UNIVERSITÀ DI PAVIA

Anno Accademico 2019/2020

MARINE AND FRESHWATER ECOLOGY : 12 CREDITS

Enrollment year	2019/2020
Academic year	2019/2020
Regulations	DM270
Academic discipline	BIO/07 (ECOLOGY)
Department	DEPARTMENT OF BIOLOGY AND BIOTECHNOLOGY "LAZZARO SPALLANZANI"
Course	EXPERIMENTAL AND APPLIED BIOLOGY
Curriculum	Biologia ambientale e biodiversità
Year of study	1°
Period	2nd semester (01/03/2020 - 14/06/2020)
ECTS	9
Lesson hours	72 lesson hours
Language	Italian
Activity type	ORAL TEST
Teacher	OCCHIPINTI ANNA CARMEN (titolare) - 6 ECTS MARCHINI AGNESE - 3 ECTS
Prerequisites	A basic knowledge of the fundamental concepts of ecology, zoological and botanical classification is strongly recommended
Learning outcomes	The course provides students with basic theoretical and practical knowledge of marine and freshwater ecology, through lectures, practical laboratory work and field activities, allowing them to interpret the discipline with an ecosystem approach for the conservation of Oceans and Seas.
Course contents	Modulo 1. Historical evolution of oceanographic sciences. Major abiotic factors in marine waters. Origin and morphology of the seabed. Morphological, physiological and ethological adaptations of the organisms to the marine environment, their distribution in relation to water depth. Primary and secondary production in marine environment.

	Fisheries and aquaculture. Pollution and coastal zone management. Role of marine protected areas and marine parks in coastal water conservation. Modulo 2. The river/lake web and hydrographical basins. Major lakes and rivers of the world and of the national territory, their morphological characteristics. Environmental factors affecting inland waters and their influence on the biota. Plankton, Benthos, Necton: main characteristics, distribution and study methods. Biological productivity. Pollution and mitigation. Biological indices of environmental quality in waters. Anthropic alterations of freshwater environments. The contents of this course specifically address the following Goals of the 2030 UN Agenda for a Sustainable Development: Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.
Teaching methods	Frontal lessons, and practical laboratory works, field activities.
Reccomended or required readings	PETER CASTRO, MICHAEL E. HUBER Biologia Marina. Edizione italiana a cura di Roberto Sandulli, Giuseppe Giaccone, Angelo Tursi. ISBN: 9788838666513 Prezzo: Euro 53.00, Pagine:568. BERTONI R. Laghi e scienza: introduzione alla limnologia. Casa Editrice Aracne 2006. ISBN: 978885480473 Prezzo: Euro 19.00, pagine 268. Additional working material will be directly provided by the teachers on UNIPV KIRO website (http://kiro2014.unipv.it/idcd/).
Assessment methods	The oral exam on the contents of both modules comprises also a practical text on the taxonomical identification of marine and freshwater organisms shown during the laboratory activities-
Further information	Within the practical activities of this course, a three-day field trip to a Marine Protected Area is also being organized, where students can learn to recognize the main habitats and related organisms and to apply non-destructive sampling techniques (i.e. visual census), which are usually applied as a monitoring tool in research activities in MPAs.
Sustainable development goals - Agenda 2030	$lbl_legenda_sviluppo_sostenibile