![Università di Pavia logo] ## UNIVERSITÀ DI PAVIA

Anno Accademico 2021/2022

PLANT ECOLOGY	
Enrollment year	2019/2020
Academic year	2021/2022
Regulations	DM270
Academic discipline	BIO/03 (ENVIRONMENTAL AND APPLIED BOTANICS)
Department	DEPARTMENT OF BIOLOGY AND BIOTECHNOLOGY "LAZZARO SPALLANZANI"
Course	BIOLOGICAL SCIENCES
Curriculum	PERCORSO COMUNE
Year of study	3°
Period	1st semester (01/10/2021 - 14/01/2022)
ECTS	6
Lesson hours	48 lesson hours
Language	Italian
Activity type	WRITTEN TEST
Teacher	NOLA PAOLA (titolare) - 3 ECTS ROSSI GRAZIANO - 3 ECTS
Prerequisites	To have a good background about Botany and Ecology (to have attended the courses of Botany and Ecology is preparatory).
Learning outcomes	Knowledge about the most important instrument available for studying plant ecology, with particular reference to: interaction between plant and environment, climate and plant response to climate change, geographical distribution of plant species and floristic cartography, biodiversity conservation. Ability to read and understand a scientific paper about a subject concerning plant ecology.
Course contents	Part 1. Climate and Phytoclimate: Environmental factors influencing plant life; Methods for obtaining and processing climatic data; Synthesis and graphical representations of climatic data; Phytoclimatic indexes

and their use in studies of plant ecology. Adaptation to the environment: Morphological and anatomical adaptations of plants to the main environmental factors; Coding systems of the survival strategies and the ecological plants behavior; Plants as bioindicators. Dendroecology: Basic elements for the study of annual growth rings in woody plants; Tree-ring features and environmental factors. Principles of dendrochronology; Qualitative and quantitative analysis of growth rings; Dendroecological case studies.

Part 2. Aspects of Phytogeography and Geobotany. Chorology, with special reference to the factors that determine the limits of distribution and types of distribution area. Floristic studies, importance of herbaria, native and exotic flora. Floristic cartography. Ecology of seed germination. Morphology and anatomy of the seed is recalled and germination ecology is deepened. Aspects of Conservation Biology. Threat factors. Red Lists (IUCN). In and ex situ conservation. Germplasm Banks, with eg. the University of Pavia Seed Bank. Translocations. Outline of legislation on biodiversity conservation, as well as international conventions (CBD, GSPC, ESPC; Berne; Whashington CITES; Dir. Habitat 92/43 EEC).

Teaching methods	Lectures and laboratory activities. In 2020-2021, the course foresees streaming or recorded lectures as a consequence of COVID-19 emergency.
Reccomended or required readings	Lecture notes will be available
Assessment methods	Learning is verified through a written test composed of different type of questions: - Questions requiring explanation or definition of a specific term, verifying knowledge and competence about the specific language. - Questions requiring the recognition of schemes or graphics, verifying the student ability in applying the knowledge acquired by recognition of process and phenomenon, technical of sampling and methods for data acquisition, data processing and representations. - Questions requiring a short description of a subject included in the course program, aiming to verify language use, synthesis and the deep understanding of theoretical concepts.
Further information	All the lectures (slides) and other study materials are uploaded on the platform KIRO, available on line to all the students
Sustainable development goals - Agenda 2030	$lbl_legenda_sviluppo_sostenibile