UCLouvain

# lboe2161

*2026*

# Behavioral ecology and sociobiology

| 4.00 credits | 30.0 h + 15.0 h | Q2 |
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| Teacher(s) | Van Dyck Hans ; |
| Language : | French |
| Place of the course | Louvain-la-Neuve |
| Prerequisites | The student has a basic knowledge of ecology and evolutionary biology. |
| Main themes | Ethology, proximate and ultimate explanations of behaviour, instincs and learning, personality, life styles, social systems and associated behaviours |
| Learning outcomes | **At the end of this learning unit, the student is able to :**<br><br>1 **Contribution of the teaching unit to the program's AA reference framework**<br>In line with the BOE2M program's competency framework, this teaching unit contributes to the development and acquisition of the following skills:<br>1, 2, 3, 5<br><br>2 **Course-specific learning outcomes :**<br>The student masters advanced knowledge in behavioural ecology and sociobiology, including i) the history of ethology and behavioural ecology, ii) instincts and different types of learning, iii) the importance of animal personalities, iv) optimality and game theory to explain animal behaviour, v) the evolution of animal behaviour in a social context. The student is able to discuss and evaluate with a critical mind relevant scientific theory and applied observational and experimental methods in behavioural biology. The student is able to develop and perform a behavioural study to address a specific hypothesis with observational and/or experimental data. |
| Evaluation methods | There is a written exam on the theoretical part of the lectures with open questions (comprehension questions).<br>For the practical course, the student has to prepare a report according to our guidelines.<br>The theoretical exam counts for 70% of the final mark, the report for 30%. |
| Teaching methods | This teaching unit has two parts:<br>1) There are lectures based on a series of PowerPoint presentations with frequent discussions with the students.<br>2) There is a practical part (TP) in which students are trained to observe animals and score behavioural traits.<br>The slides of the lectures and PDFs of relevant papers are available on the Moodle website of this course, and that is also true for all relevant information for the practicum. |
| Content | This teaching unit focuses on the analysis and understanding of the approaches of behavioural ecology and sociobiology (i.e. the study of social behaviour). So, we will deal with the study of individual and social animal behaviour in their natural environments addressing both proximate causes (physiological causation and ontogeny) and ultimate (adaptive value and evolution). Attention is given to a conceptual understanding of animal behaviour, but in the practical part of the course (TP), students have to train their skills to make observations and score behaviours.<br>The topics that are covered in the lectures include:<br>1. The history of behavioural ecology and sociobiology;<br>2. Basic concepts and approaches to explain proximate and ultimate causes of behaviour<br>3. Development of behavioural phenotypes<br>4. Animal personality<br>5. Learning and cognition<br>6. Habitat selection and foraging behaviours (e.g. optimal foraging theory)<br>7. Sexual and reproductive behaviours<br>8. Social behaviours, communication, social mutualism and parasitism<br>9. Behaviour and conservation |
| Inline resources | Moodle website |

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| Faculty or entity in charge | BIOL |

## Programmes containing this learning unit (UE)

| Program title | Acronym | Credits | Prerequisite | Learning outcomes |
|---|---|---|---|---|
| Master [120] in Biology of Organisms and Ecology | BOE2M | 4 | | |
| Master [60] in Biology | BIOL2M1 | 4 | | |
| Master [120] in Geography : General | GEOG2M | 4 | | |
| Master [120] of Education, Section 4 : Biology | BIOL2M4 | 4 | | |
| Master [120] of Education, Section 4 : Geography | GEOG2M4 | 4 | | |