

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

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