Course
Specifications
Valid as from the academic year 2016-2017

Bio-organic Chemistry (C002958)

Lecturers in academic year 2017-2018
Van der Eycken, Johan 
WE07 lecturer-in-charge

Course offerings and teaching methods in academic year 2017-2018
A (semester 2) lecture 15.0 h

Offered in the following programmes in 2017-2018
Master of Science in Chemistry 
crdts offering
3 A
Exchange Programme in Chemistry (master's level) 
crdts offering
3 A

Teaching languages
English

Keywords
Enzymatic catalysis, enzyme models, synzymes, abzymes, catalytic antibodies, enzyme inhibitors, synthetic receptors, molecular recognition

Position of the course
The students are made aware of the link between biochemical processes and organic chemistry. Mechanistic aspects of biochemical processes and molecular recognition on the molecular level are discussed.

Contents
• Enzymatic catalyses: principles
• Enzyme models (synzymes)
• Abzymes: antibodies as tailor-made biocatalysts
• Enzyme-inhibitors: way of action and rational design
• Crown ethers as synthetic receptors
• Active transport mediated by crown ethers

Initial competences
Basic organic chemistry (Bachelor level)

Final competences
1. Thorough insight in the chemistry of bioorganic processes and molecular recognition.
2. Knowledge of the principles of enzyme catalysis.
3. Application of the principles of enzyme catalysis for designing enzyme models, inhibitors and catalytic antibodies.
4. Ability to recognize the relationship between "bio"chemistry and organic chemistry.
5. Ability to use this knowledge to solve and interpret concrete problems.
6. Ability to understand and follow new developments in the field via the literature.

Conditions for credit contract
Access to this course unit via a credit contract is determined after successful competences assessment

Conditions for exam contract
This course unit cannot be taken via an exam contract

Teaching methods
Lecture

(Approved)
Learning materials and price
Copies of slides and selected literature references Cost: 5 EUR

References
H. Dugas: Bioorganic chemistry. A chemical approach to enzyme action.(3rd ed.),
Springer Verlag, Berlin, Germany, 1996.

Course content-related study coaching
Discussion of problems is possible after each course, or upon individual appointment.

Evaluation methods
end-of-term evaluation

Examination methods in case of periodic evaluation during the first examination period
Written examination with open questions, oral examination

Examination methods in case of periodic evaluation during the second examination period
Written examination with open questions, oral examination

Examination methods in case of permanent evaluation

Possibilities of retake in case of permanent evaluation
not applicable

Extra information on the examination methods
Insight in the basic concepts of the course will be checked, as well as the ability to apply these concepts to solve concrete problems.

Calculation of the examination mark
100% periodic evaluation