

## APICULTURE

Semester	Subject Code	Category	Lecture		Theory		Practical	Credits
			Hrs/ week	Total Hours/ Semester	Hrs/ week	Total Hours/ Semester		
IV	21NZO4A	Non major Elective-II	2	30	2	30	Nil	2

### COURSE OBJECTIVES:

- To encourage young learners to learn apiculture practices.
- To inculcate knowledge on useful animals to Mankind
- To generate motivation for Self-Employment

### COURSE OUTCOMES (CO)

On the successful completion of the course, students will be able to:

CO Number	CO Statement	Knowledge Level (K1-K4)
CO1	Students will understand the division of labour of Bee colony.	K2
CO2	Students will understand the modern techniques of Bee rearing.	K2, K3
CO3	Students will get an awareness of culturing healthy Bees	K2, K3
CO4	Students will have wide knowledge on economic importance of Bees	K3, K4
CO5	Students will develop entrepreneurial skills.	K3, K4

**Knowledge Level:** K1- Remember; K2 – Understand; K3 – Apply; K4 – Analyze.

### MAPPING WITH PROGRAMME OUTCOMES

COS	PO1	PO2	PO3	PO4	PO5
CO1	S	M	M	S	S
CO2	S	S	S	M	M
CO3	M	M	S	S	S
CO4	S	S	M	S	S
CO5	S	S	S	S	S

S- Strong; M – Medium; L- Low

Distribution of Marks: Theory 100% and Problems Nil %

## **UNIT I**

### **BIOLOGY OF BEES**

**(6 Hours)**

Taxonomical position of Honey Bees, Morphology and Anatomy of Honey Bees- Mouth parts - Sting apparatus, Identification of different species of honey bee, Social Organization of Bee Colony.

## **UNIT II**

### **REARING TECHNIQUES**

**(6 Hours)**

Rearing of Bees- Artificial Bee rearing (Apiary), Collection and preservation of bee pasture, Beehives – Newton and Langstroth Bee Pasturage- Selection of Bee Species for Apiculture. Equipments required for Bee Keeping, Methods of Extraction of Honey (Indigenous and Modern),

## **UNIT III**

### **THREATS TO APICULTURE**

**(6 Hours)**

Bee Diseases (Bacterial, Viral and fungal) and their Pests, Control and Preventive measures.

## **UNIT IV**

### **ECONOMIC IMPORTANCE OF APIS**

**(6 Hours)**

Economics of Bee- Products of Apiculture Industry and its Uses (Honey, Bees Wax, Propolis), Pollen etc. Entrepreneurship in Apiculture. Employing artificial Beehives for cross pollination in horticultural gardens

## **UNIT V**

### **PRACTICALS**

**(6 Hours)**

Construction of Artificial Bee hives (Demo) Identifications of Sting apparatus. Precautionary measures during honey collection/ Visit to Apiary

## **TEXTBOOKS**

<b>S. No.</b>	<b>Authors</b>	<b>Title of the Book</b>	<b>Publishers</b>	<b>Year of Publication</b>
	Prost, P. J.	Apiculture	Oxford and IBH, New Delhi	1962
	Bisht, D.S.; Naim, M. and Mehrotra, K.N.	Apiculture	ICAR Publication	1980
	Singh S	Beekeeping in India	Indian council of Agricultural Research	1986

**WEB SOURCES:**

[www.sciencedirect.co](http://www.sciencedirect.co).

[www.pebmed.com](http://www.pebmed.com)

[www.khansacademy.com](http://www.khansacademy.com)

[www.epatsala.com](http://www.epatsala.com)

[www.swayam.com](http://www.swayam.com)

**TEACHING METHODOLOGY**

- Class room teaching
- Charts/ Models
- Power point Presentations
- Discussions
- Assignments
- Home test

**SYLLABUS DESIGNERS**

- Dr. D. Sasikala, Assistant Professor and HOD
- Dr. V. Kiruthiga, Assistant Professor
- Dr. V. Rekha, Assistant Professor
- Dr. A. Vinodhini, Assistant Professor
- Dr. G. Vidhya, Assistant Professor