

BAGB208 Apiculture Production

ECTS Value: 5 ECTS

Overall Objectives and Outcomes

This module was developed to assist participants to master the skills of logical thinking and scientific questioning. Learners will be introduced to the importance of beekeeping to human kind, their products and their husbandry. The Apiculture module covers the following important topics, biology of the bee, anatomy, basic colony management, pests and diseases, reproduction and genetics.

The module is applicable to participants who wish to increase the knowledge of bees as social insects and the art of bee keeping. Learners will be required to enquire current beekeeping problem and therefore develop their scientific knowledge about this subject.

Upon completion they will have increased their interest in the culture of the most useful insect in nature and have gained knowledge on the members of the hive, the bee biology and anatomy, the functions of a bee colony, swarming, types of hives, hive preparation and management, pests and diseases, their prevention and cure and products from the hive. Thus, they will understand the key areas of apiculture and apply scientific reasoning to practical investigation.

By the end of this module, the learner will be able to:

Competences

- a. Introduce the members of the hive and their different biological and anatomical difference;
- b. sustain the functions of the bee colony, types of hives, hive preparation and management;
- c. master the prevention and cure of the main bee pests and diseases;
- d. manage bee reproduction and swarming prevention;
- e. appreciate the products from the hive.

Knowledge

- a. understand the difference between of the members of the hive, the queen the workers and the drone;
- b. foster the knowledge of the biology of the bee and genetics;
- c. communicate about the bee anatomy and physiology and the main body parts;
- d. understand the function of the bee in nature and pollination;
- e. associate pests, parasites and diseases with the damage of a bee colony;
- f. understand the bee reproduction cycle and genetics;
- g. know the favourable conditions which trigger swarming and swarm prevention;

- h. determine the differences between different types of hives and apiculture equipment;
- i. be familiar with the products of the bee hive.

Skills

- a. determine the role of the members of the hive;
- b. demonstrate the three factors that affect the annual cycle of a bee colony in the Maltese Islands;
- c. illustrate the bee main body parts and their function;
- d. show how bees communicate with each other in the hive when they find a nectar or pollen source and how they do it when preparing to swarm;
- e. draw the life cycle of the Varroa mite (*Varroa destructor*) and how can this kill a bee colony;
- f. show how keeping apiary equipment clean can prevent lot of pest and diseases;
- g. design an apiary and its best site selection;
- h. produce a diagram showing different types of hives used around the world;
- i. conclude which are the bee hive products;
- j. know the main characteristics of a bee main body parts;
- k. observe signs in the bee hive that indicates that a colony is going to swarm;
- l. examine frames to check for pests, parasites and disease;
- m. evaluate the effect of a queen less colony;
- n. assess the differences in different types of hives;
- o. know the health benefits of the different bee hive products;
- p. discuss how bee collect pollen and honey;
- q. explain the natural bee reproductive cycle;
- r. describe how to construct one type of bee hive;
- s. discuss the theory behind artificial swarming;
- t. describe how pest and disease can affect honey production;
- u. understand the terms used in the construction of a hive;
- v. undertake further studies on the prevention of parasites, pests and diseases;
- w. start a new colony from an artificial swarm;
- x. use a camera to capture images of the different stages in the life cycle of a bee;
- y. play video clips to learn different techniques in how to capture a swarm;
- z. keep records on PC or laptop.

Mode of Delivery

This module adopts a blended approach to teaching and learning. Information related to the structure and delivery of the module may be accessed through the IfE Portal. For further details, kindly refer to the Teaching, Learning and Assessment Policy and Procedures found on the Institute for Education's website.

Assessment Methods

This module will be assessed through: Theoretical Assignment, Presentation and Practical Assignment.

Suggested Readings

Core Reading List

1. Hooper Ted (2010) Guide to Bees and Honey. Northern Bee Books, Oxford, United Kingdom.
2. Davies Celia F. (2014) The Honeybee Around and About. Bee Craft Ltd, Warwickshire, United Kingdom.
3. Davies Celia F. (2014) The Honeybee Inside Out. Bee Craft Ltd, Warwickshire, United Kingdom.

Supplementary Reading List

1. <https://blog.mbbka.org.uk/>
2. <https://www.bbka.org.uk/>
3. <http://www.dave-cushman.net/>
4. <https://www.thorne.co.uk/>
5. <http://www.ent.uga.edu/Bees/beekeeping.html>
6. <http://www.agf.gov.bc.ca/apiculture/factsheets/index.htm>