Course Specifications

Valid as from the academic year 2016-2017

Biochemistry (O000016)

Course size *(nominal values; actual values may depend on programme)*

Credits 5.0 **Study time 150 h** **Contact hrs** 60.0 h

Course offerings and teaching methods in academic year 2016-2017

A (semester 1)	lecture	30.0 h
	practicum	30.0 h

Lecturers in academic year 2016-2017

Magez, Stefan	CA10	lecturer-in-charge

Offered in the following programmes in 2016-2017	crdts	offering
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

Teaching methods

Lecture, practicum

Learning materials and price

References

Berg, Tymoczko, Stryer. Biochemisrty (7th or 8th Edition) W.H. Freeman and Company - NY

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%