GHENT UNIVERSITY

Course Specifications

Valid as from the academic year 2020-2021

Plant Biotic Interactions (C003097)

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 3.0 **Study time** 80 h **Contact hrs** 25.0 h

Course offerings and teaching methods in academic year 2020-2021

A (semester 2)	English	Gent	lecture	15.0 h
			excursion	3.75 h
			seminar	5.0 h
			online lecture	0.0 h
			online seminar	0.0 h

Lecturers in academic year 2020-2021

Goormachtig, Sofie	WE09	lecturer-in-charge

Offered in the following programmes in 2020-2021	**crdts**	**offering**
Master of Science in Teaching in Science and Technology (main subject Biochemistry and Biotechnology)	3	A
International Master of Science in Agro- and Environmental Nematology	3	A
Master of Science in Biochemistry and Biotechnology	3	A
Master of Science in Plant Biotechnology	3	A
Exchange programme in Biochemistry and Biotechnology (master's level)	3	A

Teaching languages

English

Keywords

Molecular Biology of pathogenic, beneficial and symbiotic interactions of plants

Position of the course

Give a state of the art of understanding of the molecular biology of those interactions (based on recent review articles), explain the multiple forms and functionalities of reciprocal adapatations and co-evolution of specialised features.

Contents

1. The immune system of plants: preformed and induced immune system: recognition of microbe, damage - associated molecular patterns, effector triggered immunity, defense outcomes. Signalling molecules and hormones in biotic interactions. Local and systemic immunity
2.Symbiotic interactions:The development of legume nodules and arbuscular mycorrhiza
3. Molecular insight in interactions with parasitic plants
4. The molecular analysis of specific study cases: specific virulence strategies and defense mechanisms in particular interactions of plant with pathogenic bacteria, fungi and oomycetes among others.

Initial competences

Basic knowledge of plant and microbial molecular biology, genetics and biochemistry

Final competences

1 Having insight in the present knowledge in this field.
2 Integrate the wider context of evolutionary and developmental processes into various aspects of plant microbe interactions.

3 Reportin in a written and oral way about plant microbe interactions.
4 Deduce concept about plant microbe interactions based on papers and experiments.
5 Have a general insight about how basic reserach can be translated into application concerning plant microbe 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, online lecture, online seminar

Extra information on the teaching methods

The various insights will be given via lectures.
Every student will get an example of a specific plant microbe interaction and will use this example as a study case for the content of the course. The examples will be used for mutual discussions and for the exam assignment.
The seminars for the courses "Plant Biotic Interactions"(C003097)," The Plant Cell" (C003098) and "Plant Growth and Development "(C003099) are planned to be organized together. For this, two visits are planned at the Max Planck Institute for Plant Breeding Research and the Jülich Plant Phenotyping Centre (JPPC) in Germany. The students will be given a research question in advance, for which they must formulate an answer during the visits. (This is subjected to the practical realization of the visits).
Because of COVID19, seminars can run in an alternative way

Learning materials and price

Notes and illustrations are available on Ufora.

References

Articles

Course content-related study coaching

Can be offered upon appointed with the lecturer

Evaluation methods

end-of-term evaluation

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

Oral examination, participation, assignment

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

Oral examination, participation, assignment

Examination methods in case of permanent evaluation

Possibilities of retake in case of permanent evaluation

not applicable

Extra information on the examination methods

The students will be evaluated about the content of the lectures as well as about the discussed articles

Calculation of the examination mark

The marks are distributed between the final assignment and seminar contribution. More info will follow on Ufora .