

General Information	
Academic subject	Ecology
Degree course	Science of Primary Education
Curriculum	
ECTS credits	6
Compulsory attendance	No
Language	Italiano

Subject teacher	Name Surname	Mail address	SSD
	Gianfranco D'Onghia	gianfranco.donghia@uniba.it	BIO/07

ECTS credits details			
Basic teaching activities			

Class schedule	
Period	Semestre II March 2020
Year	2019-2020 (Third year of the course)
Type of class	Lectures

Time management	
Hours measured	60 min
In-class study hours	45
Out-of-class study hours	765

Academic calendar	
Class begins	March
Class ends	May

Syllabus	
Prerequisite requirements	
Expected learning outcomes (according to Dublin Descriptors)	<p><i>Knowledge and understanding</i></p> <p><i>Applying knowledge and understanding</i></p> <p><i>Making informed judgements and choices</i></p> <p><i>Communicating knowledge and understanding</i></p> <p><i>Capacities to continue learning</i></p>
Contents	<p>INTRODUCTION</p> <p>The life is organized according to systems of various complexity. The emergent properties. Interdependence of the part from the whole and the whole from the part. Regulation and control of the living systems. The ecosystem: components and factors. Self-organization and cybernetic nature of the ecological systems. Self-regulation of the biosphere and the Gaia hypothesis.</p> <p>ENERGY IN THE ECOSYSTEMS</p> <p>The flow of the energy in the ecosystems. The concept of productivity. Productivity in the aquatic and terrestrial environments. Global distribution of the primary productivity. Production of food, fibers, materials and fuels. Food webs and</p>

	<p>ecological pyramids. Dissipating processes in the food webs. Quantity and quality of the energy. Energetic tipologies of ecosystems. The urban-industrial ecosystem. Bioaccumulation and biomagnification.</p> <p>THE CYCLE OF THE MATTER IN THE ECOSYSTEMS</p> <p>Decomposition and nutrient cycles. Biogeochemical cycles. The cycle of the water and the climate. Provision and lost of water by organisms. Water impact of food. The cycle of the carbon and green-house effect. Nitrogen, phosphorus and sulphur cycles. Soil fertility; eutrofication; acid rains. Oxigen and ozone. The ozone hole. The litter problem and the closure of the circle.</p> <p>POPULATIONS AND COMMUNITIES</p> <p>Biotic components of the ecosystem. Life-history strategies of the different species. Function of the species in the ecosystem and ecological niche. The organisms are organized in population. Population structure and dynamics. Population growth. Species interactions in the community: competition, predation, parassitism, mutualism, commensalism and amensalism. Community and species diversity (number and relative abundance). Community change across the space (stratification and zonation) and time (ecological succession). The landscape. Biogeography of the islands. Distribution of the biodiversity on the Earth planet. Increase and loss of biodiversity.</p> <p>HUMAN ECOLOGY</p> <p>Natural capital, biodiversity, goods and ecosystem services. Ecology and Economy. Growth of the population, utilization of the natural resources and sustainability. The sizes of the sustainability. Sustainability indicators. Ehrlich and Holdren equation. Habitat degradation and lost, species extinction and global change of the climate. Cost-benefit analysis related to the use of natural resources.</p>
Course program	
Bibliography	Eugene P. Odum – ECOLOGIA. Un ponte tra scienza e società. Ed. PICCIN
Notes	Suggested
Teaching methods	Power Point presentations
Assessment methods	Oral exam
Further information	