UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Architettura
ACADEMIC YEAR	2021/2022
BACHELOR'S DEGREE (BSC)	TOWN PLANNING AND URBAN STUDIES
INTEGRATED COURSE	LANDSCAPE ECOLOGY AND RURAL LANDSCAPE PROTECTION AND UPGRADING - INTEGRATED COURSE
CODE	17992
MODULES	Yes
NUMBER OF MODULES	2
SCIENTIFIC SECTOR(S)	BIO/03, AGR/03
HEAD PROFESSOR(S)	SOTTILE FRANCESCO Professore Associato Univ. di PALERMO
OTHER PROFESSOR(S)	SOTTILE FRANCESCO Professore Associato Univ. di PALERMO BAZAN GIUSEPPE Professore Associato Univ. di PALERMO
CREDITS	12
PROPAEDEUTICAL SUBJECTS	
MUTUALIZATION	
YEAR	3
TERM (SEMESTER)	1° semester
ATTENDANCE	Not mandatory
EVALUATION	Out of 30
TEACHER OFFICE HOURS	**BAZAN GIUSEPPE** Monday 09:00 19:00 Ricevimento a distanza su Piattaforma Microsoft Teams. Tuesday 09:00 19:00 Ricevimento a distanza su Piattaforma Microsoft Teams. Wednesday 09:00 19:00 Ricevimento a distanza su Piattaforma Microsoft Teams. Thursday 09:00 19:00 Ricevimento a distanza su Piattaforma Microsoft Teams. Friday 09:00 19:00 Ricevimento a distanza su Piattaforma Microsoft Teams. Saturday 09:00 12:00 Ricevimento a distanza su Piattaforma Microsoft Teams. **SOTTILE FRANCESCO** Wednesday 09:00 11:00 Stanza 127 Edificio 14 Corpo C I piano - Dipartimento di Architettura

DOCENTE: Prof. FRANCESCO SOTTILE

PREREQUISITES	Basic knowledge of biology.
LEARNING OUTCOMES	Knowledge and Comprehension Abilities The students shall acquire those tools that can help them understand the interaction between structure and function of ecological systems and analyse the natural processes and human activities that generate the landscape. This knowledge will help the students realize ad apply the principal action of Landscape ecology and landscape conservation. This goal is achieved by attending lectures and seminars, participating in field trip and G.I.S. activities. The educational tools used for this goal are Power Point presentations, along with handbooks and manuals. Ability to Apply Knowledge and Comprehension The students will apply the theoretical concepts they have learnt during the lectures and their individual study in a series of practical activities (definition of conservation action for landscape conservation in urban planning). The following activities will help the students apply their knowledge: in-class GIS activities, seminars, field trips, individual or group researches. The educational tools used to achieve these goals include using PC software which is able to process statistical data and maps; producing basic maps and cartograms; preparing Power Point presentations. Judgement Autonomy The judgement autonomy of the students will be stimulated through the use of qualitative methodologies and techniques of research (e.g. application of standards and tools for landscape management and conservation). Each student is invited, both individually and in group, to express his/her own personal opinions on a case of study. The educational tools used for spurring the autonomy of judgement include preparing oral presentations about a case of application of actions in landscape management and conservation and the related methodological approach. Communication Abilities Teamworking and seminars allow the students to acquire communication abilities by using diverse media, like oral presentations, graphical representations (e.g. mental maps), written texts and Power Point presentations. These communication abilities will allow the students to clearly express the contents learned with adequate and appropriate technical and scientific terminologies. The students will discuss these topics through oral presentations, graphical representations and written texts. The educational tools used for these goals include thematic maps, ideograms, photographic and hypertextual presentations. Learning Abilities The course "Landscape ecology and rural landscape conservation" aims at teaching students the capacity of analysis making possible subsequent studies with a high degree of autonomy. To that end, the course stimulates the students to develop a scientific curiosity towards of the course issues. The acquisition of these abilities will be tested through ongoing evaluations. The educational tools used for this goal include handbooks and manuals, as well as Power Point presentations.
ASSESSMENT METHODS	The student will have to answer at least four oral questions, on all of the topics described in the list below (see "Programma dell'insegnamento"), as studied in the suggested readings list provided below. The final evaluation aims at appraising whether the student possesses a good knowledge and comprehension of the topics, and whether he/she has acquired the ability to interpret and the autonomously judge actual cases. The lowest evaluation grade will be achieved if the student proves his/her knowledge and comprehension of the main subjects, at least within a general framework, and can apply that knowledge. The student shall also be able to present to the examiner, while competently discussing, the topics related to landscape analysis methods in a successful way. Below that threshold, the student will not be able to pass the examination. On the contrary, the more the student will be able to interact with the examiner and discuss the topics, and the more he/she will prove to have acquired the basics of landscape management and conservation, the higher will the evaluation grade be. The evaluation grades range is comprised between 18 and 30, according to the following criteria: Excellent (30 – 30 e lode): Excellent knowledge of the subjects studied in the course, excellent language skills, good analytical and interpretative capacity; the student is fully able to understand principles and methods of landscape ecology and rural landscape conservation. Very good (26-29): Good mastery of the subjects studied in the course, very good language skills; the student is able to understand principles and methods of landscape ecology and rural landscape conservation.

	Good (24-25): Knowledge of the main subjects studied in the course, good language skills; the student shows a limited ability to understand principles and methods of landscape ecology and rural landscape conservation. Average (21-23): Basic knowledge of some subjects studied in the course, adequate language skills; poor ability to autonomously understand principles and methods of landscape ecology and rural landscape conservation. Pass (18-20): Minimal knowledge of some subjects and of the technical language; very poor or inexistent ability to autonomously apply techniques to understand principles and methods of landscape ecology and rural landscape conservation. Fail: The student does not have an acceptable knowledge of the subjects studied in the landscape ecology and rural landscape conservation course.
TEACHING METHODS	Lectures, In-class activities, Seminars and Field trips

MODULE
RURAL LANDSCAPE PROTECTION AND UPGRADING

Prof. FRANCESCO SOTTILE

SUGGESTED BIBLIOGRAPHY

BARBERA G., BIASI R., MARINO D. (a cura di), 2014. I Paesaggi Agrari Tradizionali. Un percorso per la conoscenza. FrancoAngeli, Milano. EAN 9788891705389
SERENI E., 2020. Storia del paesaggio agrario italiano - Ed. Laterza EAN 9788858140741.
BARBERA, G., 2000. L'Orto di Pomona. Sistemi tradizionali dell'arboricoltura da frutto in Sicilia. Palermo: L'Epos. EAN 9788883021411
 SOTTILE, F, PEANO, C, 2017. Agricultura Slow. Slow Food Editore EAN 9788884994608

AMBIT	50096-Ecologia, geografia e geologia
INDIVIDUAL STUDY (Hrs)	102
COURSE ACTIVITY (Hrs)	48

EDUCATIONAL OBJECTIVES OF THE MODULE

The course is addressed to define the concept of landscape based on the different disciplinary approaches and the difference between landscape, territory, environment, habitat, space and others similar; agricultural and agro-forestry landscape as a synthesis between nature, history, land use and perception; to define the concept of Traditional Agricultural Landscape (PAT); to define the concepts of environmental vocationality and biodiversity of agricultural interest in the evolution of the landscape; to provide analytical notions and techniques to study agricultural and agro-forestry landscapes in the context of an approach linked to "ecosystem services"; the Sicilian agricultural landscape in the Mediterranean ecosystem with the evolution from "ancient agro-forestry landscape" to the "agricultural and traditional landscapes"; to describe the path from conservation to the protection of the agricultural landscape system; to identify of the indicators of different environmental and landscape units and of the main elements of the Sicilian rural landscape; to define, through examples and models, the main principles and tools of valorization for the elements to be evidenced in the Sicilian agricultural landscape system.

SYLLABUS

Hrs	Frontal teaching
2	Introduction to the course
4	Introduction to the landscape: fundamentals in terms of physical, historical, natural and cultural perspective.
2	Origin and evolutions of the agricultural landscapes
2	The historical path for Traditional Agricultural Landscape identification
4	The Sicilian landscape as a template of landscape evolution due to the traditional agricultural involvement
2	The Mediterranean garden as a template of interaction between landscape and agriculture
4	Environmental vocationality and connection to biodiversity and agroecology
4	Sicilian traditional landscapes: some models from historical and agricultural point of view
4	Landscape units and their classification with examples
4	Agricultural landscapes in Sicily (grapes, olives, cereals, fruit species, traditional soil management).
2	Natural and semi-natural systems in Sicily in the agro-forestry landscape with several approach
2	Traditional Agricultural Landscape: an ecosystem approach
4	Traditional Agricultural Landscape in Sicily: some case-studies

Hrs	Practice
8	Visits in the Conca d'Oro area and in some historical gardens in Palermo

MODULE
LANDSCAPE ECOLOGY

Prof. GIUSEPPE BAZAN

SUGGESTED BIBLIOGRAPHY

Pignatti S.(ed.), 1995: Ecologia vegetale. UTET. ISBN: 8802046700
Ferrari C., Pezzi G. 2013: L'ecologia del paesaggio. Il Mulino. ISBN: 8815247246
Blasi C., Boitani L, La Posta S., Manes F. & Marchetti M., 2005: Stato della Biodiversita' in Italia. Palombi Editore. ISBN 887621514-X

AMBIT	50096-Ecologia, geografia e geologia
INDIVIDUAL STUDY (Hrs)	102
COURSE ACTIVITY (Hrs)	48

EDUCATIONAL OBJECTIVES OF THE MODULE

Objective of the module is to provide cognitive and methodological tools for the analysis of physical, biological and anthropogenic landscape patterns, with emphasis on the natural environment.
The techniques of landscape survey, landscape analysis and landscape hierarchical classification will be discussed, aiming at the identification of land units and landscape units.
Particular attention will be paid to the study of the relationship between biological and cultural diversity, acknowledged as a fundamental element in the quality assessment of different landscapes.
The issues related to landscape dynamics interpretation for the definition of land cover change trajectories will be object of in depth analysis.
Landscape ecology themes will be applied to environmental planning and environmental restoration of urban areas and natural and semi-natural landscapes.

SYLLABUS

Hrs	Frontal teaching
2	Basic concepts of landscape ecology. Definition of landscape. Disciplinary framework of landscape ecology. Relationship between landscape ecology and Urban, Regional and Environmental Planning.
2	Elements of Ecology: holism and transdisciplinary approach, ecological models, Levels-of-Organization Hierarchy, The Emergent Property Principle. Ecosystems. Value of ecosystems and ecosystem services.
2	Environmental heterogeneity. Factors underlying heterogeneity: bio-climate, and bio-climatic maps.
2	Factors underlying heterogeneity: lithology, and lithological maps.
2	Factors underlying heterogeneity: geomorphology, digital terrain models, morphological maps.
2	Factors underlying heterogeneity: soil and soil maps.
2	Biodiversity concept. Levels of Biodiversity: intraspecific, interspecific, ecosystem.
2	Levels of Biodiversity: landscape diversity. Agro-diversity and cultural landscapes.
2	Plant landscape analysis. Flora. Analysis and interpretation of the flora
2	Floristic maps and plant diversity.
2	The concept of vegetation. Analysis and interpretation of vegetation: the classic phytosociological method.
2	Vegetation maps.
2	Plant community dynamics, ecological succession and vegetation series. Gradient analysis. Seral and catenal contacts: Synphytosociology.
2	The concept of Potential natural vegetation (PNV). Maps of vegetation series.
2	Landscape heterogeneity. Functional analysis of the landscape and interpretation of the land mosaic. Corine Land Cover maps and Corine Biotopes.
2	Land mosaic fragmentation and structure. Networks and connectivity. Definition and functions of ecological networks and green infrastructure networks.
2	The concept of spatial scale. Hierarchical land classification and mapping: principles and methods. The hierarchical classification of Italy: regions, systems, subsystems, and land units. Landscape units.
2	Landscape Naturalness. Naturalness maps
2	Landscape conservation indices (ILC and NEI).
4	Geographical Information Systems (GIS) applied to landscape dynamics analysis.

Hrs	Practice
6	Landscape characterization and analysis, in GIS environment, of a case study area.