

2.00 credits

25.0 h

Q2

Teacher(s)	Mallefet Jérôme ;
Language :	French
Place of the course	Louvain-la-Neuve
Prerequisites	To follow this course, it is necessary to master the knowledge and skills developed in the courses LBIO1230 and LCHM1371B.
Main themes	Beginning of this course will consist of a brief description of seas and oceans' topography, followed by a description of major physical-chemical properties of seawater. The main mechanisms that control the circulation of water masses will also be illustrated. The major part of the course will concentrate on different types of marine habitats, organism's distributions as well as regulating factors from intertidal zone down to deep sea. Concepts of coral reefs and hydrothermal vents communities will be studied. Emphasis is put on metabolic adaptations, floatability phenomenon and bioluminescence. Finally, an overview of food chains and the impact of human beings on marine life will be presented.
Learning outcomes	<p>At the end of this learning unit, the student is able to :</p> <p>1 The course aims to give an introduction to marine organisms in their environment. Biodiversity and adaptation mechanisms of marine animals will be illustrated by some examples. Remarkable capabilities of marine organisms in different biota will be presented. Finally, reflexion on human impacts on the marine environment will be evoked.</p>
Evaluation methods	The assessment is done via a 20-minute oral exam with the teacher following a 20-minute written preparation. Students must have a comprehensive understanding of the marine ecosystem by integrating the roles and functions of physicochemical elements and their impacts on the functioning and characteristics of living organisms from the surface to the depths of the ocean. Describe the various environments in the seas and oceans based on latitude and depth. Illustrate the relationships between marine organisms and these environments. The objective of the course is to make known and understand the biological diversity and adaptation mechanisms of marine animals, through which they have successfully colonized the most diverse and hostile habitats. The analysis of the graphs and schema presented in class is an essential science achievement that the student will demonstrate during the exam.
Teaching methods	The course is delivered in the form of lectures in audience (lectures); a syllabus has been written as a study material; audiovisual (film) sessions in English are used to illustrate some of the subjects presented in the course.
Content	Following a brief description of the topography of the seas and oceans, the physicochemical properties of seawater; the main mechanisms controlling the circulation of water bodies are discussed. The second part of the course is devoted to the description of the different organisms typical of the coastal and oceanic zones as well as their specific adaptations. We will see how marine animals have managed to adapt to the various types of habitats from the intertidal zone to the hydrothermal vents and the coral reefs. The focus is on metabolic adaptations, buoyancy phenomena, bioluminescence. The fourth part gives an overview of trophic chains, the governing factors of surface and depth migrations, ocean productivity, and briefly the impact of humans on the marine environment.
Other infos	Course materials: syllabus + PDF copy of slides presented during the course + illustrative video will be made available to students on Teams. The link will be provided to students enrolled in the course. Please note that the course is given at the beginning of the second term.
Faculty or entity in charge	BIOL

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Additional module in Biology	APPBIOL	2		