



NALLAMUTHU GOUNDER MAHALINGAM COLLEGE

(AUTONOMOUS AND AFFILIATED TO BHARATHIAR UNIVERSITY)

Re-Accredited by NAAC

An ISO 9001 : 2015 Certified Institution

Aided by the Government of Tamilnadu

POLLACHI - 642 001.

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Ref: NGM/2021/ ZOO/ VA01

DATE :
29-10-2021

CIRCULAR

This is to inform you that the department of zoology (aided) of our college is proposed to conduct a **Value Added Course (VAC) - Bee Keeping and Honey Processing** on 08-11-2021 onwards. The course brochure is enclosed for your reference. Kindly circulate among your students and any further details contact, Head, Department of zoology in room number A. 223.

Encl: Course brochure

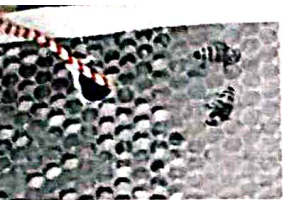
Note: Register your names in the zoology department for participating in the course


HOD - Zoology


PRINCIPAL

To : ALL HOD's.

Copy to : All Department Notice Board.



**Nallamuthu Gounder Mahalingam College (Autonomous),
Pollachi**

Department of Zoology

Value Added Course (VAC) - Bee Keeping and Honey Processing

About us:

The department of biology existed in our college right from its inception from 1957. Our department is a dynamic modern school of biological studies with a reputation of rigorous academic standards, innovation and excellence in teaching and research. Our course was completely revamped keeping in view the requirements of students both in their higher studies and job markets. We have a dedicated team of staff members with an attitude of encouraging and innovating, providing an environment of professional learning and development and creating values for students through sustained academic growth and skill orientation. Zoology is taught as a subject to the students of pre-university course. With the introduction of B.Sc. Botany, Zoology is offered as an ancillary subject to the students of botany major from 1972. The B.Sc. Degree in Zoology was introduced in 1982. A variety of teaching and learning techniques has been employed to impart knowledge and skills to students. Alumni of our department have made their marks in various institutions around the world.

Value Added Course:

The value added course (VAC) offered by Zoology department is completely

employability and entrepreneurship oriented. This course provides the key concepts, which will ultimately results in students getting acquainted with thorough knowledge. Most importantly, our course provides an opportunity for the students to apply theoretical knowledge in hands on practice.

Bee keeping and Honey processing program will be starting from Febraury 2021 to May 2021 for the academic year 2020-21. Students are encouraged to visit on nearby Apiculture farms.

Course Objectives

- To examine the scope of beekeeping in India and other countries
- To identify major bee keeping challenges and opportunities.
- Purchase of honey, wax and their byproducts from bee keeping industry

Module

- * Classification, Biology and Life cycle of honey bee
- * Social organization of honey bee colony -Queen - Drones and Worker
- * Structure of Beehive - Modern bee hive
- * Food of Honeybees
- * Relationship between plants and bee- Plant as habitat- symbiosis-pollination

- * Extraction of honey - Properties, Chemical composition of Honey
- * Nutritional and Medicinal Value of honey
- * Royal jelly – Composition and functions
- * Bee wax – Production, Characteristics and uses of bee wax
- * Bee venom – Characteristics and uses
- * Diseases of honey bee – Bacterial, Viral and Acarine disease
- * Queen rearing by Hopkins method, Miller method and Doolittle method.

Course Outcomes

- ✓ To remember the steps involved in modern bee keeping techniques and its practical difficulties
- ✓ To comprehend methodologies involved in bee keeping
- ✓ To apply modern tools in bee keeping and value added product preparation
- ✓ To validate different bee keeping techniques and its byproducts

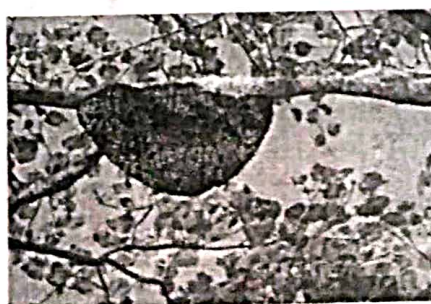
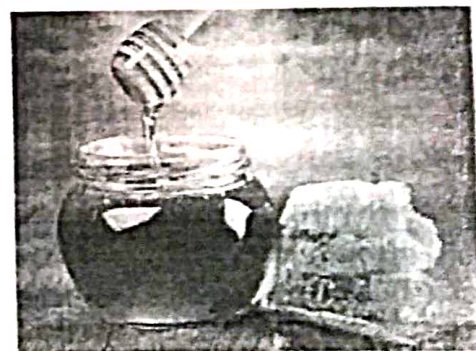
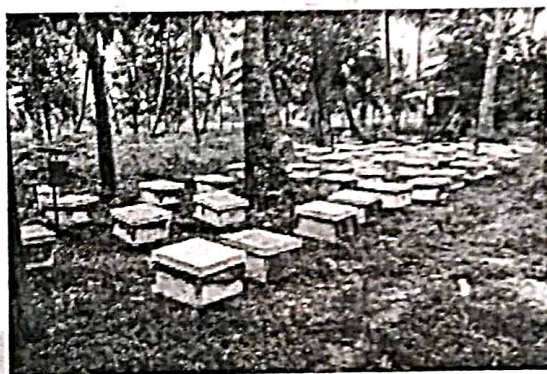
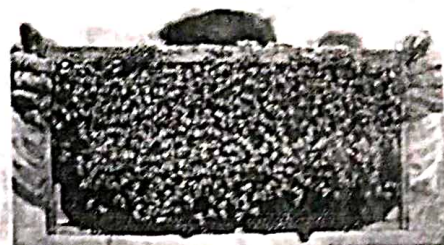
Instructions to Students

- ✚ For admission of VAC- Bee Keeping and Honey Processing register your name in zoology department is must.
- ✚ Confirmation of seat is only after paid the fee to the College administrative office.
- ✚ Fees once paid cannot be refunded under any circumstances.
- ✚ Certificates will be issued only after the successful completion of the examination at the end of the course

For further queries contact

Dr. S. Somasundaram
Assistant Professor and Head
Department of Zoology
NGM College, Pollachi

Mobile: 9486535368



Programme code:	B. Sc	Programme Title :	Zoology	
Course Code:	19UZY6VA	Title	Batch :	2019-2022
		Bee keeping and honey processing (Value added course)	Semester	VI
Hrs/Week:			Credits:	

Course Objectives

- To examine the scope of beekeeping in India and other countries
- To identify major bee keeping challenges and opportunities.
- Purchase of honey, wax and byproducts from bee keeping industry

Course Outcomes (CO)

K1	CO1	To remember the steps involved in modern bee keeping techniques and its practical difficulties
K2	CO2	To comprehend methodologies involved in bee keeping
K3	CO3	To apply modern tools in bee keeping and value added product preparation
K4	CO4	To validate different bee keeping techniques and its byproducts

Unit	Content	Hrs
Unit- I	Scope of Apiculture Classification of honey bee Biology of honey bee – External Structure of worker bee Life cycle of honey bee	6
Unit -II	<i>Social organization of honey bee colony -Queen - Drones and Worker</i> Structure of Beehive Food of Honeybees Relationship between plants and bee- Plant as habitat- symbiosis-pollination	6
Unit- III	Modern bee hive ○ Langstroth hive ○ Newton's hive Bee keeping equipments Extraction of honey Honey – Properties Chemical composition of Honey <i>Value of honey (Nutritional, Medicinal values)</i>	6
Unit- IV	Royal jelly – Composition and functions Bee wax – Production Characteristics and uses of bee wax Bee venom – Characteristics and uses	6
Unit -V	Diseases of honey bee ○ Bacterial disease ○ Viral disease ○ Acarine disease Queen rearing ○ Procedure ○ Hopkins method ○ Miller method and Doolittle method.	6
Total Contact Hrs		30

- *Italics denoted as self study topics*

Book for Study:

1. Arumugam N. (2017) Applied Zoology, Saras Publication, 114/35 G, A.R.P Camp Road, Periyavillai, Kottar PO, Nagercoil -629 002, Kanyakumari

Books for Reference:

1. Bhamrah Kavita Juneja H.S. (2001) 2nd edition. An Introduction to Arthropoda-, Anmol Publications Pvt. Ltd., New Delhi,
2. Shukla. Upadhyay (2003). Economic Zoology –. Rastogi Publications, Shivaji Road, Meerut-250002. India.
3. Dharm Singh & Sevender Pratap Singh, (2006) edition. A handbook of Bee Keeping –Agrobios (India), Jodhpur,
4. Rajendra Singh & Sachan G.C. (2010) 1st edition. Elements of Entomology, , Rastogi Publications, Meerut,
5. Bee keeping basics. MAAREC: Delavane, Maryland, New Jersey, Pennsylvania, West Virginia & the USDA Co-operating PENNSTATE 1855- E-book

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	M	H	H
CO2	H	M	H	H	H
CO3	M	H	H	M	M
CO4	M	H	H	L	H

H-High; M-Medium; L-Low


 HoD
 Dr. M. DURAIRAJU, M.Sc., M.Phil., B.Ed., PGDGC, Ph.D.
 Head & Associate Professor
 Department of Zoology
 NGM College, Pollachi - 642 001
 Tamilnadu.

For

 Principal
 PRINCIPAL
 NGM COLLEGE, POLLACHI



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DEPARTMENT OF ZOOLOGY

Certificate



This is to certify that ~~Mr.~~ /Ms. M. NAVFEN PAVITHRA. (19ZL32)

has successfully completed the Value Added Course on “Bee Keeping and Honey Processing” for 30 hours during December 2021 - 2022 at Department of Zoology, Nallamuthu Gounder Mahalingam College (Autonomous) Pollachi.


Course Co-ordinator


Principal





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DEPARTMENT OF ZOOLOGY

Certificate



This is to certify that ~~Mr.~~ /Ms. K. BAVATHARANI (19 ZL 19)

has successfully completed the Value Added Course on "Bee Keeping and Honey Processing" for 30 hours during December 2021 - 2022 at Department of Zoology, Nallamuthu Gounder Mahalingam College (Autonomous) Pollachi.


Course Co-ordinator


Principal





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DEPARTMENT OF ZOOLOGY

Certificate



This is to certify that ~~Mr.~~ /Ms. **N. RATHIDEVI (19ZL36)**

has successfully completed the Value Added Course on “**Bee Keeping and Honey Processing**” for 30 hours during December 2021 - 2022 at Department of Zoology,
Nallamuthu Gounder Mahalingam College (Autonomous) Pollachi.


Course Co-ordinator


Principal

