BIO081   Ocean literacy: Science to Society, 7.5 credits
Havsmedvetenhet: från forskning till samhälle, 7,5 högskolepoäng
First Cycle

Confirmation
This course syllabus was confirmed by Department of Biological and Environmental Sciences on 2021-02-12 to be valid from 2021-02-12, spring semester of 2021.

Field of education: Science 100%
Department: Department of Biological and Environmental Sciences

Position in the educational system
The course is a continuing professional development course directed mainly to professionally active elementary- and upper secondary school teachers, teacher students, tourist guides or diving instructors.

Main field of studies	*Specialization*
Biology	G1N, First cycle, has only upper-secondary level entry requirements

Entry requirements
General entrance requirements

Learning outcomes
On successful completion of the course the student will be able to:

Knowledge and understanding
- describe the concept of ocean literacy
- describe key services provides by the ocean (e.g. biodiversity)
- describe the relationship between the ocean and society, including threats such as climate and other ocean changes

- describe the solutions available to address and minimize human impacts on the ocean
- describe the available new education and communication technologies (e.g. virtual reality)
- describe the basics and educational resources of the of VIRTUE project
- describe the basics and educational resources of the Inquiry-2-Sea project
- describe the basics of Project Based Learning

Competence and skills

On successful completion of the course the student will be able to:

- use existing resources from the VIRTUE and Inquiry-2-Sea projects, including:
  - produce microscope photographs
  - calculate biodiversity indices
  - design experiments
  - calculate and discuss carbon footprint
- create engaging hands-on and virtual activities related to the ocean

The course is sustainability-related, which means that at least one of the learning outcomes clearly shows that the course content meets at least one of the University of Gothenburg's confirmed sustainability criteria.

Course content

All aspects of our life are deeply rooted in the ocean, no matter where we live. Unfortunately, the ocean is threatened by disastrous human impacts. In this respect, education and communication have a key role to play in fostering our appreciation of the importance of the ocean, our understanding of our own responsibility in its destruction and our awareness of the relevance of its protection.

This course is centered on the concept of ocean literacy to understand that the ocean has an impact on us, we have an impact on the ocean and it is our responsability to take responsible actions. It will explore the concept of ocean literacy and illustrate how to teach and communicate about the ocean using hands-on and virtual activities.

The course is divided into four different components (modules):

1. Ocean literacy - ocean and society during the Anthropocene
2. Hands-on activities - the VIRTUE project (Marine biofouling and biological diversity)
3. Virtual activities - the Inquiry-2-Sea project (Ocean acidification and carbon footprint)

4. Development of new education and communication activities (Project assignment)
The main objective of the course is to develop an understanding on how to use hands-on and digital tools to increase the quality of teaching and communication of ocean science. The course will use the education material developed by two projects:

- The VIRTUE project [www.virtue-s.eu] providing resources to learn about and measure biodiversity of aquatic environment through the accumulation of organisms (biofouling) on CD-shaped discs.
- The Inquiry-2-Sea project [depts.washington.edu/i2sea/index.php] providing virtual tool to learn about ocean acidification, experimental design, solutions to tackle ocean based global changes and carbon footpring.

The course is centered on the concept of ocean literacy and methods and technologies that can be used to communicate it. The course gives examples of how other scientific subjects, but also language, media and art can be used.

Form of teaching

The teaching consists of lectures in webinar form supplemented with in-depth exercises and group discussions. The course ends with the course participants developing and writing a project assignment where they clearly describe how they would design an activity to teach or communicate about the ocean.

Language of instruction: English

Assessment

The learning outcomes are examined by questions and assignments after each module and by a written report. The course is furthermore examined through submission of a project work that is presented orally and in writing.

If a student, who has been failed twice on the same course component being examined, wishes to change examiner before the next examination, a written application shall be sent to the department responsible for the course, and shall be granted, unless there are special reasons to the contrary (Chapter 6, Section 22, Higher Education Ordinance).

If a student has received a recommendation from the University of Gothenburg regarding study support for students with disabilities, the examiner may decide, in the case where this is compatible with the learning outcomes for the course, and provided no unreasonable resources are required, to give the student an adjusted examination or an alternative form of examination.

In case the course has been discontinued or undergone any larger changes the student is guaranteed access to at least three additional examination sessions (including regular examination sessions) within the time of at least one year. The same applies to

placements and professional placements (VFU), although this is restricted to just one additional examination session.

Grades

The grading scale comprises: Pass with Distinction (VG), Pass (G) and Fail (U).
In the course, one of the grades is given Passed with distinction (VG), Pass (G) and Fail (U). To achieve the grade Pass, attendance at group discussions and the oral presentation and Pass are required on the project work. To achieve the grade Pass with distinction, attendance at group discussions and the oral presentation and Pass with distinction are required on the project work.

Course evaluation

A written and anonymous course evaluation is carried out upon completion of the course. The result of possible changes in the course content are communicated both to the students who carried out the evaluation and to the students who will start the following course.