

REG 21306

# Introduction to Animal Ecology

Period 6

**Contact person**

Frank van Langevelde

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## **Introduction to Animal Ecology (REG 21306)**

<b>Language</b>	English
<b>Credits</b>	6
<b>Period</b>	6, Weeks 37 – 41 (only Monday)
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<b>Lecturer(s)</b>	Joost de Jong, MSc Prof. Marc Naguib Dr. Filipe Cunha Prof. Tinka Murk Dr. Reindert Nijland Dr. Ronald Osinga Dr. Frank van Langevelde
<b>Examiner(s)</b>	Dr. Frank van Langevelde Prof. Marc Naguib Prof. Tinka Murk
<b>Secretariat</b>	Patricia Meijer; Lumen B.109; 0317 485828

## Profile of the course

The course provides an introduction to animal ecology. The knowledge of this course is the basis for managing healthy population of animals in the wild as well as of animals living in captivity for production, companion and recreation. The focus of this course is on the interactions between animals and their abiotic and biotic environment. We will discuss theory and demonstrate cases on evolution, ecophysiology, migration, social organisation, communication, population dynamics, food webs, communities and adaptations of animals to the (sometimes extreme) environment. Attention will be given to the distribution of the resources for animals and the landscape in which animals find their home range. The focus of the course will be on terrestrial and marine vertebrate species..

The main target student group is students from BDW.

## Learning outcomes

- Explain the relationships between animals and their environment and the adaptations of animals to different or changing environments
- Summarize the mechanisms that drive developments of animal populations
- Identify the role of animals in food webs
- Apply simple statistical and mathematical models in animal ecology
- Analyse, write a paper, review papers and present a subject related to animal ecology

## Course materials and resources

We use the book 'Essentials of Ecology, fourth edition' written by Begon, Howarth and Townsend (2014, Wiley)

We use the website '<http://www.introanimalecology.com/>', which provides:

- Hand-outs of the lectures
- Recordings of the lectures
- Additional literature as background information
- Materials for the tutorials

Besides, we use BlackBoard.

## Educational activities

Ecological principles applied to animals are studied using the book 'Essentials of Ecology', which are explained and illustrated by lectures and practised during tutorials and online self-tests. Part of the tutorials are web-based and aim at improving the quantitative skills of students, and the other part is based on discussion. Animal ecology will be illustrated by a visit to Burgers' Zoo and National Park Hoge Veluwe. The knowledge presented during the lectures will be applied in writing an individual paper on a timely subject related to animal ecology.

## Assessment strategy

- Digital exam (60%)
- Excursion (10%)
- Individual paper (30%)

Each component needs a minimum mark of 5.5 to pass.

## Course schedule

The course consists of lectures, tutorials related to some lectures, field visits and the individual project.

Week 1				
14-May	15-May	16-May	17-May	18-May
Intro & Lecture 1 (8:30-10:15h, C0063)	Excursion Burgers' Zoo	Lecture 3 (10:30-11:15h, C1040)	Lecture 5 (10:30-11:15h, C0763)	Follow up excursion (8:30-17:15h, PC303)
Self study		Tutorial 2 (11:30-13:00h, C1040)	Tutorial 3 (11:30-13:00h, PC612)	
Lecture 2 (14:30-15:15h, C1040)		Lecture 4 (13:30-14:15h, C1040)	Lecture 6 (13:30-14:15h, C1040)	
Tutorial 1 (15:30-18:00h, PC303)		Self study	Self test	

Week 2				
21-May	22-May	23-May	24-May	25-May
Pentecost	Lecture 7 (9:30-10:15h, C1040)	Lecture 9 (9:30-10:15h, C1040)	Lecture 11 (9:30-10:15h, C0763)	Self study
	Tutorial 4 (10:30-12:15h, PC053)	Tutorial 6 (10:30-12:15h, PC303)	Tutorial 7 (10:30-12:15h, PC303)	
	Lecture 8 (14:30-15:15h, C1040)	Lecture 10 (13:30-14:15h, C1040)	Lecture 12 (13:30-14:15h, C0763)	
	Tutorial 5 (15:30-18:00h, PC405)	Self study	Self test	Excursion Hoge Veluwe (not compulsory)

Week 3				
28-May	29-May	30-May	31-May	1-Jun
Individual project (8:30-17:15h, PC303)	Lectures 13 + 14 (8:30-10:15h, C1040)	Lectures 15 + 16 (8:30-10:15h, C1040)	Lecture 18 (8:30-9:15h, C1040)	Self study
	Self study	Individual project (10:30-12:15h, C1032)	Tutorial 9 (9:30-12:15h, C1040)	
		Lecture 17 (13:30-14:15h, C1040)	Self study	
		Tutorial 8 (14:30-17:15h, C1040)	Self test	

Week 4				
4-Jun	5-Jun	6-Jun	7-Jun	8-Jun
Self study	Individual project (8:30-17:15h, PC001)	Individual project (8:30-17:15h, PC062 + PC071)	Individual project (13:30-17:15h, G1047 + G1048 + G3041 + G4034 +G4035)	Individual project (13:30-14:15h, C2030)
Exam (13:30-16:30h, PC4007 + PC4051)				

Week 5
11-Jun
Individual project
Individual project Poster presentation (13:30-17:15h, C3043 + C4014 + C4015)

### Topics (chapter & pages from the book)

- Lecture 1: Introduction & What is animal ecology? (Ch. 1: pp. 3-27)
- Lecture 2 and Tutorial 1: Evolutionary ecology (Ch. 2: pp. 28-53 & Ch. 8.1: 217-226)
- Lecture 3 and Tutorial 2: Ecophysiology 1 (Ch. 3: pp. 58-90)
- Lecture 4: Ecophysiology 2 (Ch. 3: pp. 58-90)
- Lecture 5 and Tutorial 3: Theory on predation (Ch. 7: pp. 183-215)
- Lecture 6: Life history theory (Ch. 5: pp. 124-153)
- Lecture 7 and Tutorial 4: Theory on social organisation and communication (-)
- Lecture 8 and Tutorial 5: Population ecology 1 (Ch. 5: pp. 124-153)
- Lecture 9 and Tutorial 6: Theory on competition (Ch. 6: pp. 154-184)
- Lecture 10: Foraging ecology (Ch. 7: pp. 183-215)
- Lecture 11 and Tutorial 7: Theory on migration (Ch. 5: pp. 124-153)
- Lecture 12: Disease ecology (Ch. 7: pp. 183-215, Ch. 8.2: pp. 226-231)
- Lecture 13: Community ecology 1 (Ch. 4 (except 4.3): pp. 92-108 + 113-120)
- Lecture 14: Community ecology 2 (Ch. 10: pp. 286-291)
- Lecture 15: Population ecology 2 (Ch. 9.1: pp. 246-255)
- Lecture 16: Human populations and ecology (Ch. 14: 407-440)
- Lecture 17 and Tutorial 8: Food web ecology (Ch. 9.4: pp. 269-280, Ch. 11.1: pp. 310-311, Ch. 11.5+11.6: pp. 325-332)
- Lecture 18 and Tutorial 9: Conservation ecology (Ch. 9.2: pp. 255-259, Ch. 13: pp. 370-405)

Note that several lectures can deal with the same chapter (e.g. lectures 5, 10 and 12 are all based on chapter 7).