

## Phycology and Protistology (C002782)

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 136 h Contact hrs 62.0 h

### Course offerings and teaching methods in academic year 2020-2021

A (semester 1)	English	Gent	teaching method	hours
			online lecture	0.0 h
			lecture	25.0 h
			practicum	31.25 h
			seminar: coached exercises	11.25 h

### Lecturers in academic year 2020-2021

Sabbe, Koen	WE11	lecturer-in-charge
De Clerck, Olivier	WE11	co-lecturer

### Offered in the following programmes in 2020-2021

programme	crdts	offering
<a href="#">Bachelor of Science in Biology</a>	5	A
<a href="#">Master of Science in Teaching in Science and Technology (main subject Biology)</a>	5	A
<a href="#">Exchange programme Faculty of Sciences (bachelor's level)</a>	5	A
<a href="#">Preparatory Course Master of Science in Biology</a>	5	A

### Teaching languages

English

### Keywords

Systematics, evolution, morphology, ultrastructure, phylogeny, biodiversity, life cycles, phycology, protistology

### Position of the course

The course Phycology and Protistology aims at familiarizing the biology student with the ultrastructural, morphological and functional diversity of algae and unicellular eukaryotes (protists) in an evolutionary framework based on the most recent (molecular-) phylogenetic insights. In addition, important ecological and biogeographical aspects of these groups, and their potential for applied research, will be treated.

### Contents

Changing views on the evolution and phylogeny of algae and protists: microscopy, endosymbiosis, molecular phylogenies, genomics. Overview of important groups of algae and protists: Cyanobacteria. Opisthokonta. Amoebozoa. Archaeplastida: green algae (Chlorophyta), red algae (Rhodophyta), Glaucophyta. Alveolata (ciliates, dinoflagellates, Apicomplexa). Stramenopila (a. o. diatoms, brown algae, Chrysophyta). Cryptophyta. Haptophyta. Rhizaria: Cercozoa, Foraminifera and Radiolaria. Excavata: Diplomonadida, Parabasalia, Euglenozoa, Heterolobosea, ... Algal and protist life cycles. Aspects of biodiversity, biogeography and conservation of algae and protists.

### Initial competences

Final objectives of secondary education

### Final competences

- 1 The student knows the scientific terminology used in the fields of phycology and protistology, and is capable, either individually or in group, of reporting and communicating about topics from these research fields.
- 2 The student recognizes and knows the most important groups of algae and protists,

and knows their main biological (molecular, ultrastructural, morphological) and ecological characteristics.

- 3 The student has an understanding of how our concepts of the evolution of algae and protists have changed during the last decades and years.
- 4 The student is capable of following new developments in phycology and protistology in the literature and integrating these with acquired knowledge.
- 5 The student understands the importance of algae and protists for the functioning of global ecosystems, and their potential for applied research (food & feed, energy, biomolecules).

#### 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

Lecture, practicum, seminar: coached exercises, online lecture

#### Extra information on the teaching methods

Exercises: seminars and practical classes under supervision. In these classes students work together in small groups (group work). They gather information from the literature and the web, and prepare a report and a presentation, using ICT. In the practicals the students will get to know the different groups of algae and protists. Phycology and Protistology also form an integral part of the training during the Field Biology courses (partim Limnology and partim Marine Biology)

#### Learning materials and price

Digital syllabus and practical notes freely available on Ufora.

#### References

Hausman, Hülsmann & Radek (2003). Protistology. E. Schweizerbart'se Verlagsbuchhandlung, Berlin.

Van Den Hoek, Mann & Jahns (1995). Algae - an introduction to phycology. CUP.

#### Course content-related study coaching

Opportunity for questioning the lecturers during the orals, and outside these via email, personal contact and in an electronic teaching environment.

#### Evaluation methods

end-of-term evaluation and continuous assessment

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

Oral examination

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

Oral examination

#### Examination methods in case of permanent evaluation

Participation, assignment, report

#### Possibilities of retake in case of permanent evaluation

examination during the second examination period is not possible

#### Extra information on the examination methods

Periodic evaluation: after written preparation, the answers are discussed with the examiner; if needed, additional questions can be asked. During the exam, each student is shown about 20 pictures of algae and protists, which have to be identified.

Permanent evaluation: the results of the seminar/work group are presented and discussed. Scoring is based on participation, the report and the presentation and discussion. The reports of the practicals (drawings and notes) will be collected and scored on a regular basis. Here as well, participation is taken into account. Voor calculation final exam score, see below.

#### Calculation of the examination mark

1st examination period: periodic evaluation (80 %); permanent evaluation (20 %). 2nd examination period: periodic evaluation (80 %); permanent evaluation (20 %). To succeed for this course, (1) the students are obliged to follow the practicals and participate in the seminar/group work, and (2) they need to pass (50 %) the written and oral part of the theoretical exam.