

## Behavioural Ecology (C003324)

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

**Credits 4.0**

**Study time 120 h**

### Course offerings and teaching methods in academic year 2024-2025

A (semester 2)

English

Gent

lecture

group work

independent work

### Lecturers in academic year 2024-2025

Mitchell, Lucy

WE11

lecturer-in-charge

Batsleer, Femke

WE11

co-lecturer

Lens, Luc

WE11

co-lecturer

Strubbe, Diederik

WE11

co-lecturer

### Offered in the following programmes in 2024-2025

[Bachelor of Science in Psychology\(main subject Theoretical and Experimental Psychology\)](#)

**crdts**

4

**offering**

A

[Master of Science in Teaching in Science and Technology\(main subject Biology\)](#)

4

A

[Master of Science in Biology](#)

4

A

[Exchange Programme in Biology \(master's level\)](#)

4

A

### Teaching languages

English

### Keywords

life-history trade-offs and strategies, communication and signalling, cooperation and conflicts, sexual selection, mating systems, optimality models, game theory

### Position of the course

The course provides insights into how evolution through natural selection shapes the behaviour of animals. The course includes the acquisition of theoretical and practical knowledge and understanding of the basic concepts of behavioural ecology in an evolutionary context. The course also aims at gaining insights in the use of state-of-the-art research methodologies in behavioural ecology studies.

### Contents

#### I. BEHAVIOURAL ECOLOGY: AN EVOLUTIONARY APPROACH

1. Foundations
2. Decision theory and cognition
3. Testing hypotheses in behavioural ecology

#### II. ECOLOGY OF BEHAVIOUR

4. Foraging theory
5. Managing risk: the perils of uncertainty

#### III. SOCIAL BEHAVIOUR

6. Communication and signalling
7. Contest Behaviour
8. Living in groups

#### IV. REPRODUCTIVE BEHAVIOUR

9. Altruism and Cooperation
10. Eusociality: the evolution of complex societies
11. Sexual selection
12. Postcopulatory sexual selection
13. Mate choice

14. Sexual conflict
15. Mating systems
16. Parental care
- V. EXTENSIONS (optional)
17. Behavioural syndromes
18. Cultural evolution

### **Initial competences**

Knowledge of general concepts in biology is strongly recommended. The student has mastered the core concepts of the courses evolution, general ecology and population ecology.

### **Final competences**

- 1 The student knows the important developments in the domain of behavioural ecology.
- 2 The student has profound insights in the processes underlying individual behavior, social behavior and reproductive behavior, and is able to apply these insights in an independent literature study.

### **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, Independent work

### **Extra information on the teaching methods**

The course is mainly transmitted through lectures. Theoretical concepts will be illustrated with examples and plenary exercises.

The self-reliant assignment (3 to 4 students/group) consists of critical reading and discussing a behavioural ecology case study.

### **Study material**

Type: Handbook

Name: An Introduction to Behavioural Ecology, 4th Edition Nicholas B. Davies, John R. Krebs, Stuart A. West

Indicative price: € 56

Optional: yes

Author : Nicholas B. Davies, John R. Krebs, Stuart A. West

ISBN : 978-1-40511-416-5

Number of Pages : 528

Online Available : Yes

Available in the Library : Yes

Additional information: Book gives more background info but all necessary information can be obtained from the slides and other course material as well

### **References**

- An Introduction to Behavioural Ecology. 4th Edition. 2012.  
Davies, N.B., Krebs, J.R. and West S.A. Wiley-Blackwell
- Behavioural Ecology: An Evolutionary Perspective on Behaviour. 2008.  
Danchin, E., Giraldeau, L.A., Cézilly, F. Oxford University Press.
- Evolutionary Behavioral Ecology. 2010.  
Westneat, D.F., Fox, C.W. Oxford University Press

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

Questions about the course are treated during the lectures themselves (interactive education), after class, via email or by appointment.

All lecture slides used in class are available on the internet (Ufora). Scientific articles that are brought into play to illustrate theoretical concepts are also available on Ufora as background information.

### **Assessment moments**

end-of-term assessment

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

Oral assessment, Written assessment with open-ended questions, Assignment

(Approved)

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

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

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

not applicable

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

Oral exam with written preparation

## **Calculation of the examination mark**

- Written examination with oral feedback (70%)
- Self-reliant Assignment, written report (15%). Note that the use of AI is allowed for this report. It can be especially useful to increase the grammatical quality of the text. AI can also be used to generate potential ideas you can develop further by consulting and checking against scientific literature yourself.
- Self-reliant Assignment, oral feedback (7.5%).
- Self-reliant Assignment, peer assessment (7.5%)