

Course Specifications

Valid in the academic year 2018-2019

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

Credits	5.0	Study time	140 h	Contact hrs	48.0 h
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Course offerings and teaching methods in academic year 2018-2019

A (semester 2)	Dutch	lecture	24.0 h
		practicum	24.0 h

Lecturers in academic year 2018-2019

De Gelder, Leen	LA25	lecturer-in-charge
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Offered in the following programmes in 2018-2019

	crdts	offering
Bachelor of Science in Bioscience Engineering Technology	5	A

Teaching languages

Dutch

Keywords

Microbiology, micro-organisms

Position of the course

In the course microbiology, the students are introduced into the microbial world. They acquire knowledge and insight into the structure, morphology, taxonomy, ecology, growth, metabolism and application of bacteria, yeast, fungi and viruses. They learn the correct execution of microbiological techniques. The course is the basis for more advanced courses in the fields of industrial, food and environmental microbiology.

Contents

The largest subject entails the bacteria, including their cell structure, morphology, taxonomy, conditions for growth, growth kinetics, metabolism, and their part in the carbon, nitrogen and sulphur cycles. Yeasts and fungi are discussed in terms of their cell structure and morphology (specifically in contrast to the bacteria), taxonomy and life cycles. In between the general theory, relevant practical applications in industrial, food and environmental microbiology are touched upon. Also, physical, chemical and biological sanitation techniques are discussed.

In the exercises, microscopic and biochemical identification techniques for bacteria, yeasts and fungi are carried out and implemented, where special attention is given for their isolation and enumeration. Microbiological techniques are applied in the quality survey of air, water, drinking water and food.

Initial competences

Completed with success the courses Cell Biology and Organic Chemistry.
Enrolled in the course Biochemistry.

Final competences

- 1 A profound basic knowledge of microbiology, encompassing the importance, features, growth, kinetics, nutritional requirements and detection techniques of micro-organisms
- 2 Knowledge and insight concerning microbial metabolisms, their role in carbon, nitrogen and sulfur cycle, and their applications in several sectors
- 3 Knowledge of the properties of industrially important micro-organisms
- 4 Acquiring and correctly applying basic microbiological techniques

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

Syllabus and Exercise notes Microbiology

Reference works in the library

References

Brock biology of microorganisms (2008) Michael T. Madigan, John M. Martinko, Paul V. Dunlap, David P. Clark, San Francisco : Pearson Ed.

Course content-related study coaching

During contact hours

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

Written examination, participation

Possibilities of retake in case of permanent evaluation

examination during the second examination period is not possible

Extra information on the examination methods

Theory: written exam

Practical exercises: continuous evaluation, weekly quizzes, written test

Calculation of the examination mark

Theory: 70%

Exercises: 30%