

Rayat Shikshan Sanstha's **D. P. Bhosale College, Koregaon** 

**Department of Zoology** 

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## Skill based Certificate Course on Bee keeping

## Year 2017-18

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**D.P. Bhosale College, Koregaon Department of Zoology** NOTICE 2017-18 Date:- 29/09/2017

All the students of B. Sc. II & III are here by informed that Department has organized "Skill based Certificate Course on Bee Keeping" from Monday 2<sup>st</sup> October 2017. All student are informed that they should remain present for course on time. It may clearly noted that fine will be collected from absent students.

Incharge

NHBONKO

Department of Zoology

# **Skill based Certificate Course**

# On

# **Bee Keeping**







D.P. Bhosale College, Koregaon



**Skill based Certificate Course** 

# On

# **Bee keeping**

Organized by

Department of Zoology

Course Incharge

Mr. Jawale C. B.

Course Duration: 02 Oct. 2017 – 10 Nov. 2017

#### D.P. Bhosale College, Koregaon

Syllabus

Title – Skill based Certificate Course on Bee Keeping B. Sc. II (Zoology)

## Total Hrs- 30

#### Theory

#### Unit 1

Apiculture development in India. Role of Central Honey Bee Research & Training Institute.

Introduction to Apiculture: Scope and importance

#### Unit 2

Honey Bee morphology, Anatomy and Life cycle.

Honey bee species and Castes. Origin, systematic and distribution of honey bees.

## Unit 3

Social organization in honey bees: Colony life and social organization – Queen, drone, worker. Communication in honey bees.

Bee enemies and diseases: An introduction, Bee enemies – Wax Moth, Ants, Wasps, Microorganisms, Pests. Diagnosis and Identification.

Bacterial, viral, Fungal and protozoan diseases of honey bee.

#### Unit 4

Bee keeping: Tools and Equipment's:

Introduction to types of bee boxes.

### Unit 5

Honey Processing and Bee Hive Products

Honey - its properties and application in various fields

Economics in small scale and large scale bee keeping. Economic Value of Commercial Beekeeping.

## Practicals

- 1. Setting and Maintenance of Bee keeping unit.
- 2. Setting and Maintenance of Honey Processing unit.
- 3. Breeding and Multiplication of various bees.
- 4. Propagation of bee plants.

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Department of Zoology D. P. Bhosale College Koregaon



D.P. Bhosale College, Koregaon

Department of Zoology Year : 2017 - 18

## **Skill based Certificate Course**

on

## Bee keeping

## **Objectives:-**

• To provide basic knowledge in the field of Biodiversity, Conservation and Wildlife Management

• To generate connection between part professional organizations working in the field of conservation and environment protection.

- To provide an alternate avenue to students
- To create awareness about Biodiversity and Nature Conservation

## **Course Outcomes :-**

By the completion of the course the students should able to -

- Understand the basic life cycle of the honeybee.
- Learn beekeeping tools and equipment.
- Manage beehives for honey production and pollination.
- Learn honey bee diseases and pests.
- Harvest and marketing of honey and other bee products.

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**Certificate Course** 

**Department of Zoology** 



## D.P. Bhosale College, Koregaon

Department of Zoology

Skill based Certificate Course on Bee Keeping

Time Table- 2017-18

Theory & Practical

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
10.15-11.15 Theory	СВЈ	VNB	СВЈ	VNB	СВЈ	VNB
08.30-10.30 Practical	СВЈ	VNB	СВЈ	VNB	СВЈ	VNB

VNB - Mr. V.N. Bankar Manley CBJ – Mr. C. B. Jawale -

Department of Zoology D. P. Bhotale College Koregson



Rayat Shikshan Sanstha's D.P. Bhosale College, Koregaon Department of Zoology Skill based Certificate Course on Bee Keeping Time Table- 2017-18 Theory & Practical

Date	Time	Theory / Practical	Name of the teacher					
02/10/2017	10.15-11.15	Theory	Mr. C.B. Jawale					
03/10/2017	10.15-11.15	Theory	Mr. V.N. Bankar					
04/10/2017	10-15-11.15	Theory	Mr. C.B. Jawale					
05/10/2017	10.15-11.15	Theory	Mr. V.N. Bankar					
06/10/2017	10.15-11.15	Theory	Mr. C.B. Jawale					
07/10/2017	10.15-11.15	Theory	Mr. V.N. Bankar					
09/10/2017	10.15-11.15	Theory	Mr. C.B. Jawale					
10/10/2017	10.15-11.15	Theory	Mr. V.N. Bankar					
11/10/2017	08.30-10.30	Practical	Mr. C.B. Jawale					
12/10/2017	10.15-11.15	Theory	Mr. V.N. Bankar					
13/10/2017	10.15-11.15	Theory	Mr. C.B. Jawale					
4/10/2017	10.15-11.15	Theory	Mr. V.N. Bankar					
6/10/2017	10.15-11.15	Theory	Mr. C.B. Jawale					
7/10/2017	10.15-11.15	Theory	Mr. V.N. Bankar					
8/10/2017	08.30-10.30	Practical	Mr. C.B. Jawale					
0/10/2017	10.15-11.15	Theory	Mr. C.B. Jawale					
1/10/2017	08.30-10.30	Practical	Mr. V.N. Bankar					
3/10/2017	10.15-11.15	Theory	Mr. C.B. Jawale					
4/10/2017	10.15-11.15	Theory	Mr. V.N Bankar					

25/10/2017	10.15-11.15	Theory	Mr. C.B. Jawale					
26/10/2017	10.15-11.15	Theory	Mr. V.N. Bankar					
27/10/2017	10.15-11.15	Theory	Mr. C.B. Jawale					
28/10/2017	08.30-10.30	Practical	Mr. V.N. Bankar					
30/10/2017	10.15-11.15	Theory	Mr. C.B. Jawale					
31/10/2017	10.15-11.15	Theory	Mr. V.N. Bankar					
01/11/2017	08.30-10.30	Practical	Mr. C.B. Jawale					
02/11/2017	08.30-10.30	Practical	Mr. V.N. Bankar					
03/11/2017	08.30-10.30	Practical	Mr. C.B. Jawale					
06/11/2017	08.30-10.30	Practical	Mr. C.B. Jawale					
07/11/2017	08.30-10.30	Practical	Mr. V.N. Bankar					
08/11/2017	08.30-10.30	Practical	Mr. C.B. Jawale					
09/11/2017	08.30-10.30	Practical	Mr. V.N. Bankar					
10/11/2017	08.30-10.30	Practical	Mr. C.B. Jawale					

Head Department of Zoology D. P. Bhosala Collega Koregaon



#### Rayat Shikshan Sanstha's D.P. Bhosale College, Koregaon Student list 2017-18

## Skill based Certificate Course on Bee Keeping

Sr. No.	Roll No.	Name of the Students
1	1321	Mane Kumar Hanmant
2	1322	Mane Nikita Anandrao
3	1323	Mane Suniket Santosh
4	1324	Nikam Akshay Sunil
5	1325	Nikam Nikita Ankush
6	1326	Nikam Nikita Dilip
7	1327	Nikam Shital Vijay
8	1328	Panskar Ravina Vasant
9	1329	Patwekar Afreen Sharif
10	1330	Pawar Pooja Raju
11	1371	Gaikwad Akshay Dattatray
12	1372	Jagadale Pragati Dattatray
13	1373	Kadam Sayli Ramdas
14	1374	Kate Rahul Vitthal
15	1375	Kshirsagar Shivaji Anil
16	1376	Mane Sneha Dattatray
17	1377	Nadaf Imran Innus
18	1378	Pawa Ashutosh Kailas
19	1379	Pawar Bhavana Dattatray
20	1380	Pawar Pooja Ajay
21	1381	Pawar Supriya Sambhaji
22	1382	Raskar Amit Abasaheb
23	1383	Sawant harshada Adhikrao
24	1384	Vibhute Pratik Raju
25	1385	Barge Gauri Vijay

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Department of Teclory D. P. Bhosale College Roleyada

## D.P. Bhosale College, Koregaon

## Skill based Certificate Course on Bee Keeping

#### STUDENT ROLL CAL

#### Month : October 2017

Roll No.	Name of the Student	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29 30
1321	Mane K. H.	A	1 way	A	10 mars	Kilius	-Kihau	Chue	- 1	Chu-	Killmu	Khur	Francis	A	A	1	Khur	Kim	Khur	-	KML	Kin	-1	YKLIN	pun	Kin	Khan	Kan	·Khu-	Kun
1322	Mane N. A.	N.ANEN	N. Aproc	=NAM	NAM	NAMY	NAM	1 NAMA					NAM	NAMA	A		NAMU	NAM	NAM		A	A		NAME	NEM	NAM	NAM	A	March	IN them
1323	Mane S. S.	1785	MUS	MIS	A	MSI	MS	ms		A	MSS	MSS	A	MASS			MJ	MSI	MU		ms	TASS		MUS	MS	MS	MUSI	MUS	ms	miss
1324	Nikam A. S.	AS	A	A.S	A.S	A	AS	A		AS.	A.S	AS	A.S	AS	. 13		AS	AS	AS		D.S	AS		Dis	A.	AS	AS	AS	AS	AS
1325	Nikam N. A.	Rippi (	Nitan	NIED	NIEL	No		An	N	Iren	NN	Nitan	A	NIEG	n ? - +		Vibar		Nikan	2-1	A	ion	1	Nikar	n p	NIE	A	MAN		A
1326	Nikam N. D.		NDN	-A		NON						MON		NON			NDN		NW		NON	A		ADN	A	NOAL	NON	NA	NON	A
1327	Nikam S. V.	SV	S.V.	SN	S.V	54		S.Y		S.V	5.1	G.V	A	SV	SN	1	SIV	5.0	S.V		SV	A		S.V	4Y	Six		J.V		5.V .
1328	Panskar R. V.	Ripona	Rivipario	-Awar	A	Rivane	m	Rupen	R	NPONe	R.Vpm	prou	Rypan	Ropin	Row	1	prom	RUPW	Brun		Roph	pwin		RNPM	Bup	Rypu	RUPIN	Rou	RUNG	A
1329	Patwekar A. S.	A	A	A:S	A)	AS.	A	AS		A.S	A		A.S.	A	AS		A.S		P.S		AS	B	/	AS	for	P.S	oor	PS	PA	A
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1372	Jagadale P. D.	P.D	P.D	p.D	p.D	P.D		Â	F	20	4	20	120	A	RD		PP	A	pay	-		P.D		11-1	22	<u>BD</u>		1	2.0	A
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Head Department of Zoology D. P. Bhosale College Koregaon



## D.P. Bhosale College, Koregaon

### Skill based Certificate Course on Bee Keeping

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#### STUDENT ROLL CAL

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Month: November 2017

Roll No.	Name of the Student	1	2	3	4 5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1321	Mane K. H.	Kun	File	piller		Khur	Khur	Khull	Khu	A	Khue	Khur	6 hu	Zehr	Khu	Khue	Khuer	-	3.	No.										
1322	Mane N. A.	A	N.AMU	N.HM		A	N-AMA	A	Nº Am		N-A May	E N.Ama	e A_	NAM	n NAM	NHIA	A NAM	4												
1323	Mane S. S.	erm	MSS	MISI		mss	N9.5J				A	[45]	MID	MSS	A	MS	ms													
1324	Nikam A. S.			LECA		Neren	The	ASP	NERO	pos	her	reis	-05	- Jal	- 211	-4	A													
1325	Nikam N. A.	CAND	atin f	ALATE		22	NNA	ADD	RUND	AND	NND	AND	NNA	NAD	NNA	HAA	Plato	-						- S.) - N-				-		
1326	Nikam N. D.	NON	NON	NON		NON	Δ	NON	A	ADD	MON	NON	NON	NDN	Α	NDN	MOM													
1327	Nikam S. V. Panskar R. V.	SV	A.	5.V,		5.V	Su	S.V PV	Gur	$\prec$ . $\gamma$	S.V.	5.V	Liv	SIV		SV	5.4													<b>—</b> —
1328	Panskar R. V.	BV	_ (	BY	-	Qv	÷.	PV_	A	DY	A	(RX	PX-	(PX	DIG	DY_	$(\mathcal{P})$	·	_											
1329	Patwekar A. S	. A.S.	AS	A.S.		A-5	en la	wert	Sec	P. Que	AS	A.S	AS	A.S	, As	A:S	AS													
1330	Pawar P. R.	(P:)pg			2+0	Place	Qr	Paul	(Q)	P. par	e (p)	Daw.er	PL PP	IUE:	Ppu	0.00	pri													
1371	Gaikwad A: D	. P.D	AD	A.P.		AD	A.D	-AD	AD.	AD	AD.	AD.	Δ	AD.	AD	AD.	100		-											
1372	Jagadale P. D.	A	P.D	PD	-	pp	-PD	A	pp	pu-	p.p.	Am	P12	P12	P.D.	-PD	_A_													
1373	Kadam S. R.	Tendesy						Kownsn		A	Kadans							-												
1374	Kate R. V.	BV.				P.V	Q.M		PM		Bir				BV															
1375	Kshirsagar S. A.	J.A.	SA	A				3.A	SA	5.A	S.A	Sm	J.A	S.A	S.A.	S.A	S.A			~										
1376	Mane S. D.	No-				m			Mb	~	A				ma															
1377	Nadaf I. I.	<b>£</b> \$;		8.7		\$.9	& F		& F		EF	2,2			\$ F	£E.	7-E													
1378	Pawa A. K.			-Ks		E	A	FZ	12	Rz-	K-					BZ											1	3		
1379	Pawar B. D.	A	3.D	A		B·D		B.D	Bi	A	BD		A	B·D	13.17	1 <u>9</u> . D	A													
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1381	Pawar S. S.	pion.						Pisis			Pars	Pr.		-			Pres													
1382	Raskar A. A.	AIA				A-A	<b>B</b> B	AB	<u>A·A</u>	A.A					AA .	(7) A	AA													
1383	Sawant H. A.	HA								AH		HA			HA	·A	N.A.													
1384	Vibhute P. R.	PRN; blue								P.R.vibhu	PRIVibhu	P.A. Vibhy	A					1												
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ead Department of Zoology D. P. Bhosale College Koregson

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## D. P. Bhosale College, Koregaon

**Department of Zoology** 

**Question Paper** 

Skill based Certificate Course on Bee Keeping	<b>Marks : 30</b>
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#### Instructions

1. All the questions are compulsory

2. Questions to the right Indicate full Marks

3. Draw neat and Labelled diagrams wherever necessary

## Que. 1: Long questions (Any 2)

a. Describe social organization of Honeybees.

b. Describe Bee enemies, diagnosis and Identification.

c. Explain tools and Equipment's used for bee keeping.

Que. 2: Write short notes on following (Any 2)

a. Types of bee boxes

b. Honey Processing and Bee Hive Products

c. Honey bee species

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## D.P. Bhosale College, Koregaon

## Student list 2017-18

## Skill based Certificate Course on Bee Keeping

Mark List

Sr. No.	Roll No.	Name of the Students	Que. 1 20	Que. 2 10	Total Marks 30
1	1321	Mane Kumar Hanmant	18	08	26
2	1322	Mane Nikita Anandrao	15	05	20
3	1323	Mane Suniket Santosh	13	09	22
4	1324	Nikam Akshay Sunil	4	080	2.2
5	1325	Nikam Nikita Ankush	10	0 X	27
6	1326	Nikam Nikita Dilip	10	09	28
7	1327	Nikam Shital Vijay	17	08	25
8	1328	Panskar Ravina Vasant	16	DG	25
9	1329	Patwekar Afreen Sharif	15	08	23
10	1330	Pawar Pooja Raju	12	05	18
11	1371	Gaikwad Akshay Dattatray	1.4	07	21
12	1372	Jagadale Pragati Dattatray	18	80	26
13	1373	Kadam Sayli Ramdas	18	06	22
14	1374	Kate Rahul Vitthal	18	06	24
15	1375	Kshirsagar Shivaji Anil	18	09	24
16	1376	Mane Sneha Dattatray	16	57	23
17	1377	Nadaf Imran Innus	17	06	23
18	1378	Pawa Ashutosh Kailas	19	09	28
19	1379	Pawar Bhavana Dattatray	16	08	24
20	1380	Pawar Pooja Ajay	17	09	26
21	1381	Pawar Supriya Sambhaji	18	07	25
22	1382	Raskar Amit Abasaheb	19	09	28
23	1383	Sawant harshada Adhikrao	is	08	23
24	1384	Vibhute Pratik Raju	19	09	28
25	1385	Barge Gauri Vijay	14	06	20

Head Department of Zooløgy D. P. Bhosale College Koregaon



## Rayat Shikshan Sanstha's D. P. Bhosale College, Koregaon

**Department of Zoology** 

## Report

## Skill based Certificate Course on Bee keeping

Increasing demand for honey and its by-products- bees wax, royal jelly, etc. in various food, pharmaceutical and cosmetic industries has an expanding market in developing as well as developed countries. Apiculture, the main source of honey, is a low maintenance and cost effective process. Associated intimately with agriculture and forest, the practice of apiculture not only yields products of economic value, but also helps to sustain biodiversity. Apiculture has an important role to play in the self-employment sector in the present scenario. Department of Zoology has offered this course for B.Sc. II students for increasing the employment opportunity in rural sector and thus enhancing the ancillary income of the beekeepers & farmers.



Mr. V. N. Bankar delivering lecture on Bee keeping

This course was conducted during the 02<sup>nd</sup> October 2017 to 10 November 2017. For this course 25 students have been enrolled. During this period the lectures and practicals were conducted by resource faculties. Mr. V.N. Bankar and Mr. C.B. Jawale conducted the practicals and theory period.

Specific outcome of beekeeping as an income generation activity 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. Honey is a delicious and highly nutritious food.

Head Head Department of Zoology D. P. Bhosale College Koregaon





"Education through Self-help is our Motto"- KARMAVEER Rayat Shikshan Sanstha's

D.P. Bhosale College, Koregaon

District – Satara. (M.S.) NAAC Reaccredited 'A' (with CGPA 3.12)

Skill based Course

## CERTIFICATE

This is to certify that Mr. / Miss ------

has successfully completed "Skill based Certificate Course" on ------

---- From ------ to ------ Organized by Department of Zoglogy, D. P. Bhosale College, Koregaon,

District- Satara, (M.S.).

Incharge



Head Department of Zoology

Class :