

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 I October 2020
Year	2020-2021 (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	October
Class ends	January

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 basic ingredients of the life. The life is organized according to systems of various complexity. The systemic vision of the ecology. Interdependence of the part from the whole and the whole from the part. Regulation and control of the living systems. Biodiversity and factors influencing its distribution on the planet.</p> <p>ECOSYSTEM</p> <p>The ecosystem: abiotic and biotic components. Factors of the ecosystem. Self-organization and self-regulation of the ecological systems. Self-regulation of the biosphere and the Gaia hypothesis. The urban systems.</p> <p>CLIMATE OF THE EARTH</p>

	<p>Climate, organisms and biomes. Organisms and adaptation. Limiting factors and ecological niche. Climate change influences the biodiversity distribution.</p> <p>ENERGY IN THE ECOSYSTEMS</p> <p>The flow of the energy in the ecosystems. The primary productivity. Ecological efficiency of photosynthesis. The secondary productivity. Auxiliary energy and productivity in terrestrial and marine ecosystems. Typologies of food chains. Food webs and ecological pyramids. Dissipating processes in the food webs. Quantity and quality of the energy. Loss and waste of food. Food production and green-house gas. Energy flow in the urban systems.</p> <p>POPULATIONS AND COMMUNITIES</p> <p>Biotic components of the ecosystem. Life-history strategies of the different species. The organisms are organized in population. Population structure and dynamics. Migration. Population growth. Community and species diversity (number and relative abundance). Diversity-stability. Species interactions in the community: competition, predation, parasitism, mutualism, commensalism and amensalism. Community change across the space (stratification and zonation) and time (ecological succession). The landscape. The theory of the biogeography of the islands.</p> <p>THE CYCLE OF THE MATTER IN THE ECOSYSTEMS</p> <p>Decomposition and nutrient cycles. Biogeochemical cycles. The cycle of the water. Availability of freshwater. Water impact of food. The cycle of the carbon and green-house effect. The cycle of the oxygen and hole of ozone. Nitrogen, phosphorus and sulphur cycles. Soil fertility; eutrofication; acid rains. The litter problem and the closure of the circle. Bioaccumulation and biomagnification.</p> <p>SUSTAINABILITY</p> <p>Natural capital, biodiversity, goods and ecosystem services. Growth of the population, utilization of the natural resources and impacts on the ecosystems. Habitat loss, overexploitation, pollution and global change. Ehrlich and Holdren equation. The sizes of the sustainability. Ecology and Economy. Sustainability indicators. The value of nature. Cost-benefit analysis related to the use of natural resources. Measures in the context of policy of sustainable development.</p>
Course program	
Bibliography	<p>Gianfranco D'Onghia - APPUNTI DI ECOLOGIA E SPUNTI DI SOSTENIBILITA'. Manuale per gli studenti di Scienze della Formazione Primaria e non solo. <i>Libreriauniversitaria.it Edizioni.</i></p>
Notes	Suggested
Teaching methods	Power Point presentations
Assessment methods	Oral exam
Further information	