

Confirmed by the Chair session
 Protocol No. 8 dated «30» December 2021
 The Head of the department _____ Accos. prof. L. Kobylinska

THEMATIC SCHEDULE OF LECTURES
on biological chemistry for the 2nd year students of dentistry faculty
during the spring term of 2021 – 2022 academic year

No	Topics and contents of lectures	Lecturer	Date	Number of hours
<i>Thematic module 7. “Metabolism of amino acids”</i>				
1.	Metabolism of amino acids. General pathways of amino acid turnover. Metabolism of ammonia: urea synthesis and its disorders. Hereditary enzymopathias of distinct amino acids.	Assoc. prof. Nasadiuk Ch.M	24.01	2
<i>Thematic module 10. “Molecular mechanisms of action of hormones of protein nature on target cells. Regulation of metabolism”</i>				
2.	Biochemistry of hormones: molecular mechanisms of hormone action; pathology of endocrine action.	Assoc. prof. Kobylinska L.I.	7.02	2
<i>Thematic module 12. “Biochemistry of nutrition. Vitamins as components of nutrition”</i>				
3.	Functional role of water- and fat-soluble vitamins in metabolic pathways	Assoc. prof. Nasadiuk Ch.M	21.02	2
<i>Thematic module 13. “Biochemistry of blood”</i>				
4.	Biochemistry of blood. Coagulation and fibrinolytic systems. Pathobiochemistry of blood	Prof. Fomenko I.S.	7.03	2
<i>Thematic module 14. “Functional and clinical biochemistry of organs and tissues”</i>				
5.	Biochemical functions of liver. Biochemistry of jaundices; biotransformation of foreign substances in liver	Assoc. prof. Kobylinska L.I.	21.03	2
6.	Biochemistry of tooth. Amelogenesis	Assoc. prof. Nasadiuk Ch.M	4.04	2
Totally:				12

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THEMATIC SCHEDULE
of practice and laboratory studies on biological chemistry for the 2nd year students of
dentistry faculty during the spring term of 2021 – 2022 academic year

No	The topic	Dates	Number of hours
<i>Thematic module 7. “Metabolism of amino acids”</i>			
1.	Studies on amino acid metabolism (deamination, transamination, decarboxylation). Biogenic amines	20.01	2
2.	Detoxification of ammonia and urea biosynthesis. Metabolism of individual amino acids	27.01	2
3.	Metabolism of cyclic amino acids. Biosynthesis of creatine and glutathione	3.02	2
<i>Thematic module 8. “Molecular biology”</i>			
4.	Biosynthesis and catabolism of purine and pyrimidine nucleotides, determination of end products of their metabolism. Hereditary disorders of nucleotide metabolism	10.02	2
<i>Thematic module 9. “Basis of molecular genetics”</i>			
5.	Replication of DNA and transcription of RNA. Analysis of the mechanisms of mutations, repair of DNA. Protein biosynthesis in ribosomes, investigation of initiation, elongation and termination stages in synthesis of polypeptide chain.	17.02	2
<i>Thematic module 10. “Molecular mechanisms of action of hormones of protein nature on target cells. Regulation of metabolism”</i>			
6.	Investigation of molecular and cellular mechanisms of action of protein and peptide hormones on target cells. Mechanism of hormonal action of amino acid derivatives and biogenic amines	24.02	2
<i>Thematic module 11. “Molecular mechanisms of action of steroid and thyroid hormones, their role in regulation of metabolism”</i>			
7.	Investigation of molecular and cellular mechanisms of action of steroid and thyroid hormones upon target cells. Hormonal regulation of calcium homeostasis. Eicosanoids	3.03	2
<i>Thematic module 12. “Biochemistry of nutrition. Vitamins as components of nutrition”</i>			
8.	Biochemistry of chemical composition and content of saliva	10.03	2
9.	Nutrition of proteins, carbohydrates and lipids in digestive tract	17.03	2
10.	Functional role of water soluble vitamins	24.03	2
11.	Functional role of fat soluble vitamins	31.03	2
<i>Thematic module 13. “Biochemistry of blood”</i>			
12.	Proteins of blood plasma: proteins of acute phase, genuine and indicator enzymes. Nonprotein nitrogen containing and nitrogen free components of blood	7.04	2
13.	Blood coagulation, anticoagulant and fibrinolytic systems of blood. Biochemistry of immune reactions. Immunodeficiency	14.04	2
<i>Thematic module 14. “Functional and clinical biochemistry of organs and tissues”</i>			
14.	Biotransformation of xenobiotics and endogenous toxins	21.04	2
15.	Investigation of end products of heme catabolism. Pathobiochemistry of jaundices	28.04	2
16.	Investigation of water and mineral metabolism. Normal and pathological constituents of urine	5.05	2
17.	Investigation of biochemical components of connective tissue	12.05	2
18.	Biochemistry of mineralization of tooth enamel. Biochemical events in process of demineralization and tooth decay	19.05	2
19.	Biochemistry of nervous and muscle tissues. Pathochemistry of psychotic disorders	26.05	2
Totally:			38

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THEMATIC SCHEDULE of individual work on biological chemistry for the 2nd year students of dentistry faculty during the spring term of 2021 – 2022 academic year

No	The topic	Number of hours	Forms of assessment
<i>Thematic module 7. "Metabolism of amino acids"</i>			
1.	Clinical and diagnostic value of the definition of transaminases	2	The current control during practice classes activities
2.	Features of functioning of the ornithine cycle in normal and in pathology	3	
3.	Metabolism of porphyrins in normal and in pathology	2	
4.	Changes of the metabolism of sulfur-containing amino acids - cystinuria, cystinosis, homocystiluria	2	
<i>Thematic module 8. "Molecular biology"</i>			
5.	Phases of the cell cycle of eukaryotes. Biochemical mechanisms of control of cell entry to mitosis; cdc2 -kinase, cyclin	3	The current control during practice classes activities
6.	Biochemical mechanism of development of apoptosis and necrosis	2	
<i>Thematic module 9. "Basis of molecular genetics"</i>			
7.	Congenital and acquired disorders of mechanisms of DNA repair	2	The current control during practice classes activities
8.	Genetic engineering. Cloning The application of genetic engineering techniques in modern medicine	4	
<i>Thematic module 10. "Molecular mechanisms of action of hormones of protein nature on target cells. Regulation of metabolism"</i>			
9.	Endocrine function of the pancreas in normal and in pathology	3	The current control during practice classes activities
<i>Thematic module 11. "Molecular mechanisms of action of steroid and thyroid hormones, their role in regulation of metabolism"</i>			
10.	Transformation of arachidonic acid in a human body and the influence of its products on biochemical processes	2	The current control during practice classes activities
<i>Thematic module 12. "Biochemistry of nutrition. Vitamins as components of nutrition"</i>			
11.	Modern requirements for components of rational nutrition. The role of nutritional supplements	2	The current control during practice classes activities
12.	Endogenous hypovitaminosis. Causes and mechanisms of development in diseases of the digestive and cardiovascular systems	4	
<i>Thematic module 13. "Biochemistry of blood"</i>			
13.	Assessment of nitrogen metabolism and changes in the content of nitrogen-containing non-protein compounds of blood	2	The current control during practice classes activities
14.	AIDS - the molecular mechanism of occurrence, pathochemical changes.	2	
<i>Thematic module 14. "Functional and clinical biochemistry of organs and tissues"</i>			
15.	Disturbances in the exchange of mediators and modulators of the brain in mental disorders	2	The current control during practice classes activities
16.	Importance of fluor for the tooth tissue	3	
TOTALLY FOR THE SPING TERM :		40	