

Course Specifications

From the academic year 2016-2017 up to and including the

Course size (nominal values; actual values may depend on programme)
Credits 5.0 Study time 150 h Contact hrs 40.0 h

Course offerings and teaching methods in academic year 2018-2019

A (semester 1)	English	fieldwork	7.5 h
		integration seminar	2.5 h
		seminar: coached	7.5 h
		exercises	
		lecture	20.0 h
		project	2.5 h

Lecturers in academic year 2018-2019

Bonte, Dries	WE11	lecturer-in-charge
Vanreusel, Ann	WE11	co-lecturer

Offered in the following programmes in 2018-2019

	crdts	offering
Master of Science in Biology	5	A
Exchange Programme in Biology (master's level)	5	A

Teaching languages

English

Keywords

Spatial structure, Habitat fragmentation, species distribution, diversity, metapopulations and metacommunities, dispersal, ecology and evolution, geographic mosaics of coevolution

Position of the course

The course on spatial ecology has as aim to understand the principal ecological and evolutionary processes that affect the spatial distribution of genes, populations and species. The students will acquire insights in the theoretical backgrounds, and the mechanisms affecting the distribution of biological diversity. Students will be introduced to the principle modelling concepts and learn to link spatial processes to ecological applications of direct relevance in the society like habitat fragmentation, urban planning, biological invasions in both marine and terrestrial ecosystems.

Contents

- A. Theoretical background
 - from spatial ecology to landscape ecology
 - ecology and evolution of dispersal
 - single species dynamics in spatially structured habitats
 - from metapopulations to metacommunities
 - competition in a spatially structured environment
 - Evolutionary dynamics in spatially structured environments
- B. Connectivity conservation
 - marine environments
 - terrestrial environments

Initial competences

Principles of population ecology and mathematical analytical methods

Final competences

- 1 Acquire advanced insights into the theoretical concepts of spatial ecology.
- 2 Translate spatial ecological concepts to ecological applications.

3 Develop and apply spatial ecological and evolutionary models.

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, integration seminar, project, fieldwork, seminar: coached exercises

Learning materials and price

Delivered course material by teachers via Minerva

References

Collinge. 2009. Ecology of fragmented landscapes
Clobert et al. 2012. Dispersal ecology and evolution.
Tilman. 1997. Spatial Ecology
Hanski & Gaggiotti. 2004. Ecology, genetics and evolution of metapopulations
Holeyoak et al. 2005. Metacommunities: Spatial Dynamics and Ecological Communities
Thompson 2005. The geographic mosaic of coëvolution

Course content-related study coaching

Evaluation methods

end-of-term evaluation

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

Written examination with open questions, report

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

Written examination with open questions, report

Examination methods in case of permanent evaluation

Possibilities of retake in case of permanent evaluation

not applicable

Extra information on the examination methods

report: PVA project

Calculation of the examination mark

80% examination, 20% evaluation individual project