

# Course Specifications

Valid in the academic year 2018-2019

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

Credits 4.0 Study time 110 h Contact hrs 36.0 h

Course offerings and teaching methods in academic year 2018-2019

A (semester 1)	Dutch	seminar: coached	12.0 h
		exercises	
		lecture	24.0 h

Lecturers in academic year 2018-2019

De Clippeleer, Jessika	LA25	lecturer-in-charge
De Gelder, Leen	LA25	co-lecturer

Offered in the following programmes in 2018-2019

	crdts	offering
<a href="#">Linking Course Master of Science in Biochemical Engineering Technology</a>	4	A

Teaching languages

Dutch

Keywords

Biochemistry, stereochemistry, metabolism, applied microbiology, microbial metabolism

Position of the course

Provide the students the knowledge and understanding in the biochemical composition of organisms, the biochemical processes and regulation, the aspects of applied microbiology and microbial metabolism.

Contents

The course reviews and explores:

- The constitution and the role of the biopolymers: the proteins (chromo-, glyco- and lipoproteins), the polysaccharides and the lipids with special attention to the stereochemistry.
  - The structure and physiology of the proteins in organisms.
  - The metabolism of the (poly)saccharides: photosynthesis, metabolism of the hexoses and the polysaccharides.
  - Formation and breakdown of lipids and nitrogen metabolism.
  - microbial metabolism and relevance in the biotechnology.
  - microbial ecology and role of micro-organisms in the carbon, nitrogen and sulphur cycle.
  - Industrial important micro-organisms
- The students learn the stereochemistry with models of molecules and exercises are performed of metabolisms and cellulair energy production

Initial competences

Credits obtained for biochemistry and microbiology in the study 'professionele' bachelor

Final competences

- 1 The thorough knowledge of the structure and function of biomolecules in cells must be present.
- 2 The characteristics, importance, interaction and applications of biomolecules can be clearly defined.
- 3 Being able to link the diverse bacterial metabolisms to processes in the carbon, nitrogen, and sulfur cycles and be aware of their importance to applied microbiology.
- 4 Knowledge of microbial organisms relevant for applications in industrial biotechnology.

#### 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, seminar: coached exercises

#### Learning materials and price

Teacher's course and slides, background information, scientific and technical literature.

#### References

#### Course content-related study coaching

Possibility to consult the teacher after the lecture/exercise or by appointment.

#### Evaluation methods

end-of-term evaluation and continuous assessment

#### Examination methods in case of periodic evaluation during the first examination period

Written examination

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

Written examination

#### Examination methods in case of permanent evaluation

Skills test

#### Possibilities of retake in case of permanent evaluation

examination during the second examination period is possible

#### Calculation of the examination mark