteins of blood plasma, enzymes, non-protein nitrogenous substances, minerals. Peculiarities of chemical composition and metabolism of leucocytes. Determination of the concentration of total protein, albumin in serum.
14	30.11-04.12.20	Biochemistry of blood. The chemical composition of blood plasma. Plasma proteins, blood enzymes, residual nitrogen, mineral substances. Peculiarities of chemical composition and metabolism of leucocytes.	Peculiarities of chemical composition and metabolism of trombocytes. Blood clotting factors, mechanisms. Anti-coagulant and fibrinolytic systems.
15	07-11.12.20	Blood clotting: factors, mechanisms. Anti-coagulant and fibrinolytic systems. Peculiarities of chemical composition and metabolism of trombocytes.	Peculiarities of chemical composition and metabolism of eritrocytes. Respiratory function of blood. Acid-base balance. Determination of hemoglobin in the blood.
16	14-18.12.20	Peculiarities of chemical composition and metabolism of eritrocytes. Respiratory function of blood. Acid-base balance.	Concluding test on chapter "Hormones. Blood"
17	21-25.12.20	Metabolism integration	Admission to the exam session.



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Note:

Svetlana Bobcova, Ph.D., Associate Professor, is responsible for the theoretical classes for 2nd year Spring Batch students of Faculty of Medicine.
Duration of the theoretical class - 2 hours, practical lesson - 3 hours.