GHENT UNIVERSITY

Course Specifications

Valid as from the academic year 2025-2026

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 2025-2026

A (semester 2)	English	Gent	lecture
			independent work
			group work

Lecturers in academic year 2025-2026

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 2025-2026	crdts	offering
Bachelor of Science in Psychology(main subject Theoretical and Experimental Psychology)	4	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
Exchange Programme in Psychology	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-to-the-art research methodologies in behavioural ecology studies.

Contents

I. BEHAVIOURAL ECOLOGY: AN EVOLUTIONARY APPROACH
1. Foundations
2. Testing hypotheses in behavioural ecology
3. Decision theory and cognition
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
9. Altruism and Cooperation
10. Eusociality: the evolution of complex societies
IV. REPRODUCTIVE BEHAVIOUR
11. Sexual selection
12. Postcopulatory sexual selection

13. Mate choice
14. Sexual conflict
15. Mating systems
16. Parental care

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 methods used, and important developments in the domain of behavioural ecology.
2 The student can describe the processes underlying individual behavior, social behavior and reproductive behavior, and is able to apply these insights to case studies.

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

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 (60%)
- Self-reliant Assignment, written report (25%). 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%)