Swedish University of Agricultural Sciences

P000160, Climate change and the ocean, 3.0 Hp

Syllabus

Finalized by: Matt Low, 2025-12-01

Valid from: VT2026

Level within study regulation:

Third cycle

Grading scale:

Pass / Failed

Course language:

Swedish

Entry requirements:

Admitted as a PhD student

Objectives:

The course aims to give the students a comprehensive understanding of the mechanisms and processes through which climate change affects aquatic ecosystems, organisms, and humans across multiple spatial and temporal scales.

The course is of particular relevance to students seeking insight into the effects of climate change on oceanic ecosystems, including physical circulation, biogeochemistry, fish/fisheries, economic impacts and the path forward.

After completing the course, the students should be able to:

- Describe and give examples on impacts of climate change concerning warming, deoxygenation and ocean acidification on oceanic ecosystems.
- Explain the main ecological responses of fish populations to environmental and climate variability regarding warming, deoxygenation and ocean acidification
- Explain the connection between healthy oceans and the economic and cultural aspects concerning fisheries, coastal communities, and food security on a national and international scale.
- Describe and give examples on how direct and indirect impacts of climate change-related events, degrade or alter critical aquatic habitats and food webs.

Content:

The primary objective of the course is to teach climate change science, based on the study of aquatic ecosystems. The course is structured in six modules: i) Introduction to Climate change, ii) Ocean acidification, iii) Temperature, iv), Hypoxia, v) Economical and cultural aspects, vi) Communication of science.

Modes of assessment:

Grading scale: Pass/Fail

Grading criterion:

- Students are required to attend a minimum of 28 out of 31 scheduled online lectures to successfully complete the course.

- Contribute to a productive discussion forum at the online platform.

  - Initial Posting Content:
    - ⋆ Response addresses the question with thought and clarity.
    - ⋆ Applies content and material from the course readings and/or lecture content in the response.
  - Follow-up Posts
    - ⋆ Responds to initial question and responds to one or more classmates.
    - ⋆ One or more postings include references to class content, either readings or lecture content.
  - Timing
    - ⋆ Responds by Friday or earlier in the module week.

- If a student has failed an examination, the examiner has the right to issue supplementary assignments. This applies if it is possible and there are grounds to do so.
- The examiner can provide an adapted assessment to students entitled to study support for students with disabilities following a decision by the university. Examiners may also issue an adapted examination or provide an alternative way for the students to take the exam.
- If this syllabus is withdrawn, SLU may introduce transitional provisions for examining students admitted based on this syllabus and who have not yet passed the course.
- For the assessment of an independent project (degree project), the examiner may also allow a student to add supplemental information after the deadline for submission. Read more in the Education Planning and Administration Handbook.

Organisation:

Department of Aquatic Resources

Supplementary information

Other information:

- The right to participate in teaching and/or supervision only applies for the course instance the student was admitted to and registered on.
- If there are special reasons, students are entitled to participate in components with compulsory attendance when the course is given again. Read more in the Education Planning and Administration Handbook.