

Valid as from the academic year 2016-2017

The Living World 3: Plant and Animal Biology (O000089)

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

| | | |
|--------------------|-------------------------|---------------------------|
| Credits 5.0 | Study time 150 h | Contact hrs 60.0 h |
|--------------------|-------------------------|---------------------------|

Course offerings and teaching methods in academic year 2016-2017

| | | |
|----------------|-----------|--------|
| A (semester 1) | practicum | 30.0 h |
| | lecture | 30.0 h |

Lecturers in academic year 2016-2017

| | | |
|----------------------|------|--------------------|
| Depuydt, Stephen | WE09 | lecturer-in-charge |
| Radwanska, Magdalena | CA10 | co-lecturer |

Offered in the following programmes in 2016-2017

| | crdts | offering |
|---|-------|----------|
| Bachelor of Science in Food Technology | 5 | A |
| Joint Section Bachelor of Science in Environmental Technology, Food Technology and Molecular Biotechnology | 5 | A |
| Bachelor of Science in Environmental Technology | 5 | A |
| Bachelor of Science in Molecular Biotechnology | 5 | A |

Teaching languages

English

Keywords

Evolution and biodiversity of plants, Evolution and biodiversity of animals, Tree of life, The kingdom of plants, The kingdom of animals, Taxonomy, Morphology, Anatomy, Physiology, Applications in agriculture.

Position of the course

The Living World 3 constitutes a basic course in biology with emphasis on biodiversity and adaptations of two kingdoms: Plantae (PART I, 1/3) and Animalia (PART II, 2/3). The course gives an introduction on the taxonomy, morphology and anatomy of plants and animals in the light of evolution, how large adaptation strategies have been explored in a changing physical and biological world. Typical features of the taxa are discussed, underlying relationship in anatomy and potential applications for agriculture are briefly mentioned and discussed.

Contents

PART I: Kingdom of Plants

1. General evolution and anatomy of plants. (in a, d-f; anatomy in b)
2. Classification and phylogeny of plants. (in a, d-f)
3. Autotrophic protozoa and algae (in f)
4. Morphology of flowering plants (in c)
5. Important crops for agriculture (in g)
6. An overview of plant biotechnology (in e)
7. An overview of plant diversity (in a, d-f)
 - a. Classification and phylogeny of plants
 - b. Histology: from cells to tissues
 - c. Morphology of roots, stems, leaves and flowers
 - d. Plant diversity in context of evolution: flowering plants
 - e. Plant diversity in context of evolution: gymnosperms
 - f. Plant diversity in context of evolution: land plants and algae
 - g. Crop Biology
 - h. Asexual reproduction, propagation and plant biotechnology

PART II: Kingdom of Animals

8. Animal Diversity, Systematics, and Ecology

9. Comparative Animal Anatomy and Physiology:
- Transition to Multicellularity: Porifera and Diploblastic Cnidaria and Ctenophora;
 - Triploblastic Protostomia (Lophotrochozoa): Platyhelminthes (Flat Worms), Rotifera, Nemertea (Ribbon Worms), Mollusca, Annelida (Segmented Worms);
 - Triploblastic Protostomia (Ecdysozoa): Nematoda (Round Worms), Arthropoda;
 - Triploblastic Deuterostomia: Echinodermata, Chordata (Osteichthyes, Chondrichthyes, Amphibia, Reptilia, Aves, Mammalia);
 - Human evolution.

Initial competences

This course demands a basic knowledge of biology (Living World 1 and 2).

Final competences

To have an overview of the biodiversity of plants and animals. To understand the basic taxonomy, morphology and anatomy of plants. Students gain knowledge of animal diversity, anatomy, physiology, systematics, and animal ecology. Moreover, they understand life cycles, and recognise actual living organisms and place them in the taxonomy. Students gain detailed knowledge of the anatomy of flowering plants.

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

Lecture, practicum

Learning materials and price

Part I: Written syllabus; PowerPoint slides; notes from practical exercises

Part II: PowerPoint slides from the course, notes from the practical exercises, excursions (ecology park), movies, and a textbook: Sixteenth Edition, Integrated Principles of Zoology, and Hickman et al. McGraw-Hill International Education.

References

Course content-related study coaching

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, written examination with multiple choice questions

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

Examination methods in case of permanent evaluation

Skills test, report

Possibilities of retake in case of permanent evaluation

examination during the second examination period is possible in modified form

Extra information on the examination methods

Partim 1(Plantae) and partim 2 (Animalia) will be evaluated separately. Minimum score of 50% on both partims is required to pass the exam. Participation in the practical exercises and excursions is mandatory in order to pass the course. The same counts for the submission of the report.

Calculation of the examination mark

Written examination with open questions 60%

Written examination with multiple choice questions 20%

Practical Exercises (partim plant biology and partim animal biology) 10%

Report (partim animal biology) 10%