

Department of Revised Syllabus of II Year Diploma Program (UG)

Preamble: The Certificate Course in Horticulture under autonomy will be effective from the academic year 2018 – 2019. Horticulture plays a pivotal role in the food and livelihood security of India. Economists view that commercialization of agriculture and promotion of agri- business in India is correlated to the progress in the plantation and horticulture sectors. Horticulture and Plantation sector cover production, post-harvest management, marketing, processing and export of produce. The syllabus has been prepared keeping in view the unique requirements of the horticulture based industries and society. The emphasis of the contents is to provide students the latest information of application of horticulture with the aim of disseminating skills of entrepreneurship. The Private sector has come up with massive investments in corporate farming, processing and marketing. The course content also lists new practical exercises so the students gets a hands on experience of the latest techniques that are currently in use. The course will also inspire students towards becoming an entrepreneur and enable students to get employed in plant based industries

Objectives of the Program Course

- 1. To inculcate the importance of studying horticultural practices and usage of horticultural crops.**
- 2. To equip the students with practical knowledge of different horticultural practices.**
- 3. To familiarise the students with the horticulture based industries at national and international level.**
- 4. To impart the basic skills of entrepreneurship in the students specifically in the field of horticulture.**

Program Outcomes:

Title of Program: 1. TITLE:Horticulture Practices

2. YEAR OF IMPLEMENTATION:2021-22

3. GENERAL OBJECTIVES OF THE COURSE:

- 1. To inculcate the importance of studying horticultural practices and usage of horticultural crops.**
- 2. To equip the students with practical knowledge of different horticultural practices.**

3. To familiarise the students with the horticulture based industries at national and international level.
4. To impart the basic skills of entrepreneurship in the students specifically in the field of horticulture.

4. DURATION: **One Year**

5. PATTERN: **Annual**

6. MEDIUM OF INSTRUCTION: **English**

7. STRUCTURE OF COURSE:

Syllabus Structure (UG)

Year	Semester	Course No.	Course Code	Contact Hours	Credits (1Credit=15 H)	Total Marks	
2	III	CT III	DBT 303	30	2	75	
		CL III	DB L303	60	2	75	
	IV	CT IV	DBT 404	30	2	75	
		CL IV	DB L404	60	2	75	
	Annual	CP II	DBP202	30	1	50	
	Industrial and or Incubation and or Research and or Field Training				30	1	-
	Total				240	10	350

D: Diploma, *: Departmental Code (C: Chemistry, MI: Microbiology, CSE: Computer Science (Entire), etc)

C: Course, T: Theory, L: Lab (Practical), P: Project

Total No. of Courses: 6 (Theory: 02, Practical: 02, Project: 01)

Theory and Practical: Semester, Project: Annual

Total No. of Papers: 06 (Theory: 02, Practical: 02, Project: 01)

Theory and Practical: Semester, **Project: Annual**

Keep only one table for UG syllabus

Semester III

CT-III: DBT 303: Title: - Principles of Gardening and Floriculture

(Contact Hrs: 30 Credits: 2)

Learning Objectives:

Students will be able to

1. To know the scope of the horticulture.
- 2 To know the basics and types of gardening.

Unit I: Principles of Gardening

(15)

- 1.1 Definition, objectives and importance of gardening, types of gardens, some famous gardens of India (The Rock garden, The Water garden, Terrace garden, Cacti Garden)
- 1.2 Principles of garden design and garden layout, Landscape and home gardening, planting and after care of herbs, shrubs, climbers and trees. Landscaping highways, educational institutions, public places and commercial complexes
- 1.3 Lawns: Importance, essentials of good lawn, preparation of new lawn, lawn grasses, maintenance and care of lawns, non- grass lawns
- 1.4 Indoor Plants: Types, selection and importance of indoor plants, Care and maintenance of common indoor plants

Unit II: Principles of Floriculture

(15)

- 2.1 Definition, importance and scope of floriculture, classification of ornamental plants (Flowering annuals, perennials, herbs, shrubs, vines, palms and trees).
- 2.2 Cultivation and management of commercial flowers: Rose, Gerbera, Gladiolus, Tuberose, Chrysanthemum, Carnation, Marigold, Lilies, Anthurium, Aster, Jasmines, Dahlia (any five)

Learning Outcomes:

After completion of the unit, Student is able to

1. The students should be able to explain the concepts of gardening and types of gardening.
2. The students should be able to explain the importance and scope of floriculture

CL-III: DB L303: Title: Principles of Gardening and Floriculture

(Contact Hrs: 60 Credits: 02)

Learning Objectives:

Students will be able to

1. To know the scope of the horticulture.
2. To know the basics and types of gardening.

(Minimum 4)

List of Practical's (15)

Practicals

1. Planning and designing of gardens and landscape.
2. Preparation of land for lawn and planting.
3. Collection and maintenance of lawn grasses and indoor plants.
4. Morphology and propagation of important indoor plants.
- 5-6 Study of important pests and diseases of indoor plants and their management
- 7-9. Identification and description of commercially important flower crops and their varieties
10. Propagation of any one commercial flower crop.
- 11-12. Techniques to improve vase life of cut flowers

Learning Outcomes:

After completion of the unit, Student is able to

1. The student shall learn to plan and prepare a garden.
2. The student shall learn about the plants used in floriculture.
3. The student shall learn about agents of spoilage in horticulture

Reference Books:

1. Aldhous JR (1972) Nursery practices [R]. Forestry Commission Bulletin No. 43. London: Page Bro Ltd. Pp. 184. (Unit I)
2. Andre G (1994) Application of Botany in Horticulture. Science Publishers, USA (Unit I, II, III)
3. AroraJS (2014) Introductory Ornamental Horticulture. Kalyani Publishers, New Delhi (Unit II)
4. Augé R, Vidalie H (1995) In Vitro Culture and Its Applications in Horticulture. Science Publishers Incorporated, USA (Unit I, II, III)

5. Bhojwani SS, Prabhakar N (1998) Plant Tissue Culture and Molecular Biology: Application and Prospects. Ed. PS Srivastava, Narosa, New Delhi, 171-220. (Unit II)
6. Bhojwani SS, Razdan MK (1996) Plant tissue culture: Theory and Practice. Revised edition, Elsevier, Amsterdam.
7. Duryea ML (1984) Nursery cultural practices: Impacts on seedling quality. In forest nursery manual: Production of Bareroot seedlings. Duryea ML and Thomas, DL (eds.) MartinusNijhoff/Dr W. Junk publishers. The Hauge/Boston/Lancaster, for forest research laboratory, Oregon State University. Corvallis. (Unit II)
8. Edmond JB, Andrews FS, Senn TL (1975) Fundamentals of Horticulture. McGraw-Hill, USA (Unit II, IV)

Semester IV

CT-IV: DBT 404: Title: Post-Harvest Technology and Marketing

(Contact Hrs: 30 Credits: 2)

Learning Objectives:

Students will be able to

1. To know the basics and application of floriculture.
2. To know the post-harvest and preservation technologies for improving the shelf life of the plants.
3. To know the industry aspects: of horticulture.

Unit I: : Principles of Processing / Post Harvest Technology (15)

- 1.1 Introduction: Concept, Need/Importance, food spoilage, Preservation Industries in India.
- 1.2 Floral Preservation and storage: Packing and transport of cut flowers, increase in vase life of flowers
- 1.3 Methods of Fruit and Vegetable Preservation: Temporary-Asepsis, Low temperature, Exclusion of moisture, mild antiseptics, pasteurization, exclusion of air, use of preservatives and Permanent preservation- storing, canning, drying, Salt (Pickling), with sugars, by freezing, other methods of preservation-filtration, carbonation, fermentation, irradiation, chemicals, oil and spices.
- 1.4 Canning: General principles of canning, general canning procedure, canning procedures in some fruits-Mango, Pomegranate, Strawberry, orange and vegetables- Peas, Cauliflower, Cucurbita

Unit II: Principles of Marketing (15)

- 2.1 Introduction to marketing and its basics
- 2.2 Process of demand and supply operating in the horticulture industry
- 2.3 Subsidies and loans from government and Non-government sector
- 2.4 Role and scope of advertising and online marketing in horticulture
- 2.5 Horticulture industry- global and Indian scenario, Satara as a key player in the floriculture industry.
- 2.6 Case study of successful horticulturists (atleast two)

(15)

Learning Outcomes:

After completion of the unit, Student is able to

- 1.The students should be able to explain different techniques of post-harvest technology.

2.The students should be able to explain the importance and scope of marketing.

Reference Books:

1. Sanders TW (2006) Encyclopedic Dictionary of Horticulture. Bio Green Books, Delhi. (Unit I, II, III, IV)
2. Sheela VL (2011) Horticulture. MJP Publishers, New Delhi. (Unit III, IV)
3. Singh SP (1990) Advances in Horticulture and Forestry. Scientific Publishers, New Delhi (Unit IV)

CL-IV:DB L404: Title (Practical):

(Contact Hrs: 60 Credits: 02)

Learning Objectives:

Students will be able to

1. To know the basics and application of floriculture.
2. To know the post-harvest and preservation technologies for improving the shelf life of the plants.
3. To know the industry aspects : of horticulture.

List of Practical's (15)

13. Study of agents of spoilage in Floriculture.
- 14-15. Methods of preservation of flowers.
- 16-18. Post harvest diseases and insects .
19. Study of model Floriculture set up.
20. Study of local Floriculture market.
21. Study of horticulture market catering to national demands.(online stastical survey)
22. Study of horticulture market catering to international demands.
- 23-24 Case study and survey study of marketing strategies used in horticulture industry,

Learning Outcomes:

After completion of the unit, Student is able to

1. The student shall learn different methods of preservation of flowers.
2. The student shall learn about the horticulture market- Local, National and International.
3. The student shall learn about the marketing strategies used in horticulture industry.

Reference Books:

1. Heit CE (1967) Propagation from seed: 8. Fall planting of fruit and hardwood seeds. American Nurseryman 126(4):12-13, 85-90. (Unit II)
2. Kaul GL (1989) Horticulture crop in India. (Unit III)
4. Prasad S (1999) AgrosDictionary of Horticulture. Agrobios, Jodhpur (Unit III)
5. Rao KM (2005) Textbook of Horticulture. McMillan India Ltd, New Delhi. (Unit I, II, III, IV)
6. Razdan, MK (1995) An Introduction to Plant Tissue Culture. Oxford and IBH publishing Co. Pvt. Ltd. New Delhi. pp 27-91.

**CP-II: DP202: Project
(Contact Hrs. 60, Credits: 2)**

**Industrial and or Incubation and or Research and or Field Training
(Contact Hrs. 60, Credits: 2)**

BOS Sub-Committee		Expert Committee	
1.	Chairman	1.	Name of Academic Expert
2.	Member	2.	Name of Industrial Expert