



UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Scienze Agrarie, Alimentari e Forestali		
ACADEMIC YEAR	2021/2022		
MASTER'S DEGREE (MSC)	LANDSCAPE ARCHITECTURE		
INTEGRATED COURSE	VALUE OF BIODIVERSITY IN AGRICULTURAL LANDSCAPES (PROFILE 2) - INTEGRATED COURSE		
CODE	21470		
MODULES	Yes		
NUMBER OF MODULES	2		
SCIENTIFIC SECTOR(S)	AGR/11, BIO/02		
HEAD PROFESSOR(S)	COLAZZA STEFANO	Professore Ordinario	Univ. di PALERMO
OTHER PROFESSOR(S)	COLAZZA STEFANO	Professore Ordinario	Univ. di PALERMO
	VENTURELLA GIUSEPPE	Professore Ordinario	Univ. di PALERMO
CREDITS	13		
PROPAEDEUTICAL SUBJECTS			
MUTUALIZATION			
YEAR	2		
TERM (SEMESTER)	1° semester		
ATTENDANCE	Not mandatory		
EVALUATION	Out of 30		
TEACHER OFFICE HOURS	COLAZZA STEFANO Tuesday 09:00 12:00 studio 104 - Ed.5.A.P1-06 Wednesday 09:00 12:00 studio 104 - Ed.5.A.P1-06 Thursday 09:00 12:00 studio 104 - Ed.5.A.P1-06 VENTURELLA GIUSEPPE Tuesday 09:30 13:30 Dipartimento Scienze Agrarie, Alimentari e Forestali, Viale delle Scienze Ed. 5, ex Istituto di Patologia Vegetale, 1 Piano, Palermo		

DOCENTE: Prof. STEFANO COLAZZA

PREREQUISITES	basics of biology
LEARNING OUTCOMES	CONOSCENZA E CAPACITÀ DI COMPrensIONE - Conoscenza dei principi generali di valutazione della biodiversità vegetale e dell'artopodofauna degli ecosistemi naturali ed antropici mediterranei. CAPACITÀ DI APPLICARE CONOSCENZA E COMPrensIONE - Capacità di sapere organizzare in autonomia indagini su valutazioni della biodiversità della fauna artopode e della flora vascolare e crittogamica tipica delle formazioni naturali ed antropiche mediterranee. Capacità di effettuare rilievi e definire protocolli di campionamento e monitoraggio della biodiversità. Capacità di consultare ed interpretare testi scientifici, cogliendo altresì i contenuti utili per eventuali applicazioni pratiche nell'attività professionale. AUTONOMIA DI GIUDIZIO - Capacità di analizzare ruolo ecologico degli artropodi e loro utilizzo come indicatori ecologici, in relazione alle rispettive connessioni con le condizioni ecologiche (substrati, clima e fattori antropici) in cui esse insistono. Sapere valutare i risultati di studi scientifici a carattere crittogamico, floristico, fitosociologo e sinfitosociologico. ABILITÀ COMUNICATIVE - Sapere esporre relazioni ed indagini sulla biodiversità floristico-crittogamica, fitocenotica e paesaggistica. Capacità di esporre i risultati di studi anche in rapporto alle possibili applicazioni nelle messa in atto di misure per incrementare la biodiversità, nella conservazione della natura, nella riqualificazione ambientale, ecc. CAPACITÀ D'APPRENDIMENTO - Capacità di aggiornamento attraverso la consultazione di pubblicazioni scientifiche connesse con le discipline richiamate.
ASSESSMENT METHODS	Gli studenti saranno valutati sugli argomenti affrontati durante il corso integrato. Il voto varia da 18 (minimo) fino a 30 con lode. Gli studenti affronteranno una prova pubblica finale organizzata come presentazione su un caso studio a scelta. Inoltre, saranno poste allo studente da 3 a 5 ulteriori domande, per verificare la conoscenza acquisita che sarà valutata considerando la correttezza delle risposte, la pertinenza del linguaggio, l'abilità di esprimere connessioni logiche tra gli argomenti proposti e richiesti.
TEACHING METHODS	Frontal teaching; guided discussion; seminars held by students or by invited guests; written and oral activities

MODULE
PLANT BIODIVERSITY AND AGRICULTURAL LANDSCAPE MANAGEMENT

Prof. GIUSEPPE VENTURELLA

SUGGESTED BIBLIOGRAPHY

Battisti et al. 2013. Biodiversità, disturbi, minacce. Dall'ecologia di base alla gestione e conservazione degli ecosistemi. Editore: Forum Edizioni

AMBIT	20873-Attivit Formative Affini o Integrative
INDIVIDUAL STUDY (Hrs)	102
COURSE ACTIVITY (Hrs)	48

EDUCATIONAL OBJECTIVES OF THE MODULE

Ability to understand the key role in ecosystems of plants. Ability to assess the importance of conserving plant resources as a source of food, medicinal compounds, and raw materials for many industries. Ability to understand the causes of progressively declining levels of plant biodiversity. Ability to understand how preserving plant biodiversity contributes to climate mitigation, limiting atmospheric pollution, and maintaining ecosystems. Ability to analyze landscape approaches and large-scale processes in an integrated, multidisciplinary manner, combining natural resource management with environmental and livelihood considerations. Ability to analyze the landscape approach in terms of human activities and their institutions, viewing them as an integral part of the system rather than as external agents. Gain knowledge of integrated landscape management i.e., the management of production systems and natural resources in an area large enough to produce vital ecosystem services and small enough to be managed by the people who use the land and produce those services. Ability to create a network for integrated landscape management and enable long-term collaborations among diverse groups of land managers and stakeholders.

SYLLABUS

Hrs	Frontal teaching
3	Natural ecosystems
3	Plant biodiversity: definitions, in situ and ex situ conservation strategies
6	Bioprospecting: plants, fungi, lichens, bryopytes
4	Ecosystems services
Hrs	Practice
8	Plant biodiversity conservation: Case study
10	Ecosystems management
4	Land managers and stakeholders
Hrs	Workshops
10	Integrated management of agricultural and forest landscape

MODULE INSECT BIODIVERSITY AND AGRICULTURAL LANDSCAPE MANAGEMENT

Prof. STEFANO COLAZZA

SUGGESTED BIBLIOGRAPHY

Reconciling agricultural production with biodiversity conservation (2020) Edited By Paolo Bàrberi, Anna-Camilla Moonen. London
Imprint Burleigh Dodds Science Publishing. DOI <https://doi.org/10.1201/9781003047926>. DOI <https://doi.org/10.1201/9781003047926>.

AMBIT	20873-Attivit Formative Affini o Integrative
INDIVIDUAL STUDY (Hrs)	119
COURSE ACTIVITY (Hrs)	56

EDUCATIONAL OBJECTIVES OF THE MODULE

Knowledge and understanding. Ability to use the specific language of these disciplines. Applying knowledge and understanding Students are expected to gain the ability to recognize the main insect pests and assess the positive and negative effects of insects in the environment, to know the relationship between insects and plants, damage caused by the insects, and the influence of biotic and abiotic factors. They should also acquire the ability to organize the learned concepts in a coherent and effective way, choosing, basing on the concepts learned and on one's own opinion, the most appropriate techniques according to the different scenarios in the field. Communication skills. Students are expected to achieve the ability to communicate to stakeholders the knowledge and techniques acquired in order to make them applicable in integrated pest management programs. They should be able to advocate the importance of strategies to control insect pest and to highlight their environmental impacts. Lifelong learning skills Students are expected to gain the ability to update their knowledge by reading scientific publications about the agrarian entomology field and, in particular, about low environmental impact strategies. They should also gain the knowledge and skills required to attend both second level master and in-depth courses as well as seminars in the entomological field.

SYLLABUS

Hrs	Frontal teaching
16	Arthropods and their identification
6	Ecological role of arthropods and their use as ecological indicators
8	Arthropods and the environment: diversity, habitat fragmentation and ecosystem services
Hrs	Practice
6	Diversity and arthropods
6	Field and laboratory exercise: sampling and monitoring
6	Arthropods and environment, from a preliminary study to management and infrastructure planning
Hrs	Workshops
8	Sampling methods and populations monitoring