

Teacher(s)	Bragard Claude (coordinator) ;Renoz François ;
Language :	French
Place of the course	Louvain-la-Neuve
Prerequisites	LBIO 1231 Animal Biology
Main themes	Topics covered: - Classification and reason of the evolutionary success of insects; - Physiology, internal anatomy and life cycle - Interaction with the physico-chemical environment - Reproductive strategy; - Plant-insect interaction - Eco-evolutionary Entomology; - Thermoregulation; - Mobility and dispersion - Pollinators and anthropic landscapes - Interactions between species. - In-depth analysis of the main insects and mites injurious to fruit trees, field crops, stored food, vegetable crops and forestry
Learning outcomes	At the end of this learning unit, the student is able to : a. Activity contribution to reference program AA (AA program) M1.1, M1.2, M1.3. M1.4, M1.5, M2.1, M2.2, M2.3, M2.4, M3.2, M3.4, M3.7, M3.8, M4.1, M4.2, M4.3, M4.7, M6.1, M6.2, M6.4, M6.5 b. Specific formulation for this activity to AA program (maximum 10) At the end of this activity, the student is able to: - to identify an insect to the stage of the family and to set up a collection - to prioritize the criteria for classification - to understand the role of insects in terrestrial ecosystems in an evolutionary perspective - to analyze and present concise reasons for the evolutionary success of insects - to relate adaptations and evolutionary selection pressures - to integrate the relationships between individuals, populations and landscapes - to understand the concepts of trade-off and phenotypic plasticity - departing from literature data, to analyze problems with a particular pest species and to propose management solutions
Evaluation methods	- Part A: Written exam and practical work (determinations) with the realization of an insect collection - Part B: Written examination and presentation of work on a species or a given problem.
Teaching methods	- lectures including practical examples and offering active learning mini-activities; - Insect determination; - Establishment of an insect collection - Individual reading of scientific papers, critical analysis and presentation
Content	1 Table of Contents. 1) Introduction - Diversity of the insect world - Phylogeny - Role in the environment, impact on man 2) Morphology, internal anatomy, physiology, adaptation to different environments 3) Life cycle, metamorphosis, hormone regulation, phase change (locusts), diapause and resistance to thermal stress 4) Plant-insect relationships

	6) Behavior and Sociality 7) Eco-evolutionary entomology 8) Thermoregulation 9) Mobility and dispersion 10) Pollinators in anthropogenic landscapes 11) Interactions between insects: the case of the genus <i>Maculinea</i> 12) In-depth analysis of the main mites and insects harmful to arboriculture fruit, large crops, stored food, vegetable crops and forestry 2. Additional Explanation (if required) This course includes two modules that can be combined to form two partims. - Module 1 (22.5 h-15h, 3 credits): General Entomology including practical work; - Module 2 (15 hours, 2 credits): Applied entomology
Inline resources	Moodle
Bibliography	La bibliographie liée au cours est signalée au niveau des supports de cours
Other infos	This course can be given in English.
Faculty or entity in charge	AGRO

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Master [120] in Agricultural Bioengineering	BIRA2M	3		