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 Specifications
Valid as from the academic year 2020-2021

Course size
(nominal values; actual values may depend on programme)
Credits 3.0
Study time 90 h
Contact hrs 31.0 h

Course offerings and teaching methods in academic year 2020-2021
A (semester 2) English Gent excursion 10.0 h
practicum 2.5 h
lecture 20.0 h
seminar: coached exercises 2.5 h

Lecturers in academic year 2020-2021
Vyverman, Wim WE11 lecturer-in-charge
Vanreusel, Ann WE11 co-lecturer
Verschuren, Dirk WE11 co-lecturer

Offered in the following programmes in 2020-2021
Bachelor of Science in Biology 3 A
Master of Science in Teaching in Science and Technology (main subject Biology) 3 A
Exchange programme Faculty of Sciences (bachelor's level) 3 A

Teaching languages
English

Keywords
Marine and freshwater habitats, physical and chemical environment, food webs, biological interactions, biogeography, biological cycling, management

Position of the course
To acquire a sound understanding of principal abiotic and biotic characteristics of aquatic ecosystems, their function and the impact of human activities on marine and freshwater ecosystems.

Contents
• Physical, chemical and geological characterization of marine and freshwater habitats (topics include origin of lakes and marine habitats, water properties, light, heat, stratification, movement of water, oxygen, oxidation-reduction, inorganic carbon, salinity, nitrogen, phosphorus, iron, eutrophication)
• Biological and biogeographical characterization of aquatic environments, with emphasis on life history strategies of selected groups of organisms
• Functioning of aquatic ecosystems (foodweb structure and key processes: primary production, secondary production, decomposition, interaction between aquatic and terrestrial environments)
• Applied issues (exploitation, introduction of exotic species, global change and large-scale impacts, management)

Initial competences
General principles of ecology (population ecology, community and ecosystem ecology), biogeography and basic knowledge of aquatic biodiversity.

Final competences
1 The student gain insight into the principal concepts of aquatic ecology, including both freshwater and marine environments. He knows the major types of freshwater and marine habitats, how they are formed and evolve, and understands their place in the
hydrological and geochemical cycles. He understands the importance, measurement and dynamics of principal physical and chemical aspects of aquatic environments. He knows the life history and trophic relationships of the principal groups of organisms inhabiting aquatic ecosystems. He has a basic knowledge of how to characterise the biological cycling of energy and materials in aquatic environments. He understands the major aquatic ecosystem management methods and models. This knowledge forms the basis for field work in limnology and marine biology in bachelor 3.

2 During excursions, the student gets to know the main characteristics of representative Flemish aquatic habitats and their functions, and learns to recognise a number of aquatic organisms. During practical classes the student learns a number of basic techniques used in aquatic 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
Excursion, lecture, practicum, seminar: coached exercises

Extra information on the teaching methods
As this course is taught in English, important concepts and terms are translated and explained in Dutch. Students are free to ask questions in Dutch but are stimulated to do this in English as much as possible. Due to COVID-19 it is possible that alternative didactical tools will be applied when necessary.

Learning materials and price
PPT presentations available via Ufora (~150 pp. = 10€);
Cost: 45 EUR

References

Course content-related study coaching
During practical classes, assignments on selected topics are prepared and presented during group discussions. During these classes, students can pose general questions on the course’s content.

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

Examination methods in case of periodic evaluation during the second examination period
Written examination with open questions

Examination methods in case of permanent evaluation
Participation, skills test, report

Possibilities of retake in case of permanent evaluation
examination during the second examination period is possible in modified form

Extra information on the examination methods
Non-periodical evaluation: practical classes: performance and results of practicum and reports.
Periodical evaluation: written exam: questions testing knowledge and understanding of study material.

Calculation of the examination mark
Intermittent evaluation during practical classes and excursions (10%)
Final evaluation: written exam (90%). Students can only obtain credits for this course if they pass for both the intermittent as well as the final evaluation. If a student fails for one of both parts, a maximal score of 9/20 can be obtained.
If a student failed in the first examination period, he is offered a second chance for the
non-periodical evaluation via a compensating individual task between the first and second exam period