

SRI VENKATESWARA UNIVERSITY:TIRUPATI
B.VOC. HONOURS PROGRAMME IN HORTICULTURE

COURSE STRUCTURE

V - SEMESTER W.E.F. 2025-26

Skills Gen. Edu	Courses	Title of Paper/Course and code	Credits per course	Hours/ week	Total Hours/ Course	Marks		
						Internal	External	Total
Domain Core component	Major-I	Ornamental Horticulture	3	3	45	25	75	100
	Practical	Ornamental Horticulture	1	2	30		50	50
	Major-II	Commercial Floriculture	3	3	45	25	75	100
	Practical	Commercial Floriculture	1	2	30		50	50
	Major-III	Organic farming	3	3	45	25	75	100
	Practical	Organic farming	1	2	30		50	50
	Major-IV	Seed technology	3	3	45	25	75	100
	Practical	Seed technology	1	2	30		50	50

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B. VOC. HONOURS PROGRAMME IN HORTICULTURE

MAJOR: HORTICULTURE

V- SEMESTER

MAJOR PAPER-I: ORNAMENTAL HORTICULTURE

Credits -3

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

- 1.To obtain knowledge in various types of Gardens and their role in recreating human psyche.
- 2.To acquire knowledge in identification and propagation of Ornamental plants
- 3.To understand the designing of Gardens in public areas.

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

- 1.Acquire a critical knowledge in Ornamental Horticulture and its significance.
- 2.Identify and explain Living and non-living components in an Ornamental Garden.
- 3.Acquire skills on propagation and planting of Ornamental plants.
- 4.Perform managerial skills related to Ornamental Gardening.
- 5.Demonstrate skills of Designing and Developing Ornamental Gardens in Public Areas.

III. Syllabus of Theory:

UNIT -I: Introduction to Ornamental Horticulture 9 Hrs.

- 1.Definition, History and Scope of Gardening
- 2.Types of Gardens- Formal and Informal Gardens with examples
- 3.Basic principles of Gardening
- 4.Ornamental Garden features

UNIT -II: Plants in Ornamental Gardening 9 Hrs.

Importance, Design values, Propagation, Planting of following Ornamental plants:
(a) Trees (b) shrubs (c) Herbaceous perennials (d) Flowering Annuals

UNIT -III: Special Plants in Ornamental Gardening 9 Hrs.

Importance, Design values, Propagation, Planting of following Ornamental plants:
(a) Climbers (b) Creepers (c) Palms (d) Ferns (e) Cacti and Succulents

UNIT -IV: Landscape management and Lawn management 9 Hrs.

- 1.Landscape design for educational institutes
- 2.Landscape design for Industrial areas.
- 3.Lawn – Selection of Grasses, Establishment and Maintenance of lawn
- 4.Interior scaping.

UNIT -V: Special type of Gardens and Bonsai 9 Hrs.

- 1.Terrarium, Vertical Garden, Roof Garden,
- 2.Rock Garden, Water Garden
- 3.Bonsai – Types, Culture and maintenance of Bonsai

IV. Text Books/ Reference Books:

- 1.Randhawa, G S. Ornamental Horticulture in India.
- 2.Bose, T. K and Mukherjee, D. 2004. Gardening in India. Oxford & IBH Publishers.
- 3.Chandra, K. L and Choudhary, B. 1986. Ornamental Horticulture in India. Publication and Information division ICAR, New Delhi.
- 4.Randhawa, G. S. Amitabha Mukhopadhyay. 2004. Floriculture in India. Allied Publishers Pvt. Ltd., New Delhi.
- 5.Aora, J.S. 2006. Introductory Ornamental Horticulture. Kalyani Publishres, Ludhiana.
- 6.Iyengar, G. S. 1990. Complete Gardening In India. IBH, Banglore
- 7.Walker, D. T. 1983. Planting Designs. PDA, Publishers Corporation, USA
8. Eckbo, G. 1956. The Art of Home Landscaping
- 9.Bose, T. K., Malti, R.G., Dhua, R. S and Das, P. 2004. Floriculture and Landscaping. Nayaprakash, Calcutta
- 10.Randhwa, M. S. 1983. Flowering Trees

PRACTICAL SYLLABUS
MAJOR PEPAR-I: ORNAMENTAL HORTICULTURE
Credits -1

I. Laboratory/field exercises:

1. Identification and description of various plants grown in ornamental gardens.
2. Tools, Implements and Containers used in ornamental gardens.
3. Planning, designing and establishment of gardens viz. Lawn, Hedge, Edge, Rockery etc.
4. Demonstration of Types and styles of gardens using photos or videos.
5. Planning, designing and establishment of water garden, Carpet bedding, Shade Garden and Roof Garden.
6. Preparation of land for Lawn and Planting.
7. Demonstration of Bonsai making.
8. Study and creation of Terrarium and Vertical Garden.

IV. Suggested activities:

A. Measurable:

a. Student seminars:

1. History and Scope of Gardening
2. Interior scaping
3. Cultural operations in Gardening.
4. Tools and implements used in gardening
5. Cultural practices in Bonsai
6. Propagation of Ornamental plants
7. Suitable Indoor plants for Balcony
8. Designing of Garden

b. student Study Projects:

9. Identification and preparation of a list of Ornamental plants
10. Demonstrate various propagation methods used in propagation of ornamental plants.
11. Identification of various garden components in nearby gardens

c. assignments: Written assignment at home / during '0' 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.
3. Visit to Local gardens

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B. VOC. HONOURS PROGRAMME IN HORTICULTURE

MAJOR: HORTICULTURE

V- SEMESTER

MAJOR PEPAR-II: COMMERCIAL FLORICULTURE

Credits -3

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

- 1.To understand the importance of cut and loose flowers in day-to-day life
- 2.To study the cultivation practices of different flower crops.
- 3.To understand the post-harvest techniques of flowering crops to increase self-life.

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

- 4.Understand the significance of flowers in human life.
- 5.Acquire skills related to production techniques in floriculture.
- 6.Demonstrate skills of protected cultivation in floriculture.
- 7.Perform skills in relation to post-harvest operations in floriculture.

II. Syllabus of Theory:

UNIT – I: Basic concepts of floriculture

9 Hrs.

- 1.Commercial Floriculture- Definition, Aesthetic, Cultural and Industrial importance of flowers.
- 2.Area, production and exports of flowers in India.
- 3.Scope of Commercial Floriculture in India.
- 4.Constraints in flower production in India and remedies to overcome them

UNIT – II: Production Technology

9 Hrs.

- 1.Production techniques of following flowering plants for Domestic and Export market:
(a) Rose (b) Chrysanthemum (c) Gerbera

UNIT – III: Production Technology

9 Hrs.

- 1.Production techniques of following flowering plants for Domestic and Export market:
(a) Marigold (b) Crossandra (c) Jasmine

UNIT – IV: Production Technology

9 Hrs.

1. Production techniques of following flowering plants for Domestic and Export market:
(a) Orchid (b) Tuberose (c) Gladiolus

UNIT – V: Post-Harvest practices in Floriculture

9 Hrs.

1. Post-Harvest technology of cut and loose flowers.
2. Dry flower technology in cut flowers
3. Flower arrangement – eastern and western flower arrangement.
4. Bouquets – materials and methods.

III. Text Books/ Reference Books:

1. Randhawa, G. S and Mukhopadhyaya, A. 2004. Floriculture in India.
2. Bose, T. K and Yadav, L. P. 1989. Commercial Flowers. Nayaprakash, Calcutta
3. Prof. Bhattacharjee, S. K. Advanced Commercial Floriculture. Aavishkar Publishers Distributor, Jaipur – 320003
4. Aora, J. S. 2006. Introductory Ornamental Horticulture. Kalyani Publishres, Ludhiana – 141 008
5. Alex Laurie Kiplinger, D. C and Kennard Nelson, S. 1976. Commercial Flower Forcing. McGraw Hill Company, New York
6. Lersen, R. A. 1981. Introduction to Floriculture. Academic press, New York.
7. Pal, B.P. 1991. The Rose in India. Publications and Information Division ICAR, New Delhi.

PRACTICAL SYLLABUS
MAJOR PEPAR-II: COMMERCIAL FLORICULTURE
Credits -1

I. Laboratory/field exercises:

1. Identification of important flower crops
2. Preparation of nursery bed for flower seeds sowing.
3. Training and Pruning of Roses in open and polyhouses.
4. Propagation of rose by cutting and budding.
5. Propagation methods in chrysanthemum.
6. Layering methods for Jasmine propagation.
7. Visit to green house to study protected cultivation of Gerbera.
8. Field visit to commercial flower growing area.

IV. Suggested activities:

A. Measurable:

a. Student seminars:

1. Importance and Scope of cultivation of flowers
2. Production technology of flower crops
3. Post harvest techniques in floriculture.
 - o Dehydration of cut flowers
 - o Dry flower technology
 - o Protected cultivation in flower crops
4. Training and pruning in various flower crops
5. Methods of flower arrangement
6. Classification of flowers

b. student Study Projects:

7. Identification and preparation of a list of flowering plants
8. Demonstrate various propagation methods used in propagation of flowering crops.
9. Demonstrate various drying techniques of flowers to increase vase life.

c. assignments: Written assignment at home / during '0' 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.
3. Visit to Local floriculture fields.

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**B. VOC. HONOURS PROGRAMME IN
HORTICULTURE MAJOR: HORTICULTURE
V- SEMESTER
MAJOR PAPER-III: ORGANIC FARMING
Credits -3**

I. Learning Objectives

- Understand the principles and philosophy of organic farming.
- Identify and describe various organic certification standards and procedures.
- Evaluate different organic inputs (fertilizers, pesticides, etc.) and their role in sustainable agriculture.
- Demonstrate knowledge of crop rotation, intercropping, and soil fertility management in organic systems.
- Assess the ecological, economic, and social impacts of organic farming practices.
- Design and manage an organic farming system suited to local conditions.
- Analyze the challenges and opportunities in marketing organic produce.
- Promote biodiversity and environmental conservation through organic practices.

II. Learning Outcomes

- Explain key concepts and historical development of organic agriculture.
- Differentiate between conventional and organic farming systems in terms of practices and outcomes.
- Apply knowledge of organic soil management, composting, and green manuring techniques.
- Prepare and use biofertilizers and biopesticides appropriately.
- Interpret and follow organic certification guidelines and procedures.
- Develop a farm plan that incorporates organic farming principles.
- Assess the sustainability of an organic farm based on ecological and economic indicators.
- Communicate effectively about organic farming practices and policies with stakeholders and consumers.

III. Syllabus of Theory

UNIT - I: Introduction to Organic Farming 9 Hrs.

- Definition and principles of organic farming
- History and evolution of organic agriculture
- Importance and scope of organic farming in India and globally
- Advantages and limitations of organic farming

UNIT - II: Organic Soil Management 9 Hrs.

- Soil fertility and its importance in organic farming
- Organic manures: FYM, compost, green manuring, vermicomposting
- Crop rotation and cover cropping
- Soil health indicators and testing methods

UNIT - III: Organic Crop Production Techniques 9 Hrs.

- Organic seed selection and treatment
- Cultural, mechanical, and biological weed management
- Use of biofertilizers and biopesticides
- Organic certification standards for crop production

UNIT – IV: Certification, Standards, and Marketing 9 Hrs.

- National and international organic certification bodies (e.g., NPOP, IFOAM)
- Organic standards and labeling
- Certification process and documentation
- Marketing of organic produce

UNIT - V: Sustainable Practices and Case Studies 9 Hrs.

- Integrated organic farming system (IOFS)
- Role of NGOs and government schemes (e.g., PKVY, MOVCDNER)
- Success stories and case studies of organic farmers
- Climate-resilient organic farming practices

PRACTICAL SYLLABUS
MAJOR PAPER-III: ORGANIC FARMING

Credits -1

- Identification of organic inputs and products
- Preparation of compost (Vermicompost, Biodynamic compost)
- Preparation and application of organic liquid manures:
 - Panchagavya
 - Jeevamrutha
 - Beejamrutha
- Use of biofertilizers (Rhizobium, Azospirillum, Azotobacter, PSB)
- Preparation and application of botanical pesticides (neem extract, garlic extract, etc.)
- Identification of pests and diseases in organic crops
- Biological control agents (Trichoderma, Pseudomonas, Bacillus subtilis, etc.)
- Packaging, labeling, and marketing of organic produce
- Raising nursery organically
- Organic cultivation practices for at least two crops (e.g., paddy, vegetables, pulses)
- Intercropping, crop rotation and mulching techniques

➤ **Field Visits**

- Field visit to an organic input production unit

➤ **Record Book Work**

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MAJOR: HORTICULTURE

THIRD YEAR V- SEMESTER

PAPER-IV: SEED TECHNOLOGY

Credits -3

UNIT - I: 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 - II: 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 - III: Seed Production and Processing **9 Hrs.**

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

UNIT - IV: Seed Storage and Preservation **9 Hrs.**

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

UNIT - V: Seed Quality and Testing

9 Hrs.

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

PRACTICAL SYLLABUS
MAJOR PEPAR-IV: SEED TECHNOLOGY
Credits -1

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

Suggested activities:

A. Measurable:

a. 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

b. 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

c. assignments: Written assignment at home / during '0' hour at college; preparation of charts with drawings, making models etc., on topics included in syllabus.

Textbooks/ Reference Books

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