

Diversity of Aquatic Nematodes (C003676)

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 6.0 Study time 180 h Contact hrs 60.0 h

Course offerings and teaching methods in academic year 2020-2021

A (semester 1)	English	Gent	practicum	25.0 h
			lecture	20.0 h
			demonstration	5.0 h

Lecturers in academic year 2020-2021

Vanreusel, Ann	WE11	lecturer-in-charge
Bert, Wim	WE11	co-lecturer
Campinas Bezerra, Tânia	WE11	co-lecturer
Smol, Nicole	WE11	co-lecturer

Offered in the following programmes in 2020-2021

	crdts	offering
International Master of Science in Agro- and Environmental Nematology	6	A

Teaching languages

English

Keywords

Morphology, systematics, Chromadoria, Enoplia, freshwater, marine

Position of the course

This course is given in the second semester of the first year after the students acquired the knowledge of general morphology and systematics of nematodes. It is part of the module Nematology applied to natural ecosystems and Nematode Systematics. Acquiring an overview of the morphological diversity of the taxa Chromadoria and Enoplia and other taxa occurring in freshwater habitats and discusses with understanding of the phylogenetic relationships. Develop expertise in identification of the aquatic nematodes up to genus and species level

Contents

- Basic principles of phylogeny
Presentation of the systematics of Chromadoria and Enoplia according to Lorenzen (1981, 1994), updated with the latest results based on molecular techniques.
- Overview of the most frequent freshwater genera.
- Review of the most important morphological characters with demonstration.
- The practical exercises consist of recognizing the identification characters and the use of the pictorial keys for identification to genus level, as well as the differential characters for identification to species level.
- The students must describe and draw two different species belonging to different families of the Chromadoria and Enoplia respectively and present the description in the format of a paper to be sent for publication.
- The students learn to use the database NEMYS and the Darwin Nematode Key
- At the end of the practical lab sessions the students present their descriptions, and the manuscripts are compared and discussed among the students.

Initial competences

General morphology of nematodes has to be known as well as the high level taxonomy.

As such the course is build on the fundamentals given in "General Morphology" and "Systematics and molecular phylogeny".

Final competences

- 1 The students understand the knowledge the morphological plasticity of all characteristics of aquatic nematodes.
- 2 The student is able to make a detailed morphological study and description, including a drawing of a nematode species.
- 3 The student is able to use the databases.
- 4 The students has obtained a framework for independent research in taxonomy and systematics of free-living aquatic nematodes and a basis for ecological research.

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

Demonstration, lecture, practicum, seminar: coached exercises

Learning materials and price

Materials: nematode slides from the nematode collection with the most important genera as study material; each student has a microscope with camera lucida for the study of the light microscopic morphology.

"Pictorial key" van Warwick & Platt (1998), CD-ROMs Darwin Nematode Key Species, the electronic MEMYS-database, and genera files from the nematode library, publications with species and genus descriptions. Geraamde totaalprijs: 10 EUR

References

Lorenzen, S. 1994: The Phylogenetic Systematics of Free-living Nematodes.
De Ley, P. & Blaxter, M. 2002 : Systematic position and phylogeny.

Course content-related study coaching

Lectures and practicals by Nic Smol, Wilfrida Decraemer, Dominick Verschelde, and Aldo Zullini

Evaluation methods

end-of-term evaluation

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

Written examination with open questions, open book examination, skills test

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

Written examination with open questions, open book examination, skills test

Examination methods in case of permanent evaluation

Possibilities of retake in case of permanent evaluation

not applicable

Extra information on the examination methods

The insights in the overall morphology of Chromadorea and Enoplia can only be generated at the end of the course; therefore the evaluation takes place of both the theoretical and practical aspects at the end of the session by means of the determination and description of unidentified material.

Calculation of the examination mark

The theoretical part (50%) is examined by means of a written exam; the practical part (50%) = identification up to genus level with the aid of the pictorial keys. In the perspectives of the final objectives of the Nematology Training, this 'open book' examination method provides a good view of the ability of the student of his understanding of the taxa, and his skills to use identification keys and identify taxa.