

General information		
Academic subject	Agricultural Zoology and Entomology	
Degree course	Agricultural Science and Technology	
Academic Year	2th	
European Credit Transfer and Accumulation System (ECTS)	6	
Language	Italian-English	
Academic calendar (starting and ending date)	I semester	
Attendance	optional	

Professor/ Lecturer	
Name and Surname	Domenico Valenzano
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Telephone	Office – 080 5442880
Department and address	Agricultural Zoology and Entomology section – middle building, 5 th floor
Virtual meeting	Teams code: cnjsorl
Tutoring (time and day)	e-mail appointment, Video call On Thursday (AM 9:00-11:00)

Syllabus	
Learning Objectives	
Course prerequisites	No prerequisites
Contents	<ul style="list-style-type: none"> • Animals organization – Introduction. Gas exchange, circulatory system, excretion and osmoregulation, eating and nutrition, nervous system, endocrine system, skeletal system and movement. Symmetry and metamerism. • Reproduction and development – Agametic and gametic reproduction. Types of eggs. Embryonic and post-embryonic development. • Phylogeny and Classification - Evolutionary theory and adaptation phenomena. Definition of Species, zoological nomenclature, classification, systematics. • Ethology and Ecology – Main concepts of ecology and population dynamics. Innate and learned behaviors. Social animals. Symbiosis. Communication, mimicry, rhythms and biological clocks. Dispersion. • main Phyla in agriculture: Nematodes , arthropods, molluscs and chordates • Collection, conservation and identification of animals. • General morphology and anatomy of insects - Exo - and endoskeleton. Head, thorax and abdomen. Colors. The nervous, digestive, circulatory, respiratory, excretory, secretory and reproductive systems. • Insect embryonic and post-embryonic development. • Individuals communication. Insect aggregations and societies. • Integrated pest management: biological, biotechnical, cultural, physical, chemical. • Notes on the most important Orders of insects
Books and bibliography	<ul style="list-style-type: none"> • Notes on the lectures and other didactic material distributed during the course. • Integrated principle of Zoology (Cleveland et al., 2005, McGraw-Hill).
Additional materials	The teacher's Power Point presentations are available on Microsoft Teams (cnjsorl) or by email

Work schedule			
Total	Lectures	Hands on (Laboratory, working groups, seminars, field trips)	Out-of-class study hours/ Self-study hours

Hours			
150	32	28	90
ECTS			
6	4	2	
Teaching strategy			
	The course topics will be featured with PowerPoint presentations and movie support.		
Expected learning outcomes			
Knowledge and understanding on:	<ul style="list-style-type: none"> ○ Animal Phyla main characteristics and structural organization ○ animal morphology, anatomy and physiology. ○ Basic knowledge of ethology, ecology, phylogeny and classification. ○ In-depth knowledge of Phyla of agrarian interest: Nematodes, Arthropods, Molluscs and Chordates. ○ Insect morphology, anatomy, ethology and ecology. ○ harmful animals populations regulating factors. ○ General strategies of control of harmful animals. ○ Ability to deep learn the main subjects of the teaching. 		
Applying knowledge and understanding on:	<ul style="list-style-type: none"> ○ Identify animals. ○ Apply integrated control strategies for a sustainable harmful animal containment populations 		
Soft skills	<ul style="list-style-type: none"> ● <i>Making informed judgments and choices</i> <ul style="list-style-type: none"> ○ Ability to identify issues related to insects and other animals. ● <i>Communicating knowledge and understanding</i> <ul style="list-style-type: none"> ○ Ability to relate to the world of research and agri-food production ● <i>Capacities to continue learning</i> <ul style="list-style-type: none"> ○ Ability to learn and deepen the main subjects of the teaching. 		

Assessment and feedback	
Methods of assessment	For “on current year” enrolled students is possible an oral intermediate exam to complete with a final exam, final grade is obtained as the average between the grade on the intermediate exam and the final exam. For foreign students the exam can be evaluated with written multiple-choice test. vote expressed in thirtieths
Evaluation criteria	<ul style="list-style-type: none"> ● <i>Knowledge and understanding</i> <ul style="list-style-type: none"> ○ The student must demonstrate to know: ○ the main characteristics and structural organization of the main animal Phyla, ○ animal morphology, anatomy and physiology, ○ basic ethology, ecology, phylogeny and classification. ○ Phyla of agrarian interest: Nematodes, Arthropods, Molluscs and Chordates, ○ insect morphology, anatomy, ethology and ecology. ○ biotic and abiotic factors regulating the populations of harmful animals ○ strategies and means of control of harmful animals. ● <i>Applying knowledge and understanding</i> <ul style="list-style-type: none"> ○ The student must own the ability: ○ to identify animals ○ to apply the integrated control strategies and means for the containment of harmful animal populations in respect of the environment and human health. ● <i>Autonomy of judgment</i> <ul style="list-style-type: none"> ○ The student must be able to apply the acquired knowledge to identify issues related to insects and other animals. ● <i>Communicating knowledge and understanding</i> <ul style="list-style-type: none"> ○ The student must be able to relate to the research and agri-food production ● <i>Communication skills</i>

	<ul style="list-style-type: none"> ○ Refer properly to research and agri-food production world ● <i>Capacities to continue learning</i> ○ Deep learning of main taught subjects.
Criteria for assessment and attribution of the final mark	Will be assessed the acquired knowledge quality, ability to analyze and link different topics.
Additional information	