

The Kelkar Education Trust's
V. G. Vaze College of Arts, Science and Commerce (Autonomous) - Affiliated to
University of Mumbai

(Re Accredited By NAAC with Grade A)

Revised Syllabus for FYBSc
Based on NEP-2020 Guidelines

Program: B.Sc.
Course : BOTANY
Semester I

To Be Implemented From
Academic Year 2023-24

F.Y.B.Sc (Botany)

Semester: I

VSC- I

Course Title: Horticulture I

Course code: VGVUSVS101

Credits: 04

Teaching Scheme (Hrs/Week)				Continuous Internal Assessment (CIA) 40 marks					End Semester Examination	Total
L	T	P	C	CIA-1	CIA-2	CIA-3	CIA-4	Lab	Written	
2	-	2	4	20	15	05		-	60	100
Max. Time, End Semester Exam (Theory) -2Hrs.										

Course Learning Objectives :

1. To understand the concept of different types of horticultural practices.
2. Apply the basic principles and components of gardening.
3. To make students acquainted with plant propagation methods

Course Learning Outcomes :

After the successful completion of the course, Learners will be able to

CO1- Apply various concepts of Horticulture management in their day-to-day life.

CO2- Understand and develop scientific garden management practices.

CO3 - Learn and use different plant propagation practices.

CO4-Take up horticulture as a skill for entrepreneurship.

Horticulture I

Unit I – Introduction

1. Horticulture – Definition, Scope, importance
2. Branches of horticulture – Olericulture, Pomology, Floriculture, Landscape architecture, Nursery Development.
3. Vegetable and fruit zones in India

Unit II – Basics of Gardening

1. Types of plants and plant parts, Morphological characters
2. Soil and its characteristics, Potting Mixtures. Mineral nutrition and Garden implements
3. Common plant pests and pest management

Unit III - Propagation Methods

1. Seeds (Germination, Viability, Dormancy, Storage, Transplantation)
2. Leaf, stem cutting, vegetative propagating organs like rhizome, stem tuber, bulb, corm, root suckers
3. Grafting, budding, Layering

References :

1. Chadha K L (2002). Handbook of Horticulture ICAR
2. Peter K V (2008). (Ed.) Basics of Horticulture New India Publication agency
3. Bose T K., Maiti R G., Duha R S and Das P (1999). Floriculture and Landscaping, Naya Prakash
4. Sudheer K P and Indira V (2007) Post harvest technology of Horticultural crops, New India Publication agencies
5. Nambisan KMP (1992) Design elements of Landscape gardening Oxford and IBH
6. Arora J S (1999). Introduction to ornamental horticulture Kalyani Publishers, Ludhian

PRACTICALS IN HORTICULTURE I

	Practicals
1.	Preparation of Potting Mixtures
2.	Seed germination techniques – Breaking Seed Dormancy
3.	Leaf, stem cutting, rhizome, stem tuber, bulb, corm, root suckers
4.	Grafting, budding, Layering
5.	Visit to a Nursery / flower shows and exhibitions report writing

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Revised Syllabus for F. Y. B. Sc
Based on NEP-2020 Guidelines

Program: B.Sc.
Course: BOTANY
Semester II

To Be Implemented From
Academic Year 2023-24

F.Y.B.Sc (Botany)
Semester: II
SEC- I
Course Title: Florals and Fragrances - I

Course code: VGVUSBSE201

Credits: 04

Teaching Scheme (Hrs/Week)				Continuous Internal Assessment (CIA) 40 marks					End Semester Examination	Total
L	T	P	C	CIA-1	CIA-2	CIA-3	CIA-4	Lab	Written	
2	-	2	4	20	15	05		-	60	100
Max. Time, End Semester Exam (Theory) -2Hrs.										

Course Learning Objectives –

After the successful completion of the course, Learners will able to

1. To understand the concept of florals and fragrances
2. To implement the use of various plants and their plant parts in the extraction of essential oils
3. To prepare various formulations by using floral extracts

Course Outcomes:

CO1- The course will help in understanding the importance of aromatic plants and their use in extracting essential oils from various plant parts.

CO2- The course will help to acquaint the students with various applications of floral fragrances in different formulations.

CO3- This course will help in developing entrepreneurial skills among students

Florals and Fragrances - I

Unit 1 – Fundamentals in Essential Oils (10L)

- 1.1 History of Perfumery
- 1.2 Essential oils (Definition, properties)
- 1.3 Botanical sources of essential oils

Unit 2 – Extraction techniques (10L)

- 2.1 Localization of oil glands in aromatic plants.
- 2.2 Various methods of extracting essential oils from aromatic plants (floral extracts)
- 2.3 Commercially important plants for extracting essential oils (Patchouli/Vetiver/ Rose/any other suitable plant material)

Unit 3 - Applications of essential oils (10L)

3.1 Essential oils in the perfume industry (Incense Sticks)

3.2 Essential Oils in home décor (Candles, Potpourri)

3.2 Essential oils in Cosmetics (Foot salts)

Practicals (Floral and Fragrances):

1. Visit to College Campus to observe and collect aromatic plants
2. Mounting of trichomes, glandular hair and oil glands.
3. Extraction of essential oil from any one plant material (Patchouli, Vetiver or Rose)
4. Preparation of incense sticks
5. Preparation of fragrant wax candles
6. Preparation of foot salt or potpourri
7. Field/ Industrial/ Institutional visit

References:

1. Economic Botany : a comprehensive study by S.L.Kochhar, Cambridge University Press; 5th edition
2. Introduction to Perfumery, 2nd Ed. By Tony Curtis & David Williams.
3. Poucher's Perfumes, Cosmetics and Soaps.10th Edition.Kluwer academic publishers.
4. College Botany Volume I and II by Das, Dutta and Ganguly.
5. Handbook on essential oils. Science, Technology, and Applications.Edited by K. Hüsni Can Başer, Gerhard Buchbauer CRC Press Taylor & Francis Group.