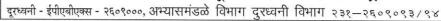


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शिवाजी विद्यापीठ, कोल्हापूर - ४१६००४,महाराष्ट्र





SU/BOS/Science/

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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 Sericlture (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 (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:

-	T		
1	The Dean, Faculty of Science & Technology		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		P.G.Admission Section

Proposed syllabus

Skill Based course in Apiculture

Unit I

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.]