

DINABANDHU MAHAVIDYALAYA

E-mail ID: info@dinabandhumahavidyalaya.org
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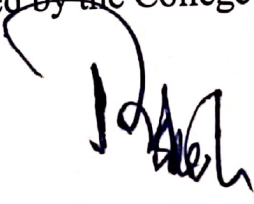
Bongaon, North 24 Parganas
West Bengal, Pin- 743235
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NAAC ACCREDITED-2016(2nd cycle)
Affiliated to West Bengal State University & Formerly under University of Calcutta
Registered under 2(f) & 12(B) of U.G.C. Act 1956
ESTD: 1947

Add on Course
On
Bee keeping
By
Department of zoology
Dinabandhu Mahavidyalaya, Bongaon
Session: 2021-22

OBJECTIVES

- The Complementary course was not adequate to meet the employability requirement of the students. The matter was discussed in the departmental meeting with Principal & IQAC coordinator and the board recommended to introduce an entrepreneurial skill development course for the students on the topic '**Bee Keeping**' of 40hours duration, in Department of Zoology
- Importance of bee keeping
Provide bee wax which is used in many industries, including cosmetics industries, polishing industries, pharmaceutical industries etc.
- Plays an excellent role in pollination
- Certificate will be provided by the College for the participants


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➤ Course Outcomes

1. Illustrate the steps in beekeeping and management
2. Describe various steps in apiculture
3. Attain practical skill in keeping the bee hive and maintain bee colonies
4. Identify the role of beekeeping in enhancing women entrepreneurial skill
5. Understand the composition and applications of bee products
6. Describe the market value of bee products
7. Identify various products from honey bees
8. Understand the biology, morphology, species composition and social life of honey bees.


➤ General Information and Course structure

- Duration: 40 Hrs
- Mode: Blended (Online+Offline)
- Entry Qualification: Hons. And General students of Zoology
- Language: Bengali/ English
- Venue: Dinabandhu Mahavidyalaya, Bongaon
- Starting Date: 21.08.2021

Course Curriculum (40hrs)

Unit I (7 hrs)

1. History of bee keeping
2. Species diversity of honey bees
3. Pollination support through beekeeping -Role of honeybees in ecosystem
 - Domestication of Indian bees and Italian bees
 - Bee hives and peculiarities
 - Capturing of bee colonies


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- Bee keeping equipments

Unit II (6 hrs)

- Biology and social life of honey bees
- Morphology and identification of Queen, drones and worker bees, cast system in honey
- bees-family and cast, division of labor, bee dance and communication in bees
- Honey Bee biology-emerging of queen, swarming, mating, egg laying, life span
- Collection of pollen by bees, morphological modifications - modified legs, extraction of
 - pollen
 - Royal jelly and hormonal influence
 - Bee wax, wax glands
 - Nesting pattern of bees
 - Bee sting, bee venom, venom gland
 - Architectural design of bee hives, types of cells

Unit III (9 hrs)

- Basic operational principles of bee colonies
- Selection of location
- Up keeping of bee colonies
- Off seasonal management of bee colonies
- Growth period management
- Honey flow-seasonal management
- Diseases and parasites of honey bees-control measures

Unit IV (8 hrs)

- Honey and its ingredients
- Composition of honey, conversion of nectar to honey,
- Economic importance of honey and other bee products
- Medical value of honey, special properties and uses of honey, processing and value



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- addition of honey
- Bee wax and uses, extraction, purification, processing and value addition of bee wax
- Bee pollen and bee venom – uses

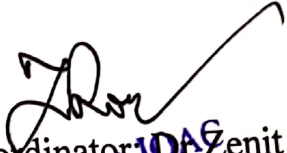
Unit V (6 hrs)

- Marketing aspects of bee products
- Role of Govt and Non-Govt agencies in promoting apiculture
- Present status and future scope of apiculture as a small scale industry in Kerala
- Present scenario and Scope of apiculture in India

➤ Unit VI –Practical Session (4hrs)

- Identification of different casts in honeybees-Queen, drones and workers
- Structure of honey comb-different type of cells for queen, drones and workers
- Morphological peculiarities of worker bees; Honey and pollen storage structures
- Familiarize bee keeping instruments and bee hives


 Principal: Dr. Biswajit Ghosh
Principal/Secretary
 DINABANDHU MAHAVIDYALAYA
 Bongaon, 24 Pgs.(N)


 IQAC coordinator: IQAC
 Co-ordinator: IQAC
 Dinabandhu Mahavidyalaya
 Zenit Roy

Those who are interested may contact to the course coordinator for enrollment of their name.

Course Coordinator : Dipsikha Ghosh (Dept. Of Zoology)