

**Balasaheb Desai College, Patan**

**Internal Quality Assurance Cell (IQAC)**

**Skill Enhancement Course Academic Year: 2023-2024**

**Apiculture (Bee Keeping and Management)**

**(The Record to be maintained by the Convener)**

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**Balasaheb Desai College, Patan**  
**Internal Quality Assurance Cell (IQAC)**  
**Skill Enhancement Course Academic Year: 2023-2024**

• **Name of the Course:** - Apiculture (Bee Keeping and Management)


• **Objectives of the Course:** -

1. To impart the knowledge and technical skill in various aspects of Apiculture
2. To prepare the rural youth/farmers for accepting Apiculture as profit making enterprise

• **Outcomes of the Course:** -

1. Candidate can start his own Apiculture farm by understanding the basics life cycle of the honeybees about beekeeping tools, equipment, and managing beehives
2. Awareness about the Apiculture in farmers and students useful for providing self employment to learner
3. The bee keeping is useful in pollination of the flora
4. Learner will understand the marketing of various bee products
5. To learner for managing beehives for honey production and pollination.



  
(Dattatray D. Thorat)  
Head, Department of Zoology  
Balasaheb Desai College, Patan  
Tal. - Patan, Dist. - Satara (415206)

Koyana Education Society  
Balasaheb Desai College, Patan  
Department of Zoology  
**Certificate course in Apiculture (Bee Keeping and Management)**

**Aim :** Increasing the employment opportunity in rural sector and thus enhancing the ancillary income of the beekeepers & farmers.


**Outcomes of the Course: -**

1. Candidate can start his own Apiculture farm by understanding the basics life cycle of the honeybees about beekeeping tools, equipment, and managing beehives
2. Awareness about the Apiculture in farmers and students useful for providing self employment to learner
3. Honey is a delicious and highly nutritious food.
4. Bee keeping as an income generation activity, Learner will understand the marketing of various bee products
3. Bees play an important role in the pollination of many flowering plants, thus increasing the yield of certain crops such as sunflower and various fruits..

**Course duration: - 15 days (50 Hrs.)**

**No. of seats: - 20.**



  
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Koyana Education Society  
Balasaheb Desai College, Patan  
Department of Zoology

**Certificate course in Apiculture (Bee Keeping and Management)**

**Syllabus  
PAPER-I**

( 2hour)

**1.Introduction**

- a. Importance of beekeeping
- b. History of bee, beekeeping
- c. Role of bees in Agricultural sector
- d. Beekeeping - As a hobby – Additional income source (Side line beekeeping)  
As a profession (Commercial beekeeper)
- e. Qualities of a beekeeper How to be a quality beekeeper

**2.Honey bee species and identification:**

(2 hour)

- a. Introduction to honey bee;
- b. Origin, systematics and distribution;
- c. Types of honey bees, Species of honey bees and role in pollination. Bee identification.

**3.Introduction to beekeeping equipment's**

(1 hour)

- 1.Beebox      2.Smoker    3.Extractor    4.Stand    5.Dammer bee box
- 6.Hat and veil    7.Gloves

**4.Introduction to Honey Vs Nectar Seasons in Beekeeping**

(2 hour)

1. Dearth Period
2. Growth Period
3. Honey Extraction Period

**5. Bee enemies and diseases:**

(3 hour)

- a. Bee enemies – Wax Moth, Ants, Wasps, Microorganisms, Pests. Diagnosis and Identification.
- b. Mites attacking honey bees: Varroa mites, Mite Biology, Controlling Varroa Mites, Mechanical control, Mite-tolerant stocks, Biopesticides, Chemical (synthetic pesticide) treatments.
- c. Bacterial, viral, fungal & protozoan diseases Pesticide poisoning of bees and mitigation: Definition of pesticides, types of pesticides and their length of residual toxicity, Pesticides and pollinators, Toxicity to bees – Honey bee health, Colony collapse disorder.
- e) Pollinator conservation methods: Pollinators definition, Types of pollinators, Pollinators at Risks, Threats to Pollinators, Actions to Help Pollinators, Conservation methods.



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**Certificate course in Apiculture (Bee Keeping and Management)**

**Syllabus**

**PAPER-II**

1. Role of Central Honey Bee Research & Training Institute. (1 hour)

2. Communication in honey bees: (2 hour)

Bee learning and communication – Learning - Color learning in honeybees,  
Color discrimination, Color learning rates and preferences, Color memory,  
Timing in color learning, Communication - Odor plume, Trophallaxis

3. Marketing of bee products: (3 hour)

Definition of marketing, Marketing Honey Comb and Honey,  
Marketing Pollination Services, Marketing Wax, Marketing  
Propolis, Marketing Pollen, Marketing Royal Jelly,  
Marketing Bee Venom, Marketing Adult and Larval bees,  
Costing and Financing the Marketing Activities.

4. Preparing bankable bee keeping project: (4 hour)

Steps involved in starting a beekeeping project,  
Funding sources for beekeeping projects.  
Funds mobilization from state and national banks.  
Grant Resource and utilization.





Balasaheb Desai College, Patan  
Department of Zoology  
**Certificate course in Apiculture (Bee Keeping and Management)**

**Syllabus**

**PRACTICAL-I**

- |   |          |
|---|----------|
| 1. Morphology and anatomy of honey bee                          | (2 hour) |
| 2. Colony organization, division of labor and life cycle        | (2 hour) |
| 3. Social behavior of honey bees                                | (1 hour) |
| 4. Bee keeping equipment  | (2 hour) |
| 5. Handling of honey bees colony, maintenance of apiary record. | (2 hour) |
| 6. Seasonal management  | (3 hour) |
| 1) Spring management    2) Summer & monsoon management          |          |
| 3) Autumn management   4) Winter management                     |          |
| 7. Queen rearing.   | (1hour)  |
| 8. Products from beehives                                       | (2 hour) |
| 1. Royal Jelly  |          |
| 2. Bee Venom  |          |
| 3. Pollen   |          |
| 4. Wax  |          |
| 5. Propolis   |          |
| 6. Honey  |          |



Balasaheb Desai College, Patan  
Department of Zoology  
**Certificate course in Apiculture (Bee Keeping and Management)**

**Syllabus**

**PRACTICAL-II**

**1. Apitherapy**

**(2hour)**

1. Hive Management- Comb Removal – Renewal of comb
2. Formation of New colony in Nature
3. Enemies of Honey bees

**2. Benefits of Bee keeping**


**(3hour)**

1. Honey extraction, processing, bottling.
2. Bees wax rendering, purification
3. Royal jelly preparation.
4. Bee pollen, propolis extraction.
5. Value added honey product preparation.
6. Visit to Apiary & Bee research Institute.

**3. Project work**

**(10 hour)**



  
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Department of Zoology  
**Certificate course in Apiculture (Bee Keeping and Management)**

**Syllabus**

**PRACTICAL-II**

**1. Apitherapy**

**(2hour)**

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कोयना शिक्षण संस्था, पाटण.

बाळासाहेब देसाई कॉलेज, पाटण.

प्राणीशास्त्र विभाग - २०२३-२०२४

नोटीस

## मधनिर्मीती उद्योग - प्रशिक्षण अभ्यासक्रम

प्राणीशास्त्र विभागाच्या वतीने मधनिर्मीती उद्योग - प्रशिक्षण अभ्यासक्रम ०७.०४.२०२३ पासून सुरू करण्यात येत आहे. सदर अभ्यासक्रमासाठी प्रवेशीत विद्यार्थ्यांनी प्राणीशास्त्र विभागाशी त्वरीत संपर्क साधावा असे आवाहन करणेत येत आहे.

१. अभ्यासक्रम कालावधी :- ५० तास
२. पात्रता :- इयत्ता १० वी उत्तीर्ण (कोणतीही शाखा)
३. सुविधा :- स्वतंत्र प्रात्यक्षिक व मार्गदर्शन.  
शैक्षणिक सहलीचे आयोजन.  
मधउत्पादक शेतक-यांना भेटी देणे.

फायदे

स्वतंत्र व्यवसायाची संधी

व्यवसायासाठी शासकीय अनुदान मिळवून देण्यास मार्गदर्शन.

शासकीय/निमशासकीय/खाजगी केंद्रात नोकरीची संधी.



*(Signature)*

(Dattatraya) समन्वयक,

Head, Department of Zoology  
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कोयना शिक्षण संस्था, पाटण.

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प्राणीशास्त्र विभाग - २०२३-२०२४

नोटीस

## मधनिर्मीती उद्योग - प्रशिक्षण अभ्यासक्रम

प्राणीशास्त्र विभागाच्या वतीने मधनिर्मीती उद्योग - प्रशिक्षण अभ्यासक्रम ०७.०४.२०२३ पासून सुरु करण्यात येत आहे. सदर अभ्यासक्रमासाठी प्रवेशीत विद्यार्थ्यांनी प्राणीशास्त्र विभागाशी त्वरीत संपर्क साधावा असे आवाहन करणेत येत आहे.

१. अभ्यासक्रम कालावधी :- ५० तास

२. पात्रता :- इयत्ता १० वी उत्तीर्ण (कोणतीही शाखा)

३. सुविधा :- स्वतंत्र प्रात्यक्षिक व मार्गदर्शन.

शैक्षणिक सहलीचे आयोजन.

मधउत्पादक शेतक-यांना भेटी देणे.

फायदे

स्वतंत्र व्यवसायाची संधी

व्यवसायासाठी शासकीय अनुदान मिळवून देण्यास मार्गदर्शन.

शासकीय/निमशासकीय/खाजगी केंद्रात नोकरीची संधी.



*(Signature)*

(Dattatraya Samant)

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**Balasaheb Desai College, Patan**  
**Department of Zoology**  
**Add on Course**

Apiculture (Bee Keeping and Management)

Mark list – 2023-2024

S.N.	Name of the Student
1	Desai Akansha Ajit
2	Jadhav Kalyani Ramesh
3	Nangare Diksha Vikas
4	Yadav Tanuja Jayakar
5	Surywanshi Nandini Akash
6	Sathe Sidhesh Narayan
7	Thorat Nilesh Dinesh
8	Sankpal Anish Vasant
9	Toraskar Nikita Mahadev
10	Mokashi Faizan Khalil
11	Nikam Amrut Jagannath
12	Patil Niranjan Deepak
13	Pachupate Anirudhha adhik
14	Ghadge Sagar Kalu
15	Molawade Shailesh Deepak
16	Dige Mayuri Sampat
17	Dige Arati Dinkar
18	Molawade Priyanka Eknath
19	Molawade Sujata Raghunath
20	Shinde Dhanashri Ashok



  
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BALASAHEB DESAI COLLEGE, PATAN

## Department of Zoology

Skill Enhancement course in  
Apiculture (Bee Keeping and Management)  
Year- 2023-2024


### Time Table

• Schedule of the Course :- 1.1.2024 to 19.1.2024

• Time Table:-

Day	Thursday	Friday	Saturday
Time	02.00 to 4.30 p.m.	10.30 to 11.15 a.m.	10.30 to 11.15 a.m.
Teacher	LSB(Theory)	DDT(Practical-I)	L.S.B..(Theory)
		02.00 to 4.30 p.m.	
		PRG(Practical-II)	



  
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**Balasaheb Desai College, Patan**  
**Internal Quality Assurance Cell (IQAC)**  
**Skill Enhancement Course Academic Year: 2023-2024**

**Name of the Course:** Apiculture (Bee Keeping and Management)

**Date -** 20<sup>th</sup> Jan, 2024

**Students Participation:** 20

**Venue:** Zoology Dept.

**Report of the Programme:**

Department of Zoology has successfully conducted Apiculture (Bee Keeping and Management) between 1.01.2024 to 19.01.2024 .

The Chief Guest of the Inaugural first session Mr. B.D.Mahadik, apiculture Institute Mahabaleshwar, Satara has given information about Bee keeping. Bee keeping is not only a business but also helps for increasing crop productivity through pollination. Byproducts are imp for better health. Honey has medicinal value. He have given information of honey box. How to collect bee from nature etc.

The Chief Guest of the afternoon session Miss Rohini Patil, Bee keeper Mrudgandh Society, Patan, has delivered lecture on Practical work. Every student has to do work in which he has interest. Apiculture is best business in our locality. Environment is favourable minimum 1000 boxes will be acquire.

The President of one day workshop Dr. S. D. Pawar, Principal of our college has focus on Importance of college activities and they are beneficial to the students. He has told that number of lead college activities run by our college.

The Convener of the course Mr.D.D.Thorat, Head Dept. of Zoology, has given introduction about this activity in the college; it will help to create awareness among the students about environment. Dr. L.S. Bhingardev has welcomed both guest and president . The first session was concluded by Mr.P.R.Gaikwad and Second session was concluded by Mr. Dr.L.Bhingardev. This course was conducted 15 Days in the college .




Photo: (One)

**Feedback:**

Very good	Good	Average	Poor
15	05	-	-



  
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**Balasaheb Desai College, Patan**  
**Department of Zoology**  
**Course - Apiculture (Bee Keeping and Management)**  
**(Affiliated to Shivaji University, Kolhapur)**  
**Attendance list 2023-2024**

S.N.	Name of the Student	01/01/2024	02/01/2024	03/01/2024	04/01/2024	05/01/2024	06/01/2024	08/01/2024	09/01/2024
1	Desai Akanksha Ajit	Desai	Desai	Desai	Desai	Desai	Desai	Desai	Desai
2	Jadhav Kalyani Parnesh	Parnesh	Parnesh	Parnesh	Parnesh	Parnesh	Parnesh	Parnesh	Parnesh
3	Wangaze Diksha Vikas	Wangaze	Wangaze	Wangaze	Wangaze	Wangaze	Wangaze	Wangaze	Wangaze
4	Yadav Tanuja Jaykar	Yadav	Yadav	Yadav	Yadav	Yadav	Yadav	Yadav	Yadav
5	Suryawanshi Nandini A.	Nandini	Nandini	Nandini	Nandini	Nandini	Nandini	Nandini	Nandini
6	Sathe Siddhesh Narayan	Sathe	Sathe	Sathe	Sathe	Sathe	Sathe	Sathe	Sathe
7	Thorat Nilesh Dinesh	Thorat	Thorat	Thorat	Thorat	Thorat	Thorat	Thorat	Thorat
8	Ganekar Anish Vasant	Ganekar	Ganekar	Ganekar	Ganekar	Ganekar	Ganekar	Ganekar	Ganekar
9	Tosaskar Nikita Mahadev	Tosaskar	Tosaskar	Tosaskar	Tosaskar	Tosaskar	Tosaskar	Tosaskar	Tosaskar
10	Mekachi Faizan Khalil	Mekachi	Mekachi	Mekachi	Mekachi	Mekachi	Mekachi	Mekachi	Mekachi
11	Nikam Anant Jagannath	Nikam	Nikam	Nikam	Nikam	Nikam	Nikam	Nikam	Nikam
12	Patil Niranjan Deepak	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil
13	Pratapkar Anirudh Arhik	Pratapkar	Pratapkar	Pratapkar	Pratapkar	Pratapkar	Pratapkar	Pratapkar	Pratapkar
14	Shadga Sagar Kaly	Shadga	Shadga	Shadga	Shadga	Shadga	Shadga	Shadga	Shadga
15	Malawade Ghilash Datta	Malawade	Malawade	Malawade	Malawade	Malawade	Malawade	Malawade	Malawade
16	Dige Mayuri Sampat	Dige	Dige	Dige	Dige	Dige	Dige	Dige	Dige
17	Dige Anant Dinkar	Dige	Dige	Dige	Dige	Dige	Dige	Dige	Dige
18	Malawade Priyanka Jaganath	Malawade	Malawade	Malawade	Malawade	Malawade	Malawade	Malawade	Malawade
19	Velawade Sujata Raghunath	Velawade	Velawade	Velawade	Velawade	Velawade	Velawade	Velawade	Velawade
20	Shinde Phanshi Ashok	Shinde	Shinde	Shinde	Shinde	Shinde	Shinde	Shinde	Shinde



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# Balasaheb Desai College, Patan

## Department of Zoology

Add on Course - Apiculture (Bee Keeping and Management)  
(Affiliated to Shivaji University, Kolhapur)

Attendance list 2023-2024

S.N.	Name of the Student	10/01/2024	11/01/2024	12/01/2024	13/01/2024	15/01/2024	16/01/2024	17/01/2024	Remark
1	Desai Akanksha Ajit	Desai	Desai	Desai	Desai	Desai	Desai	Desai	
2	Jadhav Kalyani Ramesh	Pathan	Pathan	Pathan	Pathan	Pathan	Pathan	Pathan	
3	Dangore Dibha Vikas	Dangore	Dangore	Dangore	Dangore	Dangore	Dangore	Dangore	
4	Yadav Tanuja Jaykar	Yadav	Yadav	Yadav	Yadav	Yadav	Yadav	Yadav	
5	Suryawanshi Nandini A.	Nandini	Nandini	Nandini	Nandini	Nandini	Nandini	Nandini	
6	Sattre Siddhesh Narayan	Sattre	Sattre	Sattre	Sattre	Sattre	Sattre	Sattre	
7	Thorat Nilesh Dinesh	Thorat	Thorat	Thorat	Thorat	Thorat	Thorat	Thorat	
8	Sarkar Anish Vasant	Sarkar	Sarkar	Sarkar	Sarkar	Sarkar	Sarkar	Sarkar	
9	Taraskar Nikita Mahadev	Taraskar	Taraskar	Taraskar	Taraskar	Taraskar	Taraskar	Taraskar	
10	Chakshi Faizan Khalil	Chakshi	Chakshi	Chakshi	Chakshi	Chakshi	Chakshi	Chakshi	
11	Nikam Anant Jagannath	Nikam	Nikam	Nikam	Nikam	Nikam	Nikam	Nikam	
12	Patil Nirajan Deepak	Patil	Patil	Patil	Patil	Patil	Patil	Patil	
13	Chhapare Anirudh Ashik	Chhapare	Chhapare	Chhapare	Chhapare	Chhapare	Chhapare	Chhapare	
14	Ghadge Sagar Kalu	Ghadge	Ghadge	Ghadge	Ghadge	Ghadge	Ghadge	Ghadge	
15	Dighe Mayuri Samrat	Dighe	Dighe	Dighe	Dighe	Dighe	Dighe	Dighe	
16	Dighe Anshu Pinkay	Dighe	Dighe	Dighe	Dighe	Dighe	Dighe	Dighe	
17	Molawade Priyanka Ekanath	Molawade	Molawade	Molawade	Molawade	Molawade	Molawade	Molawade	
18	Molawade Sujata Pashan	Molawade	Molawade	Molawade	Molawade	Molawade	Molawade	Molawade	
19	Shinde Akash Ashok	Shinde	Shinde	Shinde	Shinde	Shinde	Shinde	Shinde	
20	Molawade Chaitan Pinkay	Molawade	Molawade	Molawade	Molawade	Molawade	Molawade	Molawade	



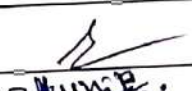

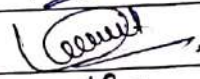
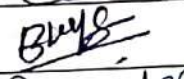
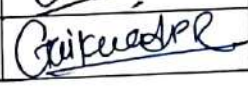
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Koyana Education Society  
Balasaheb Desai College, Patan  
Department of Zoology

**Certificate course in Apiculture (Bee Keeping and Management)**

The following members of Syllabus committee were present for to frame the syllabus for Add-on course - certificate course in Apiculture (Bee keeping and Management.) on 9/12/2023.

**Syllabus committee-2023-2024**

Sr. No.	Name	Designation	Designation	Signature
1	Dr.S.D.Pawar	Principal	Chairman	
2	Rohini Patil	Bee Keeper	External Expert	
3	Mr.D.D.Thorat	Head of Zoology	Head	
4	Dr.L.S.Bhingardeve	Assist.Prof.	Member	
5	Mr.P.R.Gaikwad	Asst.Prof.	Coordinator	

In presence of above members attached syllabus copy approved for certificate course in Apiculture from year 2023 to 2025.



  
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