

STUDY GUIDE

SUSTAINABLE PEST CONTROL

Organised by
University of Catania

1. IDENTIFYING DATA.	
· Course Name.	Stustainable Pest Control
· Coordinating University.	University of Catania
· Partner Universities Involved.	Polytechnic Institute of Viseu
· Course Field(s).	Agricultural Entomology

· Related Study Programme.	MSc Agricultural Science and Technology	
· ISCED Code.	081	
· SDG.	1, 2, 3, 12, 13, 15	
· Study Level.	M	
· EUNICE Key Competencies	Problem solving	
	Teamworking	
	Communication	
	Self-management	
	Cognitive flexibility	
	Digital competence	
	Technical competence	
	Global intercultural competence	

· Number of ECTS credits allocated.	6
· Mode of Delivery.	Online live, with some exception for the lab and field activities
· Language of Instruction.	English
· Course Dates.	March-June
· Precise Schedule of the Lectures.	3h classes, twice a week (in previous years Monday and Wednesday 11-14, but this may change)
· Key Words.	Integrated Pest Management, Sustainability
· Catchy Phrase.	Integrated pest control for cleaner food production

· Prerequisites and co-requisites.	<ul style="list-style-type: none"> - English B2 - Basic knowledge of agricultural Entomology may help
· Number of EUNICE students that can attend the Course.	45
· Number of EUNICE students that can attend the course per institution	5 per partner institution
· Course inscription procedure(s).	EUNICE Platform

2. CONTACT DETAILS.

· Department.	Department of Agriculture, Food and Environment
· Name of Lecturer.	Lucia Zappala

· E-mail.	Lucia.zappala@unict.it
· Other Lecturers.	Cristina Amaro da Costa (IPV)

3. COURSE CONTENT.

Evolution of the control methods of insect and other arthropod pests. Integrated pest management: principles and application techniques. Principles of biological control. Cultural methods. Biotechnical methods: semiochemicals and signal manipulation. Physical methods. Genetic methods and biotechnologies for pest control. Chemical control: Chemical and biochemical properties of pesticides; Legislation. Examples of IPM applications.

4. LEARNING OUTCOMES.

- 1) Knowledge and understanding: The course aims to provide insights into methods for controlling harmful pests in agriculture in order to develop technical skills for the definition of programs for the protection of plants from insects and other harmful animal organisms. In particular, students will acquire theoretical and practical knowledge on: i) Evolution of the methods of animal pest control; ii) Plant protection methods (agronomic, biological, biotechnical, physical, genetic and biotechnologies, chemical); iii) examples of integrated control applications.
- 2) Ability to apply knowledge and understanding: Through the acquisition of knowledge on the main and most up-to-date techniques for controlling pest infestations, students will acquire the ability to plan modern strategies for sustainable control of animal organisms harmful to agricultural crops.
- 3) Autonomy of judgment: With the help of lectures, laboratory work, field visits and seminars, students will acquire full autonomy in choosing the most effective, sustainable and up-to-date methods for the management of crop pests.
- 4) Communication skills: Through the reading of scientific articles and participation to seminars on specific topics, but above all through the realization, at the end of the course, of thematic group studies with consequent presentation of the relative results, students will develop a correct technical-scientific terminology in the field of protection of agricultural crops.
- 5) Learning skills: The course will contribute to the development of skills and autonomy of analysis useful for the development of skills in carrying out technical consultancy activities for the definition of sustainable crop protection plans as well as in carrying out research activities, especially aimed to finding of scientifically valid sources of information, the analysis of scientific results and the preparation of the thesis as well as working in the field of plant protection.

5. OBJECTIVES.

The course aims to provide students with theoretical and practical insights into pest control methods in agriculture, developing technical skills for designing appropriate plant protection programs against insects and other harmful animal organisms.
By the end of the course, students will have acquired specific and up-to-date knowledge of the main techniques for crop pest control.

6. COURSE ORGANISATION.

UNITS

1.	Evolution of control methods of herbivorous arthropods; Integrated pest management: fundamental principles and application tools
2.	Agronomic control; Principles of biological control; Biotechnical methods: semiochemicals and signal manipulation
3.	Physical control; Genetic control and Biotechnology for crop protection
4.	Chemical control: chemical and biochemical properties of agrochemicals; reference legislation

LEARNING RESOURCES AND TOOLS.

Lecture presentation, papers, web resources, laboratory and field activities

PLANNED LEARNING ACTIVITIES AND TEACHING METHODS.

Lectures, seminars, lab and field activities (onsite)

7. ASSESSMENT METHODS, CRITERIA AND PERIOD.

Two written intermediate tests (mid-term on Units 1 and 2 and final on Units 3 and 4) and one final presentation on an example of integrated pest management.
The evaluation will be made out of thirty. It will be necessary to obtain at least a pass (18/30) in all the tests to consider the exam passed.

OBSERVATIONS.

8. BIBLIOGRAPHY AND TEACHING MATERIALS.

- Kogan, M.; Jepson, P. C. 2007. Perspectives in ecological theory and integrated pest management. Cambridge University Press [ISBN: 9780511752353]
- Coll, M., Wajnberg, E. (Eds.) 2017. Environmental pest management : challenges for agronomists, ecologists, economists and policymakers. John Wiley and Sons Ltd [ISBN: 9781119255550]
- Gurr, G., Wratten, S., Synder, W. E., & Read, D. (Eds.) (2012). *Biodiversity and insect pests: Key issues for sustainable management*. (1st ed.) Wiley-Blackwell.
- Further material will be provided to the students