

Course Specifications

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

Behavioural Ecology (C003324)

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

Credits 4.0 Study time 120 h Contact hrs 45.0 h

Course offerings and teaching methods in academic year 2018-2019

A (semester 2)	English	lecture: plenary	2.5 h
		exercises	
		lecture	22.5 h
		self-reliant study	5.0 h
		activities	
		group work	5.0 h

Lecturers in academic year 2018-2019

Strubbe, Diederik	WE11	lecturer-in-charge
Lens, Luc	WE11	co-lecturer

Offered in the following programmes in 2018-2019

	crdts	offering
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-to-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
 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
- 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, self-reliant study activities, lecture: plenary exercises

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 (1 - 3 students/group) consists of critical reading and discussing a behavioural ecology case study.

Learning materials and price

Powerpoint presentations available on Minerva. A handbook will be recommended.

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 (Minerva). Scientific articles that are brought into play to illustrate theoretical concepts are also available on Minerva as background information.

Evaluation methods

end-of-term evaluation

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

Written examination with open questions, oral examination, assignment

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

Examination methods in case of permanent evaluation

Possibilities of retake in case of permanent evaluation

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%)
- Self-reliant Assignment, oral feedback (15%)