



## COURSE DATASHEET

<b>Semester:</b>	2013/14/1
<b>Course:</b>	Biochemistry
<b>Code:</b>	VEMKOKB264B
<b>Responsible department:</b>	Department of Organic Chemistry
<b>Department code:</b>	MKOK
<b>Responsible instructor:</b>	Dr. Rita Skodáné Földes

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### Course objectives:

Educational objectives: Practice: To gain a deeper understanding of the topics of the biochemistry lecture  
Laboratory practice: Methods of qualitative and quantitative analysis used in biochemistry. Characteristics of enzymatic reactions

### Course content:

Detailed content of the subject Practice: 1.Carbohydrates: monosaccharides and typical reactions  
2.Carbohydrates: di-, polysaccharides. Structure and biochemical role. 3.Properties of amino acids. Peptides. Structural elements of proteins. 4.Nucleic acids: bases, nukleotides. Oligonukleotides. Structure of DNA, genetic code 5.Lipids: fatty acids and fats. Phosphoglycerides, sphingomyelines. Terpenes, vitamines, steroids, hormones. Biochemical role. 6.Biocatalysis, The Michaelis-Menten model. 7.Metabolic pathways. Glycolysis, glycogen metabolism. 8.Citric acid cycle 9.Respiratory chain, oxidative phosphorylation. 10.Photosynthesis. 11.Metabolism of unsaturated fatty acids 12.Biosynthesis of lipids. 13.Peptide synthesis in vivo 14.Metabolic pathways of amino acids 15.Metabolic pathways of nucleobases. Laboratory practice: 1.Introduction, safety, requirements, 2.Qualitative tests for carbohydrates 3.Qualitative tests for carbohydrates 4.Quantitative tests for carbohydrates. 5.Qualitative tests for amino acids, separation of amino acids 6.Qualitative and quantitative tests for proteins. 7.Qualitative tests for lipids. Iodine number, saponification of lipids 8.Determination of ascorbic acid concentration in juices. Separation of pigments from chloroplasts 9.Enzymatic reactions. Invertase activity 10.Enzymatic reactions. Fermentation. 11.Enzymatic reactions. Tirosinase activity 12.Enzymatic reactions. Guaiacol peroxidase activity. 13.Enzymatic reactions. cataéase activity. 14.Supplementary practice. 15.Final test

### Requirements, evaluation and grading:

Requirements: - attendance is compulsory - passing two tests on the subjects of the practice with an average score of 2 or above - making reports of each experiment, passing pre-lab tests with an average score of 2 or above, passing final test with a score of 2 or above

### Required and recommended readings:

Kötelező és ajánlott irodalom: Ábrahám S., Oláh B.: Biokémia I-II Egyetemi jegyzet Kolman, J.; Röhm, K. H. Color Atlas of Biochemistry, Thieme, Stuttgart 1996 Voet, D., Voet, J.G.: Biochemie, VCH, Weinheim, 1992 Boros L., Sajgó M.: Bevezetés a biokémiába. MK, Budapest, 1993. Dr. Ábrahám Sándor, Dr. Oláh Béla, Földi Aranka, Cserépné Bendik Ildikó: Biokémiai laboratóriumi gyakorlatok. Veszprémi Egyetemi Kiadó