

Functional Abiotic Interactions: Animals (C004532)

Cursusomvang *(nominale waarden; effectieve waarden kunnen verschillen per opleiding)*

Studiepunten 3.0 **Studietijd 90 u**

Aanbodsessies in academiejaar 2025-2026

A (semester 1) Engels Gent

Lesgevers in academiejaar 2025-2026

Braeckman, Bart WE11 Verantwoordelijk lesgever

Aangeboden in onderstaande opleidingen in 2025-2026

	stptn	aanbodsessie
Master of Science in Biology	3	A
Uitwisselingsprogramma biologie (niveau master)	3	A

Onderwijstalen

Engels

Trefwoorden

animals, physiology, temperature, salinity, stress, navigation

Situering

The central theme of this course is the interaction of animals with their abiotic environment. By using the knowledge acquired in the course animal physiology, the students will gain deeper insight in how an animal copes with fluctuating and extreme environmental factors. A physiological approach will be used, but underlying molecular and evolutionary aspects will receive attention as well. The student will gain insight in the links between physiological adaptation, ecology and biodiversity.

Inhoud

Animal interactions with the environment:

- Temperature (temperature effects, thermobiology, thermoregulation)
- Water balance, osmoregulation and excretion
- Extreme marine environments
- Extreme terrestrial environments
- Physiological orientation and navigation systems

Practicals: During a few practicals, students will have the opportunity to perform experiments on invertebrates and analyses physiological parameters as a function of fluctuations in the abiotic environment.

Begincompetenties

Successful completion of Cell Biology, Biochemistry, Animal Physiology or having obtained the competences stated in these courses in another way.

Eindcompetenties

- 1 To interpret the relevance of the natural interactions between the abiotic components temperature and osmolarity in animals.
- 2 To identify and qualitatively describe the thermal relations between animals and their environment.
- 3 To situate the thermal relations of animals and their environment at different spatial and temporal scales (from acute responses to evolutionary adaptations, from biochemical effects to changes with respect to the whole individual).
- 4 To explain the thermal strategies of ecto- and endotherms.
- 5 To explain osmotic strategies employed by terrestrial, limnetic and marine

species.

6 To understand the basic principles of animal navigation and orientation.

7 To be able to carry out ecophysiological experiments, to accurately gather and process data, to interpret results and to write up a short report.

Creditcontractvoorwaarde

Toelating tot dit opleidingsonderdeel via creditcontract is mogelijk na gunstige beoordeling van de competenties

Examencontractvoorwaarde

Dit opleidingsonderdeel kan niet via examencontract gevolgd worden

Didactische werkvormen

Werkcollege, Hoorcollege

Studiemateriaal

Type: Syllabus

Naam: Syllabus Functional abiotic interactions - Part Animals

Richtprijs: € 20

Optioneel: nee

Referenties

- Willmer, Stone and Johnston (2004) Environmental Physiology of Animals. Wiley. (ISBN: 1405107243, 9781405107242)
- Hill, Wyse and Anderson (2023) Animal Physiology. Oxford University Press. (ISBN: 9781605357379, 1605357375)

Vakinhoudelijke studiebegeleiding

Questions can be raised at all time during the lectures, the excursion or via the Ufora forum.

Evaluatiemomenten

periodegebonden en niet-periodegebonden evaluatie

Evaluatievormen bij periodegebonden evaluatie in de eerste examenperiode

Mondelinge evaluatie, Schriftelijke evaluatie

Evaluatievormen bij periodegebonden evaluatie in de tweede examenperiode

Mondelinge evaluatie, Schriftelijke evaluatie

Evaluatievormen bij niet-periodegebonden evaluatie

Participatie, Werkstuk

Tweede examenkans in geval van niet-periodegebonden evaluatie

Examen in de tweede examenperiode is enkel mogelijk in gewijzigde vorm

Toelichtingen bij de evaluatievormen

Periodical evaluation: open questions (oral with written preparation), terminology and multiple choice (written).

Eindscoreberekening

Periodical evaluation (80%)

Non-periodical evaluation (20%).

The marks for the permanent evaluation are again taken into account in the second examination period.