Issued by University of Basilicata

SINCE

TAGS: *Insect, Molecular biology, Innovative biotechnologies*

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Entomological Biotechnology

The holder of this badge has attended the course **"Entomological Biotechnology"** organized by the University Basilicata as part of the "Competenze trasversali in Unibas" Project.

The course "Entomological Biotechnology" is divided into 5 modules, in which theoretical moments alternate with moments in which theoretical knowledge becomes application, to introduce the student to the world of the laboratory.

The 5 modules are divided as follows:

- Basic elements of insect morphology and functional anatomy;
- Identification and functional characterization of genes and molecules of insects and other organisms associated with them, for the development of innovative biotechnologies for the control and management of harmful insects and beneficial insects;
- Role of insects in the transmission of diseases to humans and animals and description of pathologies in humans and animals transmitted by insects as pathogen vectors and description of the diagnostic methodologies of pathogens transmitted by insects;
- Insects of forensic interest and the contribution of molecular biology to forensic entomology through identification by molecular analysis of the species found on the crime scene);
- Insects protagonists of the circular economy, from the insect breeding for the valorization of waste products to products of high biological and economic value deriving from the bioconversion process (lipids, proteins, chitin, manure) and their applications, to elements of European and world legislation for insects as food and feed.

At the end of the course students will have acquired the knowledge on the anatomical and physiological characteristics of insects and on the identification and the functional characterization of genes and molecules of insects and other organisms associated with them for the development of innovative biotechnologies, with particular interest for the control and management of harmful insects; knowledge useful for the recognition of vector insects of diseases for humans and animals and the main diseases caused by viruses, bacteria and protozoa of which some insects are vectors and for the recognition of insects of forensic interest. Students will also acquire knowledge on bioconverter insects, on products deriving from the bioconversion process (proteins, lipids, chitin and manure) and their use in the food, pharmaceutical and agricultural fields. In addition, at the end of the course, the student will acquire basic theoretical skills to operate in the laboratory, understand and compare the use of different techniques and methodologies, learning to evaluate the most appropriate ones. The main knowledge provided will be based not only on consolidated contents in textbooks, but also on the most innovative results of scientific research in the sector, including reading, understanding and critical evaluation of the latest scientific works.

The course also intends to represent a moment of strong interpersonal interaction, between teacher and student, but also among the students. The constant interaction with the teacher will stimulate the student to self-evaluate his/her basic knowledge and those to be acquired in order to profitably face the study of the topics covered.

Skills

The owner of this Badge has proved to have the following competences:
– Ability to understand, collect and organize in a functional way the information received during the hours of lectures and seminars held by experts or researched on recommended texts and available scientific reference literature;
– Ability to apply the knowledge acquired;
– Ability to choose and judge which result of the teaching approach, in which the theoretical training is combined by numerous practical examples and concrete applications of the techniques learned during the course;
– Ability to communicate, organizing in a logical and exhaustive way the knowledge and skills acquired, using correct language.

The owner of this Badge has displayed the following soft skills:
– Ability to coordinate with other students;
– Ability to exercise the critical spirit in evaluating the resources to be used;
– Ability to communicate effectively;
– Ability to analyze the information received.

The owner of this Badge has displayed an overall knowledge in:
– Insects general, morphology, anatomy and physiology;
– Identification and functional characterization of genes and molecules of insects and other organisms associated with them for the development of innovative biotechnologies for the control and management of harmful insects and beneficial insects;
– Role of insects in the transmission of diseases to humans and animal; pathologies in humans and animals transmitted by insects as pathogen vectors; diagnostic methodologies of pathogens transmitted by insects ;
– Insects of forensic interest; contribution of molecular biology to forensic entomology;
– Insects protagonists of the circular economy; insect breeding for the valorization of waste products; products of high biological and economic value deriving from the bioconversion process and their applications.

Criteria

The Badge is awarded following the attendance of " Entomological Biotechnology" course. The assignment of the Badge is subject to passing the oral exam.
The overall duration of the course is 48 hours.

Issued by University of Basilicata

The University of Basilicata is the leading University of the Basilicata region, in the Southern part of Italy. Since 2012, according to the new University statute and rules of procedure, ex D.R. n. 88/2012, the University of Basilicata is organized through six primary structures (precisely four departments and two schools) in which the functions and the personnel of the pre-existing twelve departments and eights faculties have been re-addressed. Degree programs range from the Humanities, to architecture, archeology, education, economics and management, as well as to the STEM disciplines (hard sciences, agriculture, engineering, computer sciences). Such degree programs are effectively connected to the research, training and third mission activities developed by the primary structures. University of Basilicata counts about 7000 students, and is based in the cities of Potenza and Matera.

Badge Numbers

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