Course Specifications
Valid as from the academic year 2018-2019

Molecular Phytopathology (I001959)

Course
Valid as from the academic year 2018-2019
Course Specifications

Course offerings and teaching methods in academic year 2019-2020
A (semester 2)  English  practicum  15.0 h
self-reliant study activities  6.25 h
lecture  23.75 h

Lecturers in academic year 2019-2020
Höfte, Monica  LA21  lecturer-in-charge
Kyndt, Tina  LA25  co-lecturer

Offered in the following programmes in 2019-2020
crds  offering
International Master of Science in Agro- and Environmental Nematology  4  A
Master of Science in Bioscience Engineering: Cell and Gene Biotechnology  4  A

Teaching languages
English

Keywords
Plant pathogen interactions, basal and induced resistance, virulence and pathogenicity factors, bacterial pathogens, fungal pathogens, plant parasitic nematodes

Position of the course
Insight in molecular plant-pathogen interactions can lead to innovative approaches to control plant diseases and plant parasitic nematodes.

Contents
1. Introduction to the most important groups of fungal and bacterial plant pathogens
2. Introduction to the most important types of plant parasitic nematodes
3. Bacterial plant pathogens: adhesion, penetration, colonization, type III secretion, bacterial effector proteins, toxins, cell wall degrading enzymes, hormones
4. Fungal plant pathogens: fungal genomes, adhesion, penetration and colonization mechanisms, fungal effector proteins, CAMP signaling and MAP kinases, toxins, cell wall degrading enzymes, hormones
5. Plant parasitic nematodes: invasion & migration, feeding cells, cell wall degrading enzymes, plant peptide mimicks, effectors, hormones, RNAi
6. Basal and induced defense mechanisms: constitutive and inducible defense, MAMP and PAMP triggered immunity, resistance genes, signal transduction, induced resistance, plant hormones

Initial competences
Biochemistry, molecular biology, plant biology, microbiology

Final competences
1. Insight into the plant defence system.
2. Knowledge on the most important types of plant pathogens (nematodes, bacteria and fungi) and their mode of infection.

Conditions for credit contract
Access to this course unit via a credit contract is determined after successful competences assessment

(Approved)
This course unit cannot be taken via an exam contract

Teaching methods
Lecture, practicum, self-reliant study activities

Extra information on the teaching methods
Theory: oral lectures
Exercises: experiments in laboratory and greenhouse

Learning materials and price
Extra information and explanation can be obtained through email, personal contact or Minerva.

References

Course content-related study coaching
Extra information and explanation can be obtained through email, personal contact or Minerva.

Evaluation methods
end-of-term evaluation and continuous assessment

Examination methods in case of periodic evaluation during the first examination period
Written examination with open questions, oral examination

Examination methods in case of periodic evaluation during the second examination period
Written examination with open questions, oral examination

Examination methods in case of permanent evaluation
Participation, report

Possibilities of retake in case of permanent evaluation
examination during the second examination period is not possible

Extra information on the examination methods
The evaluation of the theory counts for 4/5, the permanent evaluation of the exercises for 1/5.
Students who eschew period aligned and/or non-period aligned evaluations for this course unit may be failed by the examiner.

Calculation of the examination mark