

Medical Chemistry and Biochemistry B83120

Week	Week from	Lectures Monday 12.30-14.00, Thursday 12.30-14.00 Lecture Hall ÚLBLD (No. 3.073), Kateřinská 32	Teacher	Seminars Monday 14.15-15.45 (2053, 2054) Lecture Hall ÚLBLD (No. 3.073), Kateřinská 32 Tuesday 14.15-15.45 (2055, 2056) Lecture Hall ÚLBLD (No. 3.073), Kateřinská 32 Friday 14.15-15.45 (2051, 2052) Lecture Hall ÚLBLD (No. 3.073), Kateřinská 32	Teacher	Practical lessons Monday 14.15-17.15 (2055, 2056) Wednesday 14.15-17.15 (2051,2052) Thursday 14.15-17.15 (2053, 2054)
1.	30.09.2024	Introduction to study of medical biochemistry. Basic terms. Dispersion systems.	Prof. Navrátil	Calculations 1: Ionic equations, solutions, stoichiometry	Dr. Pláteník	Introduction to work in chemical laboratory. Safety rules. Measuring volumes, centrifugation, filtration, dissolution, separation of substances form mixtures.
		Acids, bases, buffers.	Prof. Navrátil			
2.	07.10.2024	Activity. Dissociation. Ionic strength. Colloids.	Prof. Navrátil	Calculations 2: pH of acids and bases, osmolarity	Dr. Nosková	Qualitative and quantitative analysis in inorganic chemistry: Reactions of cations and anions. Titrations.
		Essentials of physical and analytical chemistry.	Prof. Navrátil			
3.	14.10.2024	Toxicologically important anorganic substances.	Prof. Navrátil	Calculations 3: Buffers	Dr. Rybníkářová	Spectrophotometry in biochemistry.
		Essentials of organic chemistry	as. Rybníkářová			
4.	21.10.2024	Amino acids. Peptides. Proteins.	Dr. Pláteník	Similarities of organic and biochemical reactions	Dr. Rybníkářová	Buffers, buffer capacity. Oxidation and Reduction. Electrode processes.
		Enzymes 1.	Dr. Ševčík			
5.	28.10.2024	28.10.2024 National Holiday		Models of (bio)organic compounds. Chirality.	Ing. Subhanová	TUTORIAL 1: Calculations, organic chemistry.
		Enzymes 2.	Dr. Ševčík			
6.	04.11.2024	Introduction to the cellular metabolism.	Dr. Janatová	TEST 1: Calculations, organic chemistry.	Group teachers	Basic organic reactions. Properties of proteins. Electrophoresis.
		Biologic oxidation, respiratory chain, oxidative phosphorylation.	Dr. Pláteník			
7.	11.11.2024	Oxidative decarboxylation and Krebs cycle.	Dr. Janatová	Structure of proteins.	Doc. Muchová	Separation techniques: Thin-layer chromatography, gel filtration, dialysis.
		Structure, digestion, absorption and transport of saccharides.	Doc. Muchová			
8.	18.11.2024	Metabolism of saccharides I.	Doc. Muchová	Enzyme kinetics.	Dr. Ševčík	Selected reactions of saccharides. Biochemical examination of diabetes mellitus.
		Metabolism of saccharides II.	Doc. Muchová			
9.	25.11.2024	Structure, digestion, and absorption of lipids.	Dr. Vecka	Stereochemistry of saccharides. Basic reactions of saccharides.	Dr. Vecka	Specificity of enzymes, effect of pH on enzyme activity. Redox enzymes
		Metabolism of fatty acids and triacylglycerols.	Doc. Křepela			
10.	02.12.2024	Lipid mediators. Metabolism of glycerolipids and sfingolipids.	Dr. Vecka	Structure and basic reactions of lipids	Dr. Vecka	TUTORIAL 2: Enzymes, oxidative phosphorylation, citric acid cycle, saccharides.
		Steroids	Dr. Vecka			
11.	09.12.2024	Metabolism of amino acids, the urea cycle.	Doc. Vachtenheim	Transport of lipids. Lipoproteins.	Dr. Vecka	Reactions of lipids. Digestion of lipids. Biochemical examination of lipid metabolism.
		Catabolism of amino acids and their carbon skeletons.	Doc. Vachtenheim			
12.	16.12.2024	Conversion of amino acids to biologically active derivatives.	Dr. Krtíl			Metabolism of amino acids. Nitrogen balance.
		Connections among metabolism of saccharides, lipids and amino acids.	Dr. Pláteník			
Christmass vacation 21. 12. 2024 - 5. 1. 2025						
13.	06.01.2025			Selected immunochemical methods.	Dr. Nosková	TUTORIAL 3: Amino acids, lipids, conections among metabolic pathways
		Metabolism of porphyrins.	Doc. Křepela			
14.	13.01.2025	Metabolism of purines and pyrimidines.	Doc. Křepela			Imunochemical methods.
15.	20.01.2025	Credit				