



COURSE DATASHEET

Semester:	2015/16/2
Course:	Chemistry of medicines and the design of organic syntheses
Code:	VEMKOT4244A
Responsible department:	Department of Organic Chemistry
Department code:	MKOK
Responsible instructor:	Dr. Szilárd Tőrös

Course objectives:

Educational Objectives: Introduction to drug research and development. Discussion of the synthesis of different drug types and molecules. Introduction to theoretical and practical aspects of organic synthesis design.

Course content:

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1. Basic knowledges of drug chemistry and pharmacodynamics.
2. Pharmacokinetics – the study of the movements of drugs in the body.
3. Compounds acting on the autonomic nervous system.
4. Compounds acting on the central nervous system (anaesthetics, analgesics).
5. Compounds acting on the central nervous system (drugs, doping substances, sedatives).
6. Compounds acting on the cardiovascular system.
7. Compounds acting on digestion, role of the vitamins.
8. Steroids (sex hormones, contraceptives).
9. Compounds against pathogens.
10. Chemotherapeutics.
11. Toxicology.
12. The process of drug research.
13. Molecule construction: the synthon theory, design of syntheses.
14. Modern organic syntheses in pharmacology.



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Requirements, evaluation and grading:

Educational Objectives:

Introduction to drug research and development. Discussion of the synthesis of different drug types and molecules. Introduction to theoretical and practical aspects of organic synthesis design.

Requirements: The students will work out the possible synthesis paths of a drug or an organic intermediate and will evaluate them critically.

Required and recommended readings:

Faigl Ferenc, Szeghy Lajos, Kovács Ervin, Mátravölgyi Béla: Gyógyszerek, Budapest, 2012

Faigl Ferenc, Kovács Ervin, Mátravölgyi Béla, Thurner Angelika: Gyógyszerkémiai alapfolyamatok, Budapest, 2012

Dévay Attila, Antal István: A gyógyszeres terápia biofarmáciai alapjai, Medicina Könyvkiadó Zrt., Budapest, 2009.

Fürst Zsuzsanna: Farmakológia, Medicina Könyvkiadó Zrt., Budapest, 2006.