

Course Specifications

Valid as from the academic year 2019-2020

Insect Physiology (C002770)

Due to Covid 19, the education and evaluation methods may vary from the information displayed in the schedules and course details. Any changes will be communicated on Ufora.

Course size (nominal values; actual values may depend on programme)
Credits 5.0 Study time 135 h Contact hrs 37.0 h

Course offerings and teaching methods in academic year 2020-2021

A (semester 1)	Dutch	Gent	lecture	15.0 h
			excursion	10.0 h
			practicum	12.5 h

Lecturers in academic year 2020-2021

de Graaf, Dirk WE10 lecturer-in-charge

Offered in the following programmes in 2020-2021

	crdts	offering
Master of Science in Teaching in Science and Technology (main subject Biology)	5	A
Master of Science in Biology	5	A

Teaching languages

Dutch

Keywords

Insects, physiology, external environment, metabolism, resistance

Position of the course

Only students who have studied during their bachelor degree the general "system"-physiology of insects, comparatively with other animals, are allowed to start with this course. Specific domains where insects show special characteristics will be described and studied. Model organisms from different insect genera will be chosen, to illustrate the physiological capacities of insects.

Contents

Starting with the physiology of ontogeny (biology, reproduction, endocrinology, development and aging), the insect and the external environment (chemoreception, pheromones, visual systems, mechanoreception, sound production, bioluminescence) and the locomotion (+ migration) in his environment (land, water and air...) will be studied. The second chapter will handle on the insect and the Internal Environment, starting with the neural integration and the pharmacology of the insect nervous system (+ endocrinology). On this basis the description and study of the biological oxidations and energetics can be carried out, in relation to protein synthesis, nutrition, digestion, hemolymph composition and osmoregulation. The third part describes the fundamental physiology of insecticide resistance, and their defence mechanisms against pathogens, parasites and predators.

Initial competences

Having followed with success the training parts Bachelor in the biology or Bachelor in the biochemistry or the biotechnology

Final competences

To have knowledge of the physiology of insects in all its aspects.

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

Excursion, lecture, practicum

Extra information on the teaching methods

Plant visits

Learning materials and price

PowerPoint presentations can be consulted on Ufora.

References

Physiological Systems in Insects, Ed. Marc J. Klowden (Second Edition; ISBN: 978-0-12-369493-5)

Course content-related study coaching

Personally: by electronic appointment

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

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

Written examination with open questions, oral examination

Examination methods in case of permanent evaluation

Possibilities of retake in case of permanent evaluation

not applicable

Extra information on the examination methods

Written and oral evaluation (with written preparation)

Calculation of the examination mark