UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Scienze della Terra e del Mare
ACADEMIC YEAR	2016/2017
BACHELOR'S DEGREE (BSC)	NATURAL AND ENVIRONMENTAL SCIENCES
SUBJECT	MARINE BIOLOGY
TYPE OF EDUCATIONAL ACTIVITY	D
AMBIT	10552-A scelta dello studente
CODE	01636
SCIENTIFIC SECTOR(S)	BIO/07
HEAD PROFESSOR(S)	GIANGUZZA PAOLA Professore Associato Univ. di PALERMO
OTHER PROFESSOR(S)	
CREDITS	6
INDIVIDUAL STUDY (Hrs)	102
COURSE ACTIVITY (Hrs)	48
PROPAEDEUTICAL SUBJECTS	
MUTUALIZATION	
YEAR	2
TERM (SEMESTER)	2° semester
ATTENDANCE	Not mandatory
EVALUATION	Out of 30
TEACHER OFFICE HOURS	**GIANGUZZA PAOLA** Wednesday 12:00 13:00

DOCENTE: Prof.ssa PAOLA GIANGUZZA

PREREQUISITES	Basic knowledge of marine ecology, zoology and botany
LEARNING OUTCOMES	1) understand the diversity of marine species, their evolutionary history, distribution, and adaptations to their habitats, reproductive biology and ecology, interactions with other organisms,. 2) implement contemporary biological research techniques to conduct experiments, and use quantitative and/or statistical approaches to analyze the results and draw appropriate conclusions. 3)synthesize knowledge of physical and chemical processes of oceans and the biology of organisms to ask questions about natural history and ecology.
ASSESSMENT METHODS	Oral test
EDUCATIONAL OBJECTIVES	The course has a strong ecological focus, linking biological and oceanographic processes in the study of marine environments. The course will develop breadth of your knowledge through a range of disciplines, from the biological sciences like marine botany and zoology to the physical sciences of chemistry, geography and oceanography. You will learn about the behaviour, physiology, and ecology of marine organisms, and how marine food webs are influenced by global warming and fisheries. Applied aspects of the programme include monitoring, pollution, conservation, and aquaculture. Modern marine biology requires a wide range of skills, from field work to data analysis. This course explores the techniques and methods of undertaking marine biological research, including experimental and sampling design, data collection, statistical analysis of data, presentation of the research results and peer review.
TEACHING METHODS	Teacher up front lessons
SUGGESTED BIBLIOGRAPHY	1.Biologia Marina Peter Castro, Michael E. Huber 2002 -2016 McGraw-Hill Education (Italy) srl 2.Levinton, 1995. Marine Biology. Oxford University Press, Oxford 3.Cognetti, Sara' e Magazzu' 1998. Biologia Marina. Calderini, Bologna 4.Dispense distribuite durante il corso.

SYLLABUS

Hrs	Frontal teaching
48	Introduction to marine biology and oceanography The early ocean voyagers and the principles of navigation Physics and chemistry of the oceans Sea water: its chemical and physical properties Salinity, density Light in the Sea Atmospheric Circulation and Ocean Currents Global atmospheric circulation and the effect of Coriolis Ekman currents; The major ocean gyres; Western Boundary Currents; Equatorial currents;The Gulf Stream Waves and tides The ocean floor: its formation and evolution Geography of the ocean and the structure of planet ocean The theory of plate tectonics Marine sediments: origins and dynamics of marine sediments Vertical structure in the ocean Classification of the marine environment: neritic vs. Oceanic provinces, benthic vs. Pelagic divisions Introduction to life in the sea The basics of marine biology: photosynthesis and respiration Nutrients and limiting factors Biological production in the oceans Food webs The primary producers: the phytoplankton; the macroalgae (the seaweeds); seagrasses The zooplankton: the meroplankton and the holoplankton The Benthos The Necton The Deep Sea Ecophysiology of Marine Animals Experimental design and data analysis for marine biology Marine Fisheries and Aquaculture Human Impacts: Marine Pollution; Global Climate Change Marine protected areas