

 <p>शिवजी विद्यापीठ कोल्हापूर Estd. 1962 "A***" Accredited by NAAC(2021) With CGPA 3.52</p>	<p>SHIVAJI UNIVERSITY, KOLHAPUR - 416004, MAHARASHTRA PHONE : EPABX – 2609000, www.unishivaji.ac.in, bos@unishivaji.ac.in शिवाजी विद्यापीठ, कोल्हापूर - ४१६००४, महाराष्ट्र दूरध्वनी - ईपीएबीएक्स - २६०९०००, अभ्यासमंडळे विभाग दूरध्वनी विभाग २३१-२६०९०९३/९४</p>	
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SU/BOS/Science/ 44

Date: 18/ 10/ 2022

To,  
The Principal,  
All Affiliated Concerned Science Colleges/Institutions  
Shivaji University, Kolhapur.

**Subject :- Regarding syllabi of B. Sc. Part- I (NEP-2020) degree programme under the Faculty of Science and Technology as per National Education Policy 2020.**

Sir/Madam,

With reference to the subject mentioned above, I am directed to inform you that the university authorities have accepted and granted approval to the syllabi and Nature of question paper of **B. Sc. Part- I Information Technology** under the Faculty of Science and Technology as per National Education Policy 2020 .

Sr. No.	Faculty of Science and Technology	Programme/ Course B. Sc. Part- I
1	Zoology	Skill Based Course in Sericulture (Skill Enhancement Courses ) Skill Based Course in "Vermicompost" (Skill Enhancement Courses ) Skill Based Course in Apiculture(Skill Enhancement Courses )

This syllabi and nature of question paper shall be implemented from the Academic Year 2022-2023 onwards. A soft copy containing the syllabus is attached herewith and it is also available on university website [www.unishivaji.ac.in](http://www.unishivaji.ac.in) (students Online Syllabus)

You are, therefore, requested to bring this to the notice of all students and teachers concerned.

Thanking you,

Yours faithfully,

Dy Registrar

Copy to:

1	The Dean, Faculty of Science & Technology	7	Appointment Section
2	Director, Board of Examinations and Evaluation	8	P.G.Seminar Section
3	The Chairman, Respective Board of Studies	9	Computer Centre (I.T.)
4	B.Sc. Exam	10	Affiliation Section (U.G.)
5	Eligibility Section	11	Affiliation Section (P.G.)
6	O.E. I Section	12	P.G.Admission Section

# Proposed syllabus

## Skill Based course in Apiculture

### Unit I

15

#### 1. Introduction to Apiculture - scope, importance

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

**[Practical: To study the morphology of Honeybees]**

Types of honey bees- indigenous, exotic, Species of honey bees. Origin, systematics and distribution of honey bees.

**[Practical: To study different species of honey bees.]**

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

**[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]**

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

#### 3. Honeybee Enemies and Diseases [with the help of Photographs]

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

15

#### 4. Beekeeping: Tools and Equipment.

Basic requirements for beekeeping start up

BIS standard Tools used in apiculture.

**[Practical: Demonstration Different equipment required for bee keeping]**

Introduction to types of bee boxes and Their Parts

**[Practical: Study of different types and parts of the bee box]**

**[Practical: i. Handling frames of bee colony, ii. Division of Colonies, iii. Bee Capturing, iv. Queen Rearing, v. Sugar feeding of colonies in scarcity period]**

## **5. Honey Processing and Bee Hive Products**

Honey - its properties and application in various fields

Honey extraction & handling - Quality control standards, Processing of honey.

**[Practical: i. Extraction of Honey using Honey extractor, ii. moisture reduction, iii. packing and storing of Honey. iv. Honey testing kit - Physical and chemical methods of analysis.]**

Other valuable by-products of honey bees – Wax, Bee venom & Royal jelly extraction.

**[Practical: Methods of Extraction of Beewax, Royal Jelly, and Bee venom.]**