

# Course Specifications

Valid as from the academic year 2019-2020

## Spatial Ecology (C003321)

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)  
Credits 5.0 Study time 150 h Contact hrs 40.0 h

### Course offerings and teaching methods in academic year 2020-2021

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

### Lecturers in academic year 2020-2021

Bonte, Dries	WE11	lecturer-in-charge
Van Colen, Carl	WE11	co-lecturer

### Offered in the following programmes in 2020-2021

	crdts	offering
<a href="#">Master of Science in Teaching in Science and Technology (main subject Biology)</a>	5	A
<a href="#">Master of Science in Biology</a>	5	A
<a href="#">Exchange Programme in Biology (master's level)</a>	5	A

### Teaching languages

English

### Keywords

Spatial structure, Habitat fragmentation, species distribution, diversity, metapopulations and metacommunities, dispersal, ecology and evolution, geographic mosaic 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 Ufora

#### 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