

Plant Biology (0000137)

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

Credits 3.0	Study time 90 h	Contact hrs	30.0h
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Course offerings and teaching methods in academic year 2022-2023

A (semester 1)	English	Incheon	seminar	2.5h
			lecture	15.0h
			practicum	12.5h

Lecturers in academic year 2022-2023

Depuydt, Stephen	WE09	lecturer-in-charge
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Offered in the following programmes in 2022-2023

	crdts	offering
Bachelor of Science in Environmental Technology	3	A
Bachelor of Science in Food Technology	3	A
Bachelor of Science in Molecular Biotechnology	3	A
Joint Section Bachelor of Science in Environmental Technology, Food Technology and Molecular Biotechnology	3	A

Teaching languages

English

Keywords

Evolution and Biodiversity of Plants. Histology and anatomy of major plant organs. Morphology. The plant's life cycle. Crop Biology. Plant Propagation. Introduction to plant biotechnology.

Position of the course

Plant Biology constitutes a basic course in plant biology with emphasis on biodiversity and evolution. The course gives an introduction on the anatomy, morphology (both focusing on structure and function of plant parts) and taxonomy of plants in the light of evolution and how adaptation strategies have been explored in relation to conquering land. Typical features of the major taxa are discussed, as well as underlying relationships in anatomy and morphology and potential applications for agriculture and biotechnology.

Contents

1. General evolution of plants, tree of life, role of plants in nature
 2. Histology: from cells to tissues
 3. Morphology and anatomy of the root
 4. Morphology and anatomy of the stem
 5. Morphology and anatomy of the leaf
 6. Morphology of the flower
 7. Morphology of fruits and seeds
 8. Classification, biodiversity, phylogeny and life cycle of plants (algae, non-vascular land plants, seedless vascular plants, gymnosperms, angiosperms)
 9. Crop Biology
 10. Asexual reproduction, propagation and plant biotechnology
- The practicals will illustrate important concepts in anatomy, morphology and applications of plant biology in environmental biotechnology, food biotechnology and molecular biotechnology.

Initial competences

This course demands a basic knowledge of general biology.

Final competences

- 1 To know cell, tissue and morphological structures of plants
- 2 To understand the biodiversity of plants

- 3 To know and describe the main features and life cycles of the major plant lineages, to be able to classify plants in those major lineages (taxonomy)
- 4 To know and use botanical terminology. To be able to explain this terminology to expert as well as layman's audiences.
- 5 To know and use techniques in botany and to understand the importance of plants for environmental, food technology and biotechnological applications. (via practical courses).
- 6 To understand the role of plants in nature and to appreciate and understand the necessity of plants as a cornerstone for society in terms of agriculture and biotechnological applications.

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

Practicum, Seminar, Lecture

Learning materials and price

Written syllabus and handouts of the PowerPoint slides will be provided. Syllabus of the practical exercises will be available.

References

Raven Biology of Plants, Evert and Eichhorn.

Course content-related study coaching

Weekly office hours, during which the student can pass by for more information, will be announced at the beginning of the course.

Feedback during permanent evaluation moments will be given.

Assessment moments

end-of-term and continuous assessment

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

Written examination with open questions

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

Written examination with open questions

Examination methods in case of permanent assessment

Report, Participation, Assignment

Possibilities of retake in case of permanent assessment

examination during the second examination period is not possible

Extra information on the examination methods

The understanding of structure and function of plant tissues/organs, morphology, taxonomy, life cycle and biodiversity will be assessed via open questions and figure questions in which the emphasis will be to explain broad concepts in terms of intrinsic plant structure and organization and to place this in an evolutionary context.

Calculation of the examination mark

Periodic evaluation = 16/20; non-periodic evaluation = 4/20

Students need to attend the practical sessions in order to pass the course.

Students who eschew non-period aligned evaluations for this course unit may be failed by the examiner.