

A CERTIFICATE COURSE ON “APICULTURE”

INTRODUCTION :-

Apiculture, also known as beekeeping, is the practice of maintaining honey bee colonies, typically in human-made hives. People have been keeping bees for thousands of years, primarily to harvest the delicious and nutritious honey they produce. However, apiculture offers more than just honey

➤ **Bee Species:**

Honeybees (genus *Apis*) are the most common type of bee kept in apiculture. However, stingless bees like *Melipona* are also raised for their honey production.

- **Products of the Hive:** Honey is the main product most people associate with beekeeping, but there's more to it! Apiculture also involves the collection of beeswax, propolis, pollen, and royal jelly. Beehive
- **The Apiarist:** The person who cares for the bees is called an apiarist, or more commonly, a beekeeper. Beekeepers play a vital role in maintaining the health of the hive and ensuring the bees thrive.
- **The Apiary:** A location where beehives are kept is called an apiary, often referred to as a bee yard. Beekeepers strategically place apiaries near flowering plants to provide a plentiful food source for the bee.
- Apiculture plays a significant role in our lives. Let me know if you'd like to learn more about the importance of bees and beekeeping, or if you'd like to delve deeper into how beehives are maintained and how beekeepers harvest honey and other hive products.

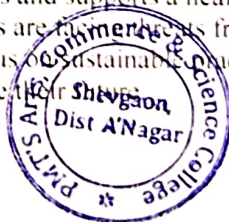
Primary Aims :-

- **Production of Bee Products:** This is the most traditional aim of apiculture, focusing on harvesting honey, beeswax, and other valuable hive products like propolis, royal jelly, and pollen. Beekeepers manage hives to maximize the production of these goods.

Secondary Aims:

- **Pollination Enhancement:** Honeybees are crucial pollinators for many plants, including fruits, vegetables, and nuts. By maintaining healthy bee populations, apiculture contributes significantly to increased crop yields and supports a healthy ecosystem.
- **Bee Conservation:** Bee populations are threatened from habitat loss, disease, and pesticide use. Some beekeepers focus on sustainable practices and bee breeding programs to conserve bee populations and ensure their future.

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Additional Objectives:

Education and Research: Apiculture can also aim to educate the public about the importance of bees and promote best practices in beekeeping. Research into bee health, disease management, and new beekeeping techniques can also be an objective.

- **Income Generation:** For some, beekeeping is a source of income, either through the sale of honey and other hive products or through pollination services offered to farmers.

It's important to note that the specific aims and objectives of apiculture will vary depending on the beekeeper's goals. Some beekeepers may prioritize honey production, while others might be more focused on bee conservation or pollination services.

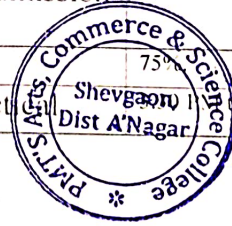
- The interested students will get the knowledge of Apiculture.
- Students will get the employment.
- They can generate employments.

The detail of the course is as follows:

Course Outline :-

| Sr. No | Content's | |
|--------|------------------------------|----------------------------------|
| 1 | Name of the course | Certificate Course in Apiculture |
| 2 | Level | Certificate. |
| 3 | Stream: | Science or any stream. |
| 4 | Subject | Apiculture |
| 5 | Eligibility Criteria | 10+2. |
| 6 | Duration | 3 months i.e. 90 days. |
| 7 | Language | English/Marathi. |
| 8 | Intake | 20 seats. |
| 9 | Fee | 200 Rs. |
| 10 | Selection/Admission Criteria | First come first serve. |
| 11 | Attendance | 75% |
| 12 | Lecture/pract | 4.30 PM. |

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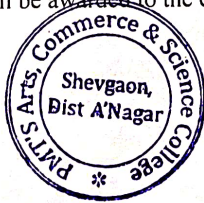
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|----|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | timing | |
| 13 | Academic calendar for the course | Five days in a week (4days theory periods & 1daypractical). |
| 14 | Available infrastructure | Well equipped laboratory, small & large scale vermiculture units. |
| 15 | Teaching Staff | Qualified, Experienced Guest Lecturers & eminent professors will be invited. |
| 16 | Non teaching staff | 1lab assistant & 2 lab attendants. |
| 17 | Reservation | NA. |
| 18 | Examination structure & schedule | <p>1. Course VT-01 Theory paper (objective/short answer type) = 50marks. Two hours duration.</p> <p>2. Course VT-02 Practical paper = 50 marks, two hours duration</p> <p>Marking scheme & Award of grades: Average of the marks obtained in each paper will be calculated as: 50+50+100/2 = 50</p> <p>i) 8-10 marks = 1point, C⁺ grade – pass;</p> <p>ii) 10-20 marks = 2 points, B⁺ grade;</p> <p>iii) 20-30 marks = 3points, B+ grade;</p> <p>iv) 30-40 marks =4points, A⁺ grade;</p> <p>v) 40-50 marks =5points, A+ grade</p> |

Award of Certificate carrying grades: after successful completion of course colorful certificateindicating grade will be awarded to the candidate.

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Course Content: Syllabus/Program: SCHEME

Vermicompost technology as one of the Certificate Course at undergraduate level

| | |
|------------------------|------------|
| Credits to be earned | 04 |
| Theory paper | 03 credits |
| Practical course/paper | :01 |

Proposed Durasation of the Course.

| Sr.No. | Code | Title of the paper | Credit pattern in L:T:P | Credit value |
|--------|----------|--------------------------------------------|----------------------------|--------------|
| 1 | VTT - 01 | Apiculture | 3:0:0 | 03 |
| 2 | VTP - 02 | Apiculture related to theory (VTP - 01) | 0:0:1 | 01 |

Open selective course for any students enrolled in the College from different disciplines.

Title of the Course: Certificate Course in Apiculture.



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**Proposed syllabus
Skill Based course in Apiculture**

| Sr.No | Unit I | 15Hrs. |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| 1 | Introduction to Apiculture - scope, importance <ul style="list-style-type: none"> ➤ History of beekeeping: Definition. ➤ Beekeeping worldwide and In India. ➤ Traditional beekeeping, Modern beekeeping, Urban or backyard beekeeping. ➤ Role of Central Honey Bee Research & Training Institute | |
| 2 | Honey Bee morphology, Anatomy and Life cycle Basic concepts of morphology of Honey bees | |
| 3 | [Practical: To study the morphology of Honeybees] <ul style="list-style-type: none"> ➤ Types of honey bees- indigenous, exotic. ➤ Species of honey bees. ➤ Origin, systematics and distribution of honey bees. | |
| 4 | [Practical: To study different species of honey bees.] <ul style="list-style-type: none"> ➤ Social organization in honey bees: ➤ Colony life and social organization – Queen, drone, worker. | |
| 5 | [Practical: i. Identification of different casts of Honey bees, ii. Study of different stages of the life cycle of the honey bee, iii. Identification of Queen cells, Drone cells & Brood] <ul style="list-style-type: none"> ➤ Study of Social behaviour of honey bee: Attack, Bee Dance ➤ Annual biological cycle of the bee colony. ➤ Identification of swarming tendency in a colony. ➤ Migration of Bees | |
| 6 | Honeybee Enemies and Diseases [with the help of Photographs] | |

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| | <ul style="list-style-type: none"> ➤ Bee enemies – Enemy: Mites, Wax Moths, Ants, Bee Eaters, Garden Lizards, Bears ➤ Disease management - Identification of symptoms of Nosema, Sac brood Virus, Thai sac brood virus, American foul brood, and European foul brood diseases. ➤ Preventive and control measures of the diseases, Vit B supplementation, Management of Dehydration | |
| Unit II | | 15Hrs. |
| 1. | Beekeeping: Tools and Equipment. Basic requirements for beekeeping start up BIS standard Tools used in apiculture. | |
| 2 | [Practical: Demonstration Different equipment required for bee keeping] | |
| 3 | <p>Introduction to types of bee boxes and Their Parts [Practical: Study of different types and parts of the bee box]</p> <ul style="list-style-type: none"> i. Handling frames of bee colony, ii. Division of Colonies, iii. Bee Capturing, iv. Queen Rearing, v. Sugar feeding of colonies in scarcity period] | |

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