

27.01.2017 _____

**THE CALENDAR-THEME SCHEDULE OF LECTURES
TO BIOCHEMISTRY FOR 2ND YEAR STUDENTS OF THE MEDICAL FACULTY ON THE
IV (SPRING) SEMESTER (2016-2017 academic years)**

№	Date	Theme of lecture	Lecturer	Time (h)
9.	30.01.-03.02.17.	Molecular genetics. Regulation of genes expression in procaryotes by Jacob and Monod. Features of regulation of protein biosynthesis in eucaryotes. Molecular mechanism of mutations. DNA- reparation. Genetic engineering principles.	Associate prof. M.M.Chervyack	2
10.	9-17.02.	Hormones: definition, classification, regulation of synthesis, common characteristics. Molecular mechanisms of regulatory signals transduction: membranous and cytosolic. Hormonoids. Apoptosis: concept, signal systems.	Associate prof. M.M.Chervyack	2
11.	23.02.-3.03.	Biochemistry of blood. Peculiarity of metabolism in erythrocytes. Blood: functions, physicochemical constants. Hemoglobin: structure, types, connections, biosynthesis, pathologies.	Associate prof. M.M.Chervyack	2
12.	9-17.03.	Biochemistry of liver. Its role in protein, lipid and carbohydrate metabolisms. Pigmentary metabolism. Jaundices: types, reasons, biochemical diagnostics. Xenobiotics metabolism. Conception about xenobiotics. Common pathway of its biotransformation. Characteristics of cytochrome P-450. Ehanol metabolism.	Associate prof. M.M.Chervyack	2
13.	23-31.03.	Water-mineral metabolism. Biological fluids.	Associate prof. M.M.Chervyack	2
14.	6-14.04.	Biochemistry of muscular, nervous and connective tissues. Muscle fibers structure and composition. Peculiarities of collagen and elastin structures. Enzymes of its degradation. Types of receptors. Mediators metabolism. Cerebrospinal fluid.	Associate prof. M.M.Chervyack	2
			Total	12

Head of Biochemistry Departament

Associate prof. Zaichko N.V.

**THE CALENDAR-THEME SCHEDULE OF LABORATORY LESSONS TO BIOCHEMISTRY FOR
2ND YEAR STUDENTS OF THE MEDICAL FACULTY ON THE IV (SPRING) SEMESTER (2016-
2017 academic years)**

№	Date	Theme of laboratory lesson	Time (h)
25.	30.01.-03.02.	Specialised ways of acyclic and cyclic amino acids metabolisms. Enzymopathies. Determination of glutathione and cysteine sum.	2
26.	6-08.02.	Nucleoproteins: definition, structures, digestion in GIT. Nucleic acids: definition, classification, structures, biological values. Metabolism of nucleotides and its pathology. Qualitative analysis of nucleoproteins. Determination of uric acid.	2
27.	9-14.02.	Molecular biology. Genetic code. Replication. Transcription. Processing. Inhibitors of transcription. Quantitative determination of DNA and RNA in biological fluids	2
28.	15.-17.02.	Translation. Inhibitors of translation. Post-translational modification of proteins. Separation of casein from milk.	2
29.	20-22.02.	Regulation of genes expression in procaryotes and eucaryotes Molecular mechanism of mutations. Genetic engineering. Determination of phenyl pyruvate and homogentisic acid in urine.	2
30.	23-28.02.	Concluding session “Metabolism of simple proteins. Bases of molecular biology and genetics”	2
31.	1-3.03.	Hormones: definition, classification, common characteristics of hormones and hormonoids. Molecular mechanisms of regulatory signals transduction. Apoptosis: concept, signal systems. Qualitative reactions on adrenalin, insulin, thyroxin. Determination of NO metabolites in saliva.	2
32.	6-8.03.	Characteristics of hormones of central and peripheral endocrine glands. Determination of 17- ketosteroids	2
33.	9-14.03.	Hormones of endoexocrine glands characteristics. Endocrine control of Ca and P homeostasis. Influence of adrenalin and insulin on glucose levels in blood.	2
34.	15-17.03.	Vitamins: definition, history of discovery, basic concepts of vitaminology, classification, nomenclature. Vitamine-like compounds. Characteristics of water-soluble vitamins of B group, C and P, its coenzymatic and non- coenzymatic functions, food sources, daily needs, symptoms of avitaminosis, medical use. Qualitative reactions on water-soluble vitamins. Quantitative determination of vitamins C and P in food products.	2
35.	20-22.03.	Lipid soluble vitamins: coenzymatic and non- coenzymatic functions, medical use. Symptoms and reasons of avitaminosis and hypervitaminosis. Qualitative reactions on lipid soluble vitamins.	2
36.	23-28.03.	Blood: functions, physicochemical constants in norm both in pathology. Non-protein nitrogen-containing and anazotic compounds. Rest nitrogen. Azotemies. Quantitative determination of chlorides in blood.	2
37.	29-31.03.	Proteins of blood plasma. “Acute phase” proteins. Enzymes of blood. Kinins systems. Separation of fibrinogen from blood plasma.	2
38.	3-5.04.	Peculiarity of metabolism in erythrocytes. Hemoglobin: structure, types, connections, biosynthesis, its pathologies. Qualitative tests on heme in HHb. Adler's [benzidine] test.	2
39.	6-11.04.	Biochemistry of liver, its role in protein, lipid and carbohydrate metabolisms. Pigmentary metabolism. Catabolism of heme in tissues Jaundices. Quantitative determination of total protein in blood. Determination of urobilin in urine and total bilirubin in blood.	2
40.	12-14.04.	Detoxificational function of liver. General pathways of xenobiotics metabolism. I stage of xenobiotics biotransformation (microsomal oxidation). II and III stages of xenobiotics biotransformation. Reactions of conjugation. Amidopirin test. Detection of anilin metabolites in urine.	2
41.	17-19.04.	Water-mineral metabolism. Minor element: classification, values. Water: structure, biological value. Endocrine control of water-mineral metabolism. Qualitative reactions on Ca ²⁺ , Mg ²⁺ and PO ₄ ³⁻ .	2
42.	20-25.04.	Biochemistry of kidneys and urine. Normal and pathological components of urine. Physicochemical properties of urine, its titration acidity.	2
43.	26-28.04.	Concluding session “Functional biochemistry”	2
44.	1-3.05.	Biochemistry of tissues. Muscular tissue: energy supply of contraction. Determination of creatinine levels in urine.	2
45.	4-9.05.	Biochemistry of connective tissue: peculiarities of collagen and elastin structures, enzymes of its degradation. Qualitative reactions on glycosaminoglycans.	2
46.	10-12.05.	Biochemistry of nervous tissue: types of receptors, cerebrospinal fluid. Qualitative reactions on acetylcholine.	2
47.	15-17.05.	Practical training, situational tasks	2
48.	18-23.05.	Computer testing.	2
		Total	48