

Sri Venkateswara University, Tirupati

Syllabus for **B.VOC HORTICULTURE (MAJOR)** in consonance with Curriculum framework
w. e. f 2025-26 AY onwards
COURSE STRUCTURE

Year	Semester	Course	Title	No of Hrs/week	No of Credits
I	I	1	Fundamental of Plant Physiology - (P)	3	3
			Fundamental of Plant Physiology - (P)	2	1
		2	Organic farming – (T)	3	3
			Organic farming – (P)	2	1
	II	3	Seed Technology – (T)	3	3
			Seed Technology – (P)	2	1
		4	Silvi Horticulture – (T)	3	3
			Silvi Horticulture – (P)	2	1
II	III	5	Fundamental of Horticulture - (T)	3	3
			Fundamental of Horticulture - (P)	2	1
		6	Introduction to Soil Science – (T)	3	3
			Introduction to Soil Science – (T)	2	1
		7	Management of Pests in Horticultural Crops – (T)	3	3
			Management of Pests in Horticultural Crops – (P)	2	1
	IV	8	Basics of Vegetable Science – (T)	3	3
			Basics of Vegetable Science – (P)	2	1
		9	Plant Tissue Culture – (T)	3	3
			Plant Tissue Culture – (P)	2	1
		10	Management of Diseases in Horticultural Crops – (T)	3	3
			Management of Diseases in Horticultural Crops – (P)	2	1
III	V	11	Basics of Fruit Science – (T)	3	3
			Basics of Fruit Science – (P)	2	1
		12	Plantation crops, Spice crops, Medicinal crops and Aromatic crops – (T)	3	3
			Plantation crops, Spice crops, Medicinal crops and Aromatic crops – (P)	2	1
		13	Mushroom Culture and Technology – (T)	3	3
			Mushroom Culture and Technology – (P)	2	1
		14	Ornamental Horticulture – (T)	3	3
			Ornamental Horticulture – (P)	2	1


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IV	VI	15	Commercial Floriculture – (T)	3	3
			Commercial Floriculture – (P)	2	1
	VII	16	Plant propagation– (T)	3	3
			Plant propagation– (P)	2	1
		17	Dry land horticulture– (T)	3	3
			Dry land horticulture– (P)	2	1
		18	Processing of horticultural crops– (T)	3	3
			Processing of horticultural crops– (P)	2	1
		19	Weed management of horticultural crops– (T)	3	3
			Weed management of horticultural crops– (P)	2	1
		20	Growth and development of horticultural crops– (T)	3	3
			Growth and development of horticultural crops– (P)	2	1
	VIII	21	Apiculture– (T)	3	3
			Apiculture– (P)	2	1
		22	Introduction to major field crops– (T)	3	3
			Introduction to major field crops– (P)	2	1
		23	Fundamentals of extension education– (T)	3	3
			Fundamentals of extension education– (P)	2	1
		24	Post harvest management of horticultural crops– (T)	3	3
			Post harvest management of horticultural crops– (P)	2	1
		25	Farm power and machinery– (T)	3	3
			Farm power and machinery– (P)	2	1

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SEMESTER - II
COURSE 3: SEED TECHNOLOGY

Theory

Credits – 3

3 hrs/week

I. Learning outcomes

After studying **Seed Technology**, students will be able to:

1. **Understand the importance of quality seed**
 - Explain how good quality seed improves crop yield, purity, and productivity.
2. **Identify different classes of seed**
 - Distinguish between breeder, foundation, certified, and truthful seeds based on characteristics and certification standards.
3. **Explain seed production techniques**
 - Describe steps in seed production, including field selection, isolation, rouging, harvesting, and processing.
4. **Perform seed quality testing**
 - Conduct tests for germination, purity, moisture content, and viability following standard laboratory methods.
5. **Understand seed processing and storage methods**
 - Explain procedures for cleaning, drying, grading, and safe storage to maintain seed vigor and longevity.

II. SYLLABUS

Unit - 1: Introduction to Seed Technology

9 Hrs.

- Definition and importance of seed and seed technology.
- Role of seed in agriculture.
- Characteristics of good quality seed.
- History and development of seed industry in India.

Unit - 2: Classes of Seed and Seed Certification

9 Hrs.

- Types of seed: Nucleus, Breeder, Foundation, Certified seed.
- Seed multiplication chain.
- Principles and procedures of seed certification.
- Seed certification agencies and their functions.

Unit - 3: Seed Production and Processing

9 Hrs.

- Seed production techniques
- Seed crop management
- Seed harvesting and drying
- Seed processing and storage

Unit - 4: Seed Storage and Preservation

9 Hrs.

- Seed storage techniques
- Seed preservation methods
- Seed viability maintenance
- Seed storage facilities and management

Unit -5: Seed Quality and Testing

9 Hrs.

- Seed quality evaluation
- Seed testing methods
- Seed certification and labeling
- Seed quality control and management


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III. Textbooks/ Reference Books

1. Principles of Seed Technology
 - Author: P.K. Agrawal
 - Publisher: ICAR / Kalyani Publishers
2. Seed Technology
 - Author: Dr. M. Prasada Rao
 - Publisher: Kalyani Publishers
3. Seed Science and Technology
 - Author: V. K. Agarwal
 - Publisher: IBH Publishing
4. Fundamentals of Seed Science and Technology
 - Author: L.O. Copeland & M.B. McDonald
 - Publisher: Springer
5. A Textbook of Seed Science and Technology
 - Author: B.L. Jana
 - Publisher: Scientific Publishers Handbook of Seed Science and Technology
 - Editor: D.B. Neeraja
 - Publisher: ICAR / Agrotech Publishing
6. Seed Production and Certification
 - Author: K. Raja and R. Arumugam
 - Publisher: Scientific Publishers

SEMESTER - II
COURSE 3: SEED TECHNOLOGY

Practical

Credits – 1

2 hrs/week

I. Laboratory/field exercises:

1. Identification of different types of seeds (nucleus, breeder, foundation, certified).
2. Study of seed structure (dicots and monocots).
3. Sampling techniques and seed lot preparation.
4. Seed purity analysis.
5. Germination tests (between paper, top of paper, sand method).
6. Moisture content determination (oven and moisture meter methods).
7. Seed vigor testing (seedling length, dry weight).
8. Study of seed certification tags and labels.
9. Preparation and treatment of seeds with fungicides/insecticides.
10. Study of seed storage structures and packaging materials.
11. Record

II. Suggested activities:

A. Measurable:

Student seminars:

1. Seed Certification and Quality Control
2. Seed Production Techniques for Major Crops
3. Seed Dormancy and Germination Mechanisms
4. Hybrid Seed Technology
5. Genetically Modified (GM) Seeds: Prospects and Concerns
6. Seed Storage and Preservation Techniques
7. Seed Testing Methods and Equipment
8. Role of Seed Technology in Sustainable Agriculture
9. Impact of Climate Change on Seed Production and Quality

Student Study Projects:

10. Impact of Seed Treatment on Germination and Seedling Vigour in Major Crops
11. Assessment of Seed Storage Conditions on Seed Viability and Longevity.
12. Comparison of Certified, Hybrid, and Farmer-Saved Seeds in Terms of Quality Parameters

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

MODEL QUESTION PAPER
COURSE 3: SEED TECHNOLOGY

Times: 3 Hours

Maximum Marks: 75

SECTION – A

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

(5 × 3 = 15 Marks)

1. Definition and importance of seed
2. History and development of seed
3. Foundation seed
4. Seed certification functions
5. Seed production
6. Seed harvesting
7. Seed storage techniques
8. Seed viability maintenance
9. Seed quality evaluation
10. Seed management

SECTION – B

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

UNIT – I

11. A. Role of seed in agriculture.

OR

- B. Characteristics of good quality seed.

UNIT – II

12. A. Types of seed: Nucleus, Breeder, Foundation, Certified seed

OR

- B. Principles and procedures of seed certification.

UNIT – III

13. A. Seed harvesting and drying

OR

- B. Seed production techniques

UNIT – IV

14. A. Seed preservation methods

OR

- B. Seed storage facilities and management

UNIT – V

15. A. Seed testing methods

OR

- B. Seed certification and labeling