Course Specifications
Valid as from the academic year 2017-2018

General Microbiology (C003361)

Course size
Credits 4.0    Study time 107 h    Contact hrs 25.0 h

Course offerings and teaching methods in academic year 2018-2019
A (semester 1)    Dutch    lecture 25.0 h

Lecturers in academic year 2018-2019
Vandamme, Peter    WE10    lecturer-in-charge
Saelens, Xavier    WE10    co-lecturer

Offered in the following programmes in 2018-2019
Bachelor of Science in Biochemistry and Biotechnology

Teaching languages
Dutch

Keywords
Bacterial and viral structure, growth and metabolism, interactions with humans, taxonomy, antimicrobial agents, bacteria, viruses

Position of the course
Introduce the students to prokaryotic microorganisms and viruses. The main objective is to provide students with an insight in the structure, growth, ecological and functional role of bacteria and viruses.

Contents
The impact of microorganisms on society; brief history; structure of the microbial cell emphasizing the differences between eukaryotes and prokaryotes; Comparison of Bacteria and Archaea; Growth of the bacterial cell: monitoring of growth, growth curve, batch- and continuous culture, differentiation, formation of endospores, effect of external factors on growth; monitoring and control of microbial growth; introduction to microbial taxonomy; microbiota and pathogenic bacteria; virulence; epidemiology; General introduction to virology: brief history (development of the concept "virus", recent developments), methods for virus research, principles of viral taxonomy, structural elements of viral structure, interaction with the host (bacteriophage, plant virus).

Initial competences
Foreknowledge of elementary molecular and biochemical concepts is required. This course extends the very basic knowledge that was acquired during the course 'General Biochemistry: Molecules of Life', 'Introduction to the life sciences' and 'Introduction to organic structures.'

Final competences
1 To know the general and specific basic knowledge regarding prokaryotic microbiology; structure, organization and function of prokaryotic cells; and the taxonomy and importance of prokaryotes in health and disease.
2 To know viruses, their importance, life cycle and morphology.
3 To understand that, and how, genetic and metabolical characteristics determine the interactions of prokaryotes with their environment.
4 To understand the interaction of microbiology with other scientific disciplines like biology and chemistry, and to develop the attitude to apply this knowledge.
5 To apply basic knowledge to understand, address and solve problems.
6 Relate microbiology with her applications and needs in the society, with due awareness for concerns.
7 To be familiar with specific scientific words and expressions in both Dutch and
Access to this course unit via a credit contract is determined after successful competences assessment.

This course unit cannot be taken via an exam contract.

Lecture

Extra information on the teaching methods

Lectures using Powerpoint presentations (electronically available).

Learning materials and price


Cost: 55,30 EUR

References

Course content-related study coaching

Questions of students can be discussed during the lessons. The lecturer is available to discuss questions or problems individually or to give extra clarifications.

Evaluation methods

end-of-term evaluation

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

Written examination with open questions

Examination methods in case of permanent evaluation

Possibilities of retake in case of permanent evaluation

not applicable

Extra information on the examination methods

General course: written with oral followup
Virolgy: written

Calculation of the examination mark

80% concern the general course (P. Vandamme); 20% virology (X. Saelens)

(Approved)