UCLouvain

lbrpp2102

2019

Entomology applied to agriculture

In view of the health context linked to the spread of the coronavirus, the methods of organisation and evaluation of the learning units could be adapted in different situations; these possible new methods have been - or will be - communicated by the teachers to the students.

4 credits	37.5 h + 15.0 h	Q2

Teacher(s)	Hance Thierry (coordinator) ;Van Dyck Hans ;
Language :	French
Place of the course	Louvain-la-Neuve
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
Aims	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: 1 - 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 - - - - *The contribution of this Teaching Unit to the development and command of the skills and learning outcomes of the programme(s) can be accessed at the end of this sheet, in the section entitled "Programmes/courses offering this Teaching Unit".*
Evaluation methods	**Due to the COVID-19 crisis, the information in this section is particularly likely to change.** - Part A: Written exam and practical work (determinations) with the relization of an insect collection - Part B: Written examination and presentation of work on a species or a given problem.
Teaching methods	**Due to the COVID-19 crisis, the information in this section is particularly likely to change.** - 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 Maculinea 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	les supports de cours obligatoires (diapositives power point, syllabus, documents de référence et articles scientifique) sont mis à disposition de l'étudiants sur Moodle
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	Aims
Master [120] in Agricultural Bioengineering	BIRA2M	4		