



## COURSE DATASHEET

<b>Semester:</b>	2012/13/2
<b>Course:</b>	Chemical technology
<b>Code:</b>	VEMKOKB212T
<b>Responsible department:</b>	Department of Organic Chemistry
<b>Department code:</b>	MKOK
<b>Responsible instructor:</b>	Dr. Szilárd Tőrös

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### Course objectives:

Educational objectives: Students will be informed of the key areas of modern technology in organic chemistry.

### Course content:

Detailed content of the subject: 1. The concept of technology of Organic chemistry, organic chemical raw materials for synthesis. Overview of the fundamental processes of the new functional groups as input. 2. The nitration and sulfonation of industrial implementation, similar and different from their properties. 3. The enthalpy and entropy changes on the product formulation of the halogenation reactions. 4. The steady-state characteristics of the processes of esterification as an example. 5. Industry reactions to the production of polyurethanes. 6. The main characteristics of the Friedel-Crafts reactions, and their application in large industrial syntheses. 7. The importance of oxidation processes, modern methods of synthesis of phenol. 8. Intermediate Exam 9. The significance and limitations of the use of pesticides. The herbicides, fungicides and insecticides main types. 10. The natural-based and synthetic pesticides. The molecule structure and effects of pesticides in the relationship between the presentation of the pyrethroids as an example. 11. Application of chemo- and regioselective homogeneous catalytic processes in the synthesis of organic chemical intermediates (hydroformylation, synthesis of acetic acid, etc). 12. New trends in the field of large industrial application of homogeneous catalysis (eg. the replacement of phosgene with alkyl phenylcarbamates in synthesis of diisocyanates). 13. Application of stereo- and enantioselective homogeneous catalytic processes for fine chemical syntheses. 14. The basics of the enzyme catalysis, the application of biotechnological methods of organic production of large industrial intermediates. 15. Enzymes in the food industry, in the clinical practice and in the environment.

### Requirements, evaluation and grading:

Requirements: The test written on the 8th week must be passed.

### Required and recommended readings:

dr Losonczy Béla: Szerves kémiai technológia, Tankönyvkiadó, Budapest, 1988. dr Heiszman József: Szerves kémiai technológia, Tankönyvkiadó, Budapest, 1991. Dr Deák Gyula: Szerves vegyipari alapfolyamatok



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### Required and recommended readings:

kézikönyve, Műszaki Könyvkiadó, Bpest, 1978. ? Weissermel, K., Arpe, H.J.: Ipari szerves kémia, Nemzeti Tankönyvkiadó, Budapest, 1993. ? Tőrös Sz., Heil B.: Nagyszelektivitású szerveskémi szintézisek, oktatási segédlet, 1987.