



UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Scienze Agrarie, Alimentari e Forestali		
ACADEMIC YEAR	2019/2020		
MASTER'S DEGREE (MSC)	AGRICULTURAL PRODUCTIONS AND TECHNOLOGIES		
INTEGRATED COURSE	DEFENCE OF ORNAMENTAL VEGETATION		
CODE	12579		
MODULES	Yes		
NUMBER OF MODULES	2		
SCIENTIFIC SECTOR(S)	AGR/12, AGR/11		
HEAD PROFESSOR(S)	DAVINO SALVATORE	Professore Ordinario	Univ. di PALERMO
OTHER PROFESSOR(S)	DAVINO SALVATORE	Professore Ordinario	Univ. di PALERMO
	MANACHINI BARBARA ROSY INES	Professore Associato	Univ. di PALERMO
CREDITS	9		
PROPAEDEUTICAL SUBJECTS			
MUTUALIZATION			
YEAR	2		
TERM (SEMESTER)	2° semester		
ATTENDANCE	Not mandatory		
EVALUATION	Out of 30		
TEACHER OFFICE HOURS	<p>DAVINO SALVATORE Tuesday 16:00 19:00 Edificio 5 Stanza P1-50</p> <p>MANACHINI BARBARA ROSY INES Tuesday 10:00 11:30 Viale delle Scienze, 13. Edificio 5A, stanza 004 Thursday 10:00 11:30 Ricevimento studenti polo Trapani c/o la sede del polo di Trapani, Via del principe di Napoli e on line su richiesta.</p>		

DOCENTE: Prof. SALVATORE DAVINO

PREREQUISITES	Basic knowledge of Entomology and Plant pathology
LEARNING OUTCOMES	<p>Knowledge and ability to understand - Acquisition of advanced tools for the understanding and evaluating of infestation and infection by parasites of ornamental plants. The ability to use the specific language in such specialized disciplines.</p> <p>Applying knowledge and understanding - Ability to identify and apply the most appropriate methods of control of pests and pathogens of ornamental plants.</p> <p>Making judgements - To be able to evaluate the implications and results of the entomological, microbiological and mycological studies performed. Being able to evaluate the implications and results of entomological and phytopathological studies. To define, in the light of the acquired knowledge, the causes of infestations and infections from parasites of ornamental plants.</p> <p>Communication abilities - Ability to expose the mechanisms of infections and infestations from pests and plant pathogens both technical that a non-expert public. Being able to select a suitable synthetic and technical language for communication problems and to suggest useful solutions. Learning ability. To acquire the ability to identify agents of infestations and infections in ornamental plants in order to define the most rational methods both for their control and for management of the health of plants in ornamental field.</p>
ASSESSMENT METHODS	<p>The final grade is expressed in thirtieths and is the weighted mean of the scores attributed to the single courses.</p> <p>For the course "Controllo integrato delle malattie delle piante ornamentali", an oral exam in which the examinees must answer at least two / three questions posed orally, on all topics covered in class, with reference to the recommended text books and available class material. Final assessment aims to evaluate whether the student has knowledge and understanding of the topics, has acquired interpretative skills and independence of judgment in real cases. Evaluation is presented in scores out of 30 with a minimum score of 18 for passing, according to the following table:</p> <ul style="list-style-type: none">- sufficient/basic knowledge and ability to connect, apply and analyze covered topics (score 18-21)- fair/intermediate knowledge and ability to connect, apply and analyze covered topics (score 22-25)- good/high knowledge and ability to connect, apply and analyze covered topics (score 26-28)- excellent/advanced knowledge and ability to connect, apply and analyze covered topics (score 29-30L). <p>Concerning the course of "Artropodi delle Piante ornamentali" students may choose one of the following modalities:</p> <ol style="list-style-type: none">1) An oral examination on all the topics. The grade is expressed in thirtieths.2) Two written in progress evaluations and a final oral test, each about one-third of the course topics. A score in thirtieths is given for each evaluation. The final grade is the mean of the three scores.
TEACHING METHODS	Lessons, field and laboratory activity

**MODULE
INTEGRATED PHYTOPATHIES CONTROL**

Prof. SALVATORE DAVINO

SUGGESTED BIBLIOGRAPHY

Materiale distribuito nel corso delle lezioni.

Testi di riferimento

- Lorenzini G., Principi di Fitoiatria . Edagricole Bologna. 2001. ISBN: 88-506-0032-1
- Chet I., Innovative Approaches to Plant Disease Control . John Wiley & Sons Inc., 1987. ISBN: 0-471-80962-4.

AMBIT	21005-Attività formative affini o integrative
INDIVIDUAL STUDY (Hrs)	45
COURSE ACTIVITY (Hrs)	30

EDUCATIONAL OBJECTIVES OF THE MODULE

The main goal is to provide a review of the current trends towards sustainable plant protection with particular regard to the environmental impact, based on an the analysis of the evolutionary scenario of plant protection. On the basis of epidemiological knowledge will be examined modern intervention and containment strategies taking as a reference point an integrated and biological approach. The student will acquire sufficient skills to be able to relate critically to the problems of pest management and to the management of plant diseases.

SYLLABUS

Hrs	Frontal teaching
1	Plant pathology related to crop management. Evolution of crop protection towards new sustainable models.
1	Introduction to Plant pathology diagnosis
4	traditional diagnostic tests, diagnostic tests through the use of biochemical markers, serological tests, nucleic acids detection, PCR, RFLP, SSCP, cloning and sequencing, phylogenetic analysis.
3	Epidemiology and study on previsional spread of diseases
4	Agrochemicals: Physical and chemical characteristics, classification, use, detention
9	Sustainable crop protection strategies
Hrs	Practice
2	decision support systems
Hrs	Workshops
6	DAS-ELISA test, nucleic acids extraction, PCR and Electrophoresis gel

MODULE
ARTHROPODS OF ORNAMENTAL PLANTS

Prof.ssa BARBARA ROSY INES MANACHINI

SUGGESTED BIBLIOGRAPHY

Pollini –Manuale di Entomologia applicata. Edagricole;
Tremblay – Entomologia applicata. Liguori Editore, Napoli
Avversita' delle piante ornamentali. Edizioni L'Informatore Agrario

AMBIT	50545-Discipline della difesa
INDIVIDUAL STUDY (Hrs)	90
COURSE ACTIVITY (Hrs)	60

EDUCATIONAL OBJECTIVES OF THE MODULE

The goal of the course is to delve into some topics concerning the main insect pest of ornamental plants in urban environments, such as parks and gardens, and to introduce students to the knowledge of the methodologies and innovative tools to develop efficient and sustainable strategies in these urban green areas. The main phytophagous species of ornamental plants and the strategies to control them will be treated.

To make students develop their learning skills, critical analysis and communication ability, case studies will be assigned that will be carried out individually or in groups and then presented in the classroom.

SYLLABUS

Hrs	Frontal teaching
1	Introduction: overview and goals
1	Systematics of insects
2	Fundamentals of main key pest order: Coleoptera
2	Fundamentals of main key pest order: Lepidoptera
2	Fundamentals of main key pest order: Rhynchota
2	Fundamentals of main key pest order: Hymenoptera
2	Fundamentals of main key pest order: Diptera, Thysanoptera
8	Types of damage caused by insect pests. Control methodologies of insect pests. Chemical, integrated and biological control. Mechanical, microbiologic and biotechnical tools
4	Xylophagous insects (Coleoptera, Lepidoptera)
4	Insect defoliators (Lepidoptera and Coleoptera)
2	Leaf miner insects
6	Sap sucker insects (Rhynchota Heteroptera and Homoptera)
2	Palm insect pests
2	Phytophagous alien insects
Hrs	Practice
12	Identification of main insect pests of ornamental plants (laboratory and field exercises)
4	Case studies presented by the students, individual and/or group work
Hrs	Others
4	Evaluations in progress and subject proposed by students