

(on Wednesdays 13:00 – 14:50, Faculty of Medicine, Large lecture Hall, Komenskeho nam.2)

Week	Date	
1	18 Feb.	Enzymes. Characteristic features of biocatalysis, enzyme structure and function, nomenclature and classification of enzymes. Enzyme cofactors, review of structures and functions.
2	25 Feb.	Mechanisms of enzyme action. Kinetics of enzyme catalyzed reactions. Assays of enzyme activity, the conditions used. Factors affecting catalytic activity of enzymes, types of enzyme inhibition.
3	4 Mar.	Metabolism: basic concepts and design. Biological oxidations, generation of high-energy compounds. Saccharide metabolism: the glycolytic pathway and aerobic decarboxylation of pyruvate.
4	11 Mar.	Gluconeogenesis. Glycogen biosynthesis and breakdown.
5	18 Mar.	The pentose phosphate pathway. The glucuronate pathway. Interconversions of monosaccharides and of their derivatives.
6	25 Mar.	Protein and amino acid metabolism. The common reactions in amino acid degradation. The ureosynthetic cycle.
7	1 Apr.	Metabolic breakdown of individual amino acids.
8	8 Apr.	Biosynthesis and breakdown of fatty acids, ketogenesis. Synthesis of triacylglycerols.
9	15 Apr.	Metabolism of phospholipids and glycolipids. Synthesis of eicosanoids. Biosynthesis and transformations of cholesterol, biosynthesis of bile acids.
10	22 Apr.	Interrelationships among the major pathways involved in energy metabolism. The citric acid cycle. Synthesis of haem.
11	29 Apr.	Mitochondria. Oxidative phosphorylation - mitochondrial electron transport chain, synthesis of ATP.
12	6 May	Biosynthesis and catabolism of purine and pyrimidine nucleotides. Chromatin, DNA replication.
13	13 May	DNA transcription. Regulation of gene expression.
14	20 May	Protein synthesis and post-translational processing.
15	--	(Anatomical dissection course.)