Global Change Physiology

2025 - 2026

Is part of the next programmes:

- M0037000 Master of Science in Marine and Lacustrine Science and Management

- M0047002 Master of Biology: Global Change Biology

- U0001008 Courses open to exchange students in Sciences

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Course Code:	2201WETGCP
Study Domain:	Biology
Semester:	1E SEM
Contact Hours:	45
Credits:	5
Study Load (hours):	140
Contract Restrictions:	No contract restriction

Language of Instructions:	ENG
Lecturer(s):	T Gudrun De Boeck C Han Asard
Examperiod:	exam in the 1st semester

1. Prerequisites *

speaking and writing of:

- English

reading and comprehending of:

- English

specific prerequisites for this course

Bachelor-level Cell Biology, Physiology and Biochemistry is required.

2. Learning outcomes *

- Students understand and are able to describe the general effects of changing and extreme climate conditions on organism functioning at the physiological level.
- Students are able to describe in detail, at the molecular, cellular and physiological level, responses and adaptations to particular, specific changing environmental factors. He/she also understands the nature of limitations to adaptation.
- Students are able to understand, in depth, top-ranked scientific literature (e.g. Nature, Science, PNAS).

3. Course contents *

This course explores the challenges faced by organisms that result from living in changing and extreme conditions. It provides an overview of physiological and biochemical responses and adaptations, to deal with such circumstances. Physical factors that are considered are changing temperatures, changing O_2 and CO_2 levels, changing pH, and water availability. Responses and adaptations in a broad range of physiological and biochemical processes are discussed. These include, for example, metabolism and defence systems in animal systems under environmental pressure, and, for plants photosynthesis, primary metabolism, growth and defence responses.

4. International dimension *

- This course stimulates international and intercultural competences.
- Students use course materials in a foreign language.
- Students give presentations in a foreign language.
- Students write papers in a foreign language.

5. Teaching method and planned learning activities

5.1 Used teaching methods *

Class contact teaching

- Lectures

Personal work

Assignments

- Individually

5.2 Planned learning activities and teaching methods

This course is primarily compased of in-class lectures together with a personal assignment. Details will be communicated through BlackBoard.

5.3 Facilities for working students *

Others

Old (20-21) recordings are available as back-up. The current course content was reduced a bit, so use current slides to check which parts should be studied. The assignement is individual with individual feedback but requires your presence in the final lecture for presentation/defense.

6. Assessment method and criteria *

6.1 Used assessment methods *

Examination

- Written examination without oral presentation

Other assessment methods

- Written assignment

6.2 Assessment criteria *

The assessment consists of 3 equally weighed parts: the written assignment, the plant physiologt-based part of the exam and the animal physiolgy- based physiological part of the exam. To pass, it is necessary to pass on each 3 sub-sections. When one of the sub-sections scores equal or < 7/20 your average score will max out at 7/20, when more than one sub-section scores equal or < 9/20 your maximum score will max out at 9/20.
Sections that scored equal or >10/20 do not need to be retaken in second chance assessments.
If AI is used for the assignment (not obligatory), it should be clearly stated what AI software was used and for which part of the assignment. This should include the instructions given to the AI software and the different steps and changes in instructions if several attempts were made. It is your own responsibility to check

the references provided by AI, and to read the papers used as reference. In this case, you are also asked to give your appreciation of the use of AI for this assignment.

7. Study material

7.1 Required reading *

Slides abailable on Blackboard

7.2 Optional reading

8. Contact information *

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9. Tutoring