Biochemistry (O000016)

Valid as from the academic year 2016-2017

Course Specifications

Lecturers in academic year 2016-2017
Magez, Stefan
CA10 lecturer-in-charge

Course offerings and teaching methods in academic year 2016-2017
A (semester 1)
lecture 30.0 h
practicum 30.0 h

Offered in the following programmes in 2016-2017
Bachelor of Science in Food Technology 5 A
Joint Section Bachelor of Science in Environmental Technology, Food Technology and Molecular Biotechnology 5 A
Bachelor of Science in Environmental Technology 5 A
Bachelor of Science in Molecular Biotechnology 5 A

Teaching languages
English

Keywords
Biochemistry, Metabolism

Position of the course
The basic concepts of the metabolic processes in the cell are studied. The most important biochemical cycles and enzymatic processes are described, as well as the regulation of the different pathways. This course is meant to provide the student with a sufficient insight in bio-energetics and intermediary metabolism.

Contents
1. General concepts of biochemical reactions and energy flows
2. Building blocks and structure of proteins, carbohydrates lipids
3. Signaling over lipid membranes
4. Function of enzymes
5. Introduction to metabolism
6. Glycolysis, gluconeogenesis and glycogen metabolism
7. Citric acid cycle, pentose phosphate pathway and oxidative phosphorylation
8. Basics of amino acid and nucleotide metabolism.
9. Biochemistry of signal transduction

Initial competences
Competences acquired in Organic Chemistry 1, The Living World 1 and The Living World 2.

Final competences
The student understands the basic principles in metabolism and the links between different metabolic pathways. The student can use the gained knowledge to solve problems related to the course contents.

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

(Approved)
Teaching methods
Lecture, practicum

Learning materials and price

References

Course content-related study coaching

Evaluation methods
end-of-term evaluation and continuous assessment

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

Examination methods in case of periodic evaluation during the second examination period

Examination methods in case of permanent evaluation
Participation, report

Possibilities of retake in case of permanent evaluation
examination during the second examination period is possible in modified form

Extra information on the examination methods
Practical – participation is mandatory in order to pass this course

Calculation of the examination mark
Written examination with open questions – 90%
Active participation in practical courses + report – 10%

(Approved)