

## Population Ecology (C002241)

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

**Credits 4.0**

**Study time 110 h**

**Course offerings and teaching methods in academic year 2023-2024**

A (semester 1)

Dutch

Gent

lecture

seminar

**Lecturers in academic year 2023-2024**

Lens, Luc

WE11

lecturer-in-charge

Strubbe, Diederik

WE11

co-lecturer

**Offered in the following programmes in 2023-2024**

[Bachelor of Science in Biology](#)

**crdts**

4

**offering**

A

[Master of Science in Bioinformatics\(main subject Systems Biology\)](#)

4

A

[Preparatory Course Master of Science in Biology](#)

4

A

**Teaching languages**

Dutch

**Keywords**

Population numbers, population growth, demography, interactions, spatial structure, exploitation

**Position of the course**

Students gain insight into underlying processes that determine the functioning of natural populations. This is achieved through the study of theoretical models and applied case studies.

**Contents**

The course consists of the following chapters: estimation of population numbers, population growth, demography, competition, predation, parasitism, spatially-structured populations, exploited populations. Focus is both on the development of theoretical models (e.g. capture-recapture models, growth models, Lotka-Volterra models, SI-model, Incidence Function model, dynamic pool model) and on their use in particular case studies.

**Initial competences**

Be able to define ecological concepts in a scientifically sound way; be able to identify and analyze simple ecological problems; be able to apply simple infinitesimal analytic tools.

**Final competences**

- 1 To report on the basic concepts underlying the functioning of natural populations in accurate scientific language.
- 2 To explain population-ecological models and assess their applicability.
- 3 To apply population-ecological models in ecological problem-solving.
- 4 To understand the interface between population ecology and other biological disciplines.

**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**

Seminar, Lecture

**Extra information on the teaching methods**

because of COVID19 modified forms of work may be implemented when necessary

### **Learning materials and price**

Free syllabus available

### **References**

Alstad, D.N. 2001. Basic Populus Models of Ecology. Prentice-Hall, Inc. NJ. (ISBN 0-13-021289-X)

Krebs, C.J. 2001. Ecology: the experimental analysis of distribution and abundance (5th Ed). Benjamin Cummings, NY (ISBN 0-321-04289-1)

### **Course content-related study coaching**

During practical classes, population ecological concepts are illustrated with practical examples.

During these classes, students can pose general questions on the course's content.

### **Assessment moments**

end-of-term assessment

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

Oral assessment, Written assessment

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

Oral assessment, Written assessment

### **Examination methods in case of permanent assessment**

### **Possibilities of retake in case of permanent assessment**

not applicable

### **Extra information on the examination methods**

Practicals: written

Theory: oral examination with written preparation. Students are evaluated on their knowledge of population-ecological concepts and insight into ecological modeling.

### **Calculation of the examination mark**

Theory 60% ; practicals 40 %