

Functional Biotic Interactions (C003330)

Due to Covid 19, the education and evaluation methods may vary from the information displayed in the schedules and course details. Any changes will be communicated on Ufora.

Course size (nominal values; actual values may depend on programme)
Credits 6.0 Study time 180 h Contact hrs 62.0 h

Course offerings and teaching methods in academic year 2020-2021

A (semester 2)	English	Gent	lecture	30.0 h
			seminar	25.0 h
			excursion	7.5 h

Lecturers in academic year 2020-2021

de Graaf, Dirk	WE10	lecturer-in-charge
Goormachtig, Sofie	WE09	co-lecturer

Offered in the following programmes in 2020-2021

	crdts	offering
Master of Science in Teaching in Science and Technology (main subject Biology)	6	A
Master of Science in Biology	6	A
Exchange Programme in Biology (master's level)	6	A

Teaching languages

English

Keywords

pathogens, parasites, microbes, adaptations, molecular mechanisms, clinical manifestations, plants, animals, humans

Position of the course

Interactions between organisms is essential for life. By using various examples from diverse taxa, we will discuss various principles that control biotic interactions. Mutualistic as well as pathogenic interactions will be discussed. The functional aspects of those interactions will be discussed.

Contents

1. Adaptations of bacteria to engage in biotic interactions with eukaryotes: quorum sensing and contact-dependent secretion systems: *Vibrio*, *Yersinia* and *Agrobacterium* as examples.
2. Plant pathogen interactions: general concepts of plant immunity, virulence strategies of bacteria, fungi and oomycetes
3. Plant endosymbioses
- 4: Animal- pathogen interactions: innate and adapted immunity; adaptations and interactions with parasites (microsporidia, apicomplexa, kinetoplastidea, helminths and arthropoda)

Initial competences

Knowledge about plant and animal physiology; basics in genetics and cell biology

Final competences

- 1 Have to be able to describe concepts related to biotic interactions.
- 2 Have to be able to summarize concepts related to biotic interactions.
- 3 Have to be able to explain concepts related to biotic interactions.
- 4 Have to be able to interrelate concepts about biotic interactions with each other.
- 5 Be able to analyse in a critical way articles and concepts related to biotic interactions.
- 6 Be able to integrate articles related to biotic interactions.
- 7 Be able to elaborate on concepts related to biotic interactions.

- 8 Be able to orally present elaborated data distilled from several papers related to specific concepts in biotic interactions.
- 9 Communicate in a written way about concepts related to biotic interactions.

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

Excursion, lecture, seminar

Extra information on the teaching methods

The teaching methods might change because of COVID19. More info will be available on Ufora.

Learning materials and price

scientific reviews, powerpoint presentations,..... (Ufora)

References

Course content-related study coaching

Teachers can be contacted after the lectures are upon making an 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

Assignment

Possibilities of retake in case of permanent evaluation

not applicable

Calculation of the examination mark

The non-periodical evaluation counts for 3/20 points. For the periodic evaluation, the following applies: when your score is less than 10/20 for one of the components (partim prof. de Graaf and partim prof. Goormachtig) you cannot pass for the whole of the course. If the final score would be a figure of ten or more on twenty, this will be reduced to the highest insufficient grade.