

Taxonomy and Systematics (C003310)

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 4.0 Study time 120 h Contact hrs 45.5 h

Course offerings and teaching methods in academic year 2020-2021

A (semester 1)	English	Gent	microteaching	7.5 h
			practicum	6.25 h
			lecture	22.5 h
			excursion	8.75 h

Lecturers in academic year 2020-2021

Sabbe, Koen	WE11	lecturer-in-charge
Leliaert, Frédéric	WE11	co-lecturer
Verbeken, Annemieke	WE11	co-lecturer
Willems, Anne	WE10	co-lecturer

Offered in the following programmes in 2020-2021

	crdts	offering
Master of Science in Teaching in Science and Technology (main subject Biology)	4	A
Master of Science in Biology	4	A
Exchange Programme in Biology (master's level)	4	A

Teaching languages

English

Keywords

Taxonomy, systematics, DNA barcoding, species delineation, nomenclature, biodiversity informatics

Position of the course

This course aims at familiarizing the student with all aspects of contemporary research on nomenclature, taxonomy and systematics, and builds on previous courses dealing with the biodiversity of living organisms. The course feeds into the course Individual Biodiversity Research Project.

Contents

General introduction: the nature, role and importance of historical and contemporary taxonomic research.
Species delineation: species concepts, DNA barcoding, multi-method taxonomy
Biological nomenclature: nomenclatural codes, synonymy, typification
Biodiversity informatics: organisation and management of taxonomic databases and online taxonomic facilities and tools
Organisation and management of taxonomic collections (living and preserved specimens)
Taxonomic case studies – reality checks from the work floor

Initial competences

Bachelor-level knowledge of the biodiversity of major pro- and eukaryotic organismal groups

Final competences

- 1 The student understands how the current classification systems of pro- and eukaryotes have evolved, and is capable of using and critically evaluating taxonomic data.
- 2 The student understands the importance of taxonomic and systematics research for

- (applied) biological sciences and for society.
- 3 The student understands the different principles and methods used for delineating pro- and eukaryotic organisms, and the problems associated with species delimitation.
 - 4 The student understands the most recent developments in the use of DNA-based methods for species delimitation and identification (DNA barcoding) and is able to critically assess these approaches.
 - 5 The student is aware of the most recent possibilities and developments in the field of biodiversity informatics, and is able to apply these to explore, manage and analyze taxonomic data.
 - 6 The student understands the rules of the different nomenclatural codes for describing and naming species, and is able to apply these to case studies.
 - 7 The student is able to, both individually and in group, critically analyse, integrate and synthesize topics from the wider field of taxonomy and systematics using concrete data and/or literature data, and report and communicate the results of these exercises in an adequate manner.

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, microteaching, practicum

Extra information on the teaching methods

In addition to lectures, students are familiarized with taxonomic and systematics research problems during practicals (e.g. exercises on nomenclature and biodiversity informatics) and microteaching (student lectures, individually or in groups). The excursion involves a visit to the Royal Institute for Natural Sciences in Brussels.

Learning materials and price

Course notes and publications are available via Ufora

References

Course content-related study coaching

Direct interactions during lectures (incl. student lectures), practicals and excursions. Possibility for personal meetings after electronic appointment or via Ufora.

Evaluation methods

end-of-term evaluation and continuous assessment

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

Participation, assignment

Possibilities of retake in case of permanent evaluation

not applicable

Extra information on the examination methods

Periodic evaluation: after written preparation, the answers are discussed with the some examiners. Additional questions may be asked. For other examiners, the exam is only written. Permanent evaluation: scoring based on student lectures (microteaching), reports of practicals and participation. For calculation final exam scores: see below.

Calculation of the examination mark

1st and 2nd examination period: periodic evaluation (60 %), non-periodic evaluation (40 %). It is not possible to succeed for this course if the student fails the periodic evaluation.