

Syllabus for **HORTICULTURE (MINOR)** in consonance with
Curriculum framework

w.e.f. AY **2026-27** onwards

COURSE STRUCTURE

Year	Semester	Course	Title	No of Hrs/week	No of Credits
II	III	1	Fundamental of Horticulture - (T)	3	3
			Fundamental of Horticulture - (P)	2	1


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SEMESTER – III
COURSE 1: FUNDAMENTALS OF HORTICULTURE

Theory

Credits – 3

3 hrs/week

I. Learning Objectives: By the end of this course the learner has:

1. To realize the divisions and zones of Horticulture in India
2. To capable of planning new fruit orchard and able to produce new plantlets through various propagation methods.
3. To learn basic knowledge related to horticulture.

II. Learning Outcomes: On completion of this course students will be able to:

1. Understand the scope and potential of Horticulture products in India and Andhra Pradesh.
2. Illustrate different systems of planting in orchard and predict the number of plants in a given land.
3. Demonstrate the methods and types of training and pruning.
4. Explain sexual and asexual propagation methods of plants.

III. Syllabus of Theory:

Unit-1: Introduction to Horticulture

9 Hrs.

1. Horticulture: Definition, importance and scope of horticulture.
2. Divisions of Horticulture with suitable examples and their importance.
3. Area and production of Horticultural crops in A.P. and India.
4. Horticulture zones of India and Andhra Pradesh.

Unit 2: Characteristics of Orchards

9 Hrs.

1. Orchard: Definition, different systems of planting orchards – square, rectangular, Quincunx, hexagonal and contour.
2. Calculation of planting densities in different systems of planting.
3. Training: Definition, principles and objectives; merits and demerits of different methods of Training.
4. Pruning: Definition, principles and objectives: Different methods of pruning.

Unit-3: Plant propagation

9 Hrs.

1. Sexual propagation – advantages and disadvantages.
2. Seed germination, process of seed germination; factors affecting seed germination.
3. Asexual propagation – advantages and disadvantages.
4. Vegetative propagation by Bulbs, Corms, Tubers, Rhizomes, Stolons, Runners and Offsets.

Unit- 4: Vegetative propagation techniques

9 Hrs.

1. Cuttings: Definition, methods of Cuttings.
2. Layering: Definition, methods of Layering.
3. Grafting: Definition; methods of Grafting.
4. Budding: Definition; methods of Budding.

Unit- 5: Important Horticultural operations

9 Hrs.

1. Definition of Irrigation-Different methods of irrigation followed in horticultural crops.
2. Definition of manures and fertilizers-different methods of application of manures and fertilizers to horticultural crops.
3. Definition of mulch-objectives of mulching-different types of mulches-organic and inorganic mulches with suitable examples.
4. Cropping systems-inter cropping and multi-tier cropping, their merits and demerits with suitable examples.


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IV. Text Books/ Reference Books:

- **Prasad and Kumar, 2014.** Principles of Horticulture 2nd Edition Agribios India.
- **Kumar, N., 1990** Introduction to Horticulture. Rajyalakshmi Publications, Nagarkoil, Tamilnadu.
- **Jithendra Singh, 2002.** Basic Horticulture. Kalyani Publishers, Hyderabad
- **KausalkumarMisra and Rajesh Kumar, 2014** Fundamentals of Horticulture Biotech books.
- **Sadhu . M .K 1996.** Plant propagation, New Age International Publishers, New Delhi
- **Sarma. R. R 2002** Propagation of Horticultural crops : Principles and practices Kalyani Publishers, New Delhi
- **Hartman. HT and Kester. D.E 1976** Plant propagation. Principles and Practices, Prentice Hall of India Pvt. Limited, Mumbai.

SEMESTER – III
COURSE 1: FUNDAMENTALS OF HORTICULTURE

Practical

Credits – 1

2 hrs/week

I. Laboratory/field exercises:

1. Study of horticultural tools and implements – identification, handling, maintenance.
2. Preparation of pot mixture and pot filling – soil, sand, FYM proportions.
3. Practice of nursery bed preparation and sowing methods.
4. Methods of vegetative propagation – cutting, layering, grafting, budding.
5. Seed treatment techniques – scarification, stratification, chemical treatments.
6. Layout of orchard – different systems (square, rectangular, hexagonal, quincunx).
7. Preparation of nursery records – labeling, tagging, and maintenance.
8. Irrigation methods in horticulture – surface, drip, sprinkler demonstration.
9. Fertilizer and manure application – calculation of doses and practical application.
10. Training and pruning practices – demonstration in fruit trees.
11. Identification of horticultural crops – fruits, vegetables, ornamentals, spices.
12. Preparation and preservation of herbarium sheets of horticultural plants.

II. Suggested activities and evaluation methods:

A. Measurable:

a. Student seminars:

1. Importance, scope and statistics of horticulture in India and Andhra Pradesh
2. Branches or divisions of horticulture with suitable examples
3. Climatic zones of horticulture in India and Andhra Pradesh.
4. Systems of planting in an orchard
5. Types and methods of pruning in horticultural crops
6. Training methods in horticultural crops
7. Types of propagation methods (Asexual and sexual)
8. Cuttings – Types of cuttings
9. Layering – Types of Layering
10. Grafting – Types of grafting
11. Budding – Types of Budding

c. Student Study Projects:

1. Demonstrate different methods of planting systems
2. Collection of different soil samples of local area
3. Method of demonstration on mixing of fertilizer
4. Study of different tools and implements in horticulture
5. Demonstrate on different methods of Cuttings
6. Demonstrate on different methods of Layering
7. Demonstrate on different methods of Grafting & Budding

d. Assignments: Written assignment at home / during 'O' hour at college; preparation of charts with drawings, making models etc., on topics included in syllabus.

B. General:

1. Group Discussion (GD)/ Quiz/ Just a Minute (JAM) on different modules in syllabus of the course.
2. Visit to Horticulture University/Research station.

MODEL QUESTION PAPER
COURSE 1: FUNDAMENTALS OF HORTICULTURE

Times: 3 Hours

Maximum Marks: 75

SECTION – A

(Answer **ANY FIVE** questions. Each question carries 3 Marks)

(5 × 3 = 15 Marks)

1. Define horticulture and mention its importance.
2. List the major divisions of horticulture with one example for each.
3. What are the different systems of planting orchards?
4. Define pruning and state its objectives.
5. Differentiate between sexual and asexual propagation.
6. Mention any four factors affecting seed germination.
7. Define grafting and list any two common methods of grafting.
8. What is layering? Write any two methods of layering.
9. Define irrigation and name any two irrigation methods used in horticultural crops.
10. What is mulching? Write two types of mulches with examples.

SECTION – B

(Answer any **ONE** question from each Unit. Each question carries 12 Marks) (5 × 12 = 60 Marks)

UNIT – I

11. A. Explain in detail the definition, importance, and scope of horticulture in India.

OR

B. Describes the different divisions of horticulture with suitable examples and discuss their importance.

UNIT – II

12. A. Discuss the different systems of planting orchards with neat diagrams.

OR

B. Define training and pruning. Explain their objectives, principles, and methods used in horticultural crops.

UNIT – III

13. A. Differentiate between sexual and asexual propagation.

OR

B. Describe the process of seed germination and discuss the factors affecting seed germination in horticultural crops.

UNIT – IV

14. A. Explain the various methods of vegetative propagation by cuttings, layering, grafting, and budding with examples.

OR

B. Describe in detail the steps and types of grafting and budding used in fruit crops.

UNIT – V

15. A. Explain different methods and application of manures and fertilizers in horticultural crops.

OR

B. Write short notes on mulching and cropping systems in horticultural crops.