Course Specifications
Valid as from the academic year 2020-2021

Community and Ecosystem Ecology (C003221)

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)

<table>
<thead>
<tr>
<th>Credits</th>
<th>Study time</th>
<th>Contact hrs</th>
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<tbody>
<tr>
<td>4.0</td>
<td>100 h</td>
<td>30.0 h</td>
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Course offerings and teaching methods in academic year 2020-2021

A (semester 1)  Dutch  Gent  
lecture  15.0 h  
seminar: coached exercises  15.0 h  
online seminar: practical PC room classes  0.0 h  
online lecture  0.0 h

Lecturers in academic year 2020-2021

Vyverman, Wim  WE11  lecturer-in-charge
Verleyen, Elie  WE11  co-lecturer

Offered in the following programmes in 2020-2021  
crds  offering

Bachelor of Science in Biology  4  A
Preparatory Course Master of Science in Biology  4  A

Teaching languages

Dutch

Keywords

Community, foodwebs, species richness, macro-ecology, ecosystem metabolism, biogeochemical cycles

Position of the course

Students gain insight into the nature and function of ecological communities and ecosystems.

Contents

- Nature and characteristics of communities (spatial structure, relative abundance, auto- and heterotrophs, ...);
- Predation and competition in equilibrium communities (food chains, functional groups, key species, stability, ...);
- Disturbance and non-equilibrium communities, theoretical and conceptual models, multiple stable states, ...);
- Temporal patterns (seasonal dynamics, priority effects, assembly rules, succession);
- Spatial patterns, island biogeography;
- Causes and consequences of species richness (measurement, rarity and abundance, range size and abundance, richness gradients, local and regional diversity, ...);
- Ecosystems (concepts, primary and secondary production, decomposition, nutrient cycling, relationships diversity and ecosystem processes);
- Biogeochemical cycles

Initial competences

The course builds on ecological and biogeographical concepts taught during Bachelor 1 and 2.

Final competences

1. The student masters the main principles, concepts and terminology of community and ecosystem ecology and appreciates the relevance of these disciplines for current ecological problems.
2. He is aware of a variety of techniques used to study natural communities, and has an
open mind to novel methodological developments in this area of research.

3 He is capable of quantitatively assessing community diversity from raw datasets on species composition and abundance, comparing this diversity to that of other communities, and interpreting this information.

4 He is also capable of critically reading, and comprehensively presenting to a diverse audience, important recent literature in this scientific domain.

5 He shows a critical and open attitude with respect to current environmental issues, and is not afraid to enter discussions on these topics.

6 He appreciates the complex relationships between species diversity and essential ecosystem processes, and understands the underlying mechanisms. He can thus take position in discussions on nature conservation issues. He understands fundamental aspects of global cycles of the most important elements and of the roles of communities and ecosystems in the cycles. Hence, he is capable of developing a critical opinion on the consequences of anthropogenic impacts (eutrophication, global warming...) on ecosystems.

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
Group work, lecture, seminar: coached exercises, online group work, online lecture, online seminar, online seminar: practical PC room classes

Learning materials and price
Syllabus available, ppt slides of lectures are available through Minerva Cost: 15 EUR

References

Course content-related study coaching
During practical classes, topics introduced during the lectures are studied in further detail using the primary literature, concepts are illustrated using experiments and calculus exercises. During these classes, students can pose general questions on the course’s content.

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

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

Examination methods in case of permanent evaluation
Oral examination, job performance assessment, peer assessment, 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
Non-periodical evaluation: 1st examination period: individual paper and integrated paper written by the group. Peer-evaluation of the paper written by other students. Evaluation of questions and answers on these papers.
2nd examination period: it can be asked to produce a new scientific report based on home study of scientific papers.

Calculation of the examination mark
Periodical evaluation (75%) + non-periodical evaluation (25%).
For the second examination chance, an evaluation can be organised in modified format.
Students need to pass for both periodical and non-periodical evaluation in order to pass
for this course. In case a student fails for one of both parts, a maximum score of 9/20 can be obtained.