

Medical Chemistry, Materials in Dental Medicine B81133

Week	Week from	Lecture date	Lectures	Teacher	Seminars	Teacher	Practical lessons	Teacher
			Tue 9.00-9.45 Seminary Room No. 3.074		Tue 14.15-15.45 Seminary Room No. 3.074		Fri 14.15-16.30 Student laboratory	
1.	30.09.24	01.10.24	Introduction to the course	Dr. Pláteník				
2.	07.10.24	08.10.24	Chemical bond. Water, solutions, dissolution. Chemical activity. Dissociation. Ionic strength. Colloids. Diffusion. Osmolarity.	Prof. Navrátil	Nomenclature of inorganic compounds. Ionic equations.	Dr. Pláteník	Introduction to work in chemical laboratory. Reactions of inorganic ions.	
3.	14.10.24	15.10.24	Acids and bases, pH. Neutralisation. Buffers.	Prof. Navrátil	Calculations involving concentrations. pH calculations I.	Dr. Pláteník	Acid-base titration. Argentometry. Titration curves.	
4.	21.10.24	22.10.24	Thermodynamics, thermochemistry. Chemical equilibrium and chemical kinetics. Catalysis.	Prof. Navrátil	pH calculations II, buffers.	Dr. Pláteník		
5.	28.10.24	29.10.24	Redox reactions. Basics of electrochemistry. Galvanic and electrochemical cell. Energetics of chemical reaction.	Prof. Navrátil	Stoichiometric calculations. Calculations of osmolality and osmotic pressure.	Dr. Pláteník	Buffers and buffer capacity. Galvanic cell in the mouth.	
6.	04.11.24	05.11.24	Elements and inorganic compounds important in biochemistry, toxicology and dentistry I.	Doc. Malbohan	Revision test: Inorganic chemistry, calculations.			
7.	11.11.24	12.11.24	Elements and inorganic compounds important in biochemistry, toxicology and dentistry II.	Doc. Malbohan	Overview of basic methods used in biochemical lab: photometry, chromatography, electrophoresis, blotting.	Dr. Pláteník	Introduction to spectrophotometry: Absorption spectra of colored solutions. Calibration curve, factor calculation.	
8.	18.11.24	19.11.24	Elements and inorganic compounds important in biochemistry, toxicology and dentistry III.	Doc. Malbohan				
9.	25.11.24	26.11.24	Organic chemistry: stereochemistry, structures and classification of organic compounds	Dr. Rybníkářová (Doc. Malbohan)	Models of (bio)organic compounds. Chirality of amino acids.	Ing. Subhanová	Reactivity of basic functional groups in organic compounds.	
10.	02.12.24	03.12.24	Hydrocarbons and their derivatives - biological and toxicological importance	Dr. Rybníkářová (Doc. Malbohan)	Amino acids, proteins and enzymes.	Dr. Pláteník	Amino acids and proteins: Reactions of amino acids. Properties of proteins. Dialysis. Electrophoresis.	
11.	09.12.24	10.12.24	Carboxylic acids and their derivatives	Dr. Rybníkářová (Doc. Malbohan)	Stereochemistry of saccharides.	Dr. Pláteník	Saccharides: Colored reactions of saccharides. Analysis of unknown saccharide. TLC.	
12.	16.12.24	17.12.24	Heterocyclic compounds and derived substances. Alkaloids.	Doc. Malbohan	Structure of lipids, biomembranes.	Dr. Vecka		
Christmas vacation 21. 12. 2024 - 5. 1. 2025								
13.	06.01.25	7.1.25						
14.	13.01.25	14.1.25	Structure of nucleic acids.	Dr. Janatová	Enzymes, enzyme kinetics	Dr. Ševčík	Enzymes: Acidic hydrolysis of starch. Substrate specificity of amylase and sucrase.	
15.	20.01.25	21.1.25	Consultation lecture				PRACTICAL CREDIT TEST	Dr. Pláteník