

# SRI VENKATESWARA UNIVERSITY : TIRUPATI

B.VOC. DEGREE COURSE IN HORTICULTURE

Under CBCS W.E.F. 2020-21

## COURSE STRUCTURE

### SEMESTER – II

Sl. No	Skill/ Gen. Edu	Courses	Title of the Paper/Course and code	Credits per course	Hours/ week	Total Hours/ Course	Marks		
							Internal	External	Total
1	General Education component Gen.Edu	Language	General English	3	4	60	25	75	100
2		Life skills	Information and Communication Technology	2	2	30	-	50	50
3		Skill Dev. Course	Basics of Vascular Plants	2	2	30	-	50	50
4			Fruits and Vegetable Preservation	2	2	30		50	50
5	Domain Skill component	<b>Core-I</b>	Methods of Plant Breeding, Tissue Culture, Ornamental Horticulture & Land Scaping	4	4	60	25	75	100
6		Practical-I	Methods of Plant Breeding, Tissue Culture, Ornamental Horticulture & Land Scaping	2	2	30	-	50	50
7		<b>Core-II</b>	Production Technology of Fruit Crops	4	4	60	25	75	100
8		Practical-II	Production Technology of Fruit Crops	2	2	30	-	50	50
9		<b>Core-III</b>	Silvi Horticulture, Medicinal and Aromatic Plants & Pests	4	4	60	25	75	100
		Practical III	Silvi Horticulture, Medicinal and Aromatic Plants & Pests	2	2	30	-	50	50
10		Industrial Internship	Industrial Training for 30 days	3	36	144	-	50	50
<b>Total Credits</b>				<b>30</b>	<b>Total Marks</b>				<b>750</b>

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**FIRST YEAR – SECOND SEMESTER**

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**SKILL COMPONENT**

**Core Paper-I: METHODS OF PLANT BREEDING, TISSUE CULTURE, ORNAMENTAL  
HORTICULTURE AND LAND SCAPING**

**Credits: 04**

**Hours: 60**

**Marks: 75**

**Learning outcome:**

After complete of these courses, students should be able to be

- Learn about definitions, know about methods of plants breeding
- Understand the significance of tissue culture and in vitro culture
- Production of ornamental horticulture in AP
- Know about ornamental flowers and plants
- Understand the design of landscaping and its maintenance in various places.

**Unit-I (14 h)**

Reproduction parts of plants, Role and objectives of reproductive system of plants, Plant Breeding methods – Self pollinated crop, cross pollinated, Clonally Propagated Crops and Special breeding methods, Breeding techniques in different crops (Fruits and vegetables, spices, and flower crops) and maintenance.

**Unit-II (12 h)**

History, Concept, and application of tissue culture, General techniques and Brief explain the techniques of tissue culture (Callus, Anther/ pollen Protoplast culture) and factors affecting in vitro growth and development of tissue, and Importance of Cryopreservation. Briefly explain the primary metabolites and secondary metabolites and role of secondary metabolites.

**Unit-III (12 h)**

Definition, scope and objectives of ornamental (Decorative plants and flowers) horticulture and production of ornamental horticulture in national level and aesthetic values., Classification of ornamental plants based on utility. Industrial importance of ornamental plants and flowers, design and general cultivation aspects for ornamental plants and flowers.

**Unit- IV (11 h)**

Definition, scope, objectives, and importance of landscaping, differences between lawn and landscaping and Study of principles and elements of landscape design, Landscape design for various places and special care of lawns in various places namely play ground, parks, Dam sites, Hydroelectric stations, Rivers, home garden, industrial, educational institutions, Hospital etc., Lawn-selection of grass-site selection-soil-preparation of soil-drainage-manuring and grading- maintenance of lawn-mowing rolling irrigation weeding-diseases and other problems.

**Unit-V (11 h)**

Global trends in urban horticultural concepts - Urban Planning and town planning concepts- Geddisian Triad concept, garden city concept, satellite town principles, importance of plants in urban planning, role of plants in managing urban environmental factors and vice-versa., Basics, techniques and layout– social horticulture– physiological and social aspects of ornamental plants and flowers, Pollution control through horticulture. Herapeutic Horticulture for Health Benefits and Definition and application of aroma therapy – aroma garden.



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**SKILL COMPONENT**

**Practical Paper-I: METHODS OF PLANT BREEDING, TISSUE CULTURE, ORNAMENTAL  
HORTICULTURE AND LAND SCAPING**

**Credits: 02**

**Hours: 30**

**Marks: 50**

1. Identification of ornamental plants and garden components
2. Study of form, size, shape, texture, flowering season and flower colour of different living components.
3. Identification and description of trees, shrubs, flowers beds, foliage beds, climbers and creeper, hedges, edges, cacti, succulents, ferns and palms.
4. Study of different styles of garden
5. Design and methods of lawn Establishment.
6. Identification, planning and designing of non–living components.
7. Principles and concepts in garden designing
8. Preparation of landscape design plan for park, public places home, institution and industries
9. Study on types of garden
10. Study on horticultural crafts
12. Study on types of lawn grass.
13. Preparation of landscape project
14. Visit to various gardens/forestry department

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**SKILL COMPONENT**

**Core Paper-II: PRODUCTION TECHNOLOGY OF FRUIT CROPS**

**Credits: 04**

**Hours: 60**

**Marks: 75**

**Learning outcome:**

After complete of these courses, students should be able to be

- Know and understand about Climatic and non climatic fruits
- Learn about morphology of various fruits
- Understand about Culture practice of fruits

**Unit-I (12 h)**

Scope and objectives of fruit crops and Economical Importance of fruits growing in India and Andhra Pradesh. Nutritive values of fruits, production in national and international level and Andhra Pradesh. Definition of Pomology and classification of fruit crops with examples, Differences between climacteric and non climacteric fruits, Cultivation practices in tropical, sub- tropical, and temperate regions with examples.

**Unit II (12 h)**

Taxonomy and importance of Mango, Banana, Citrus, Guava, Papaya., Origin, Distribution, area and climate. soil, varieties, propagation, land preparation, manuring and fertilizer, irrigation, cultivation, planting, intercropping, weed management pruning and training, flowering and fruit set and drop, diseases and pests, harvesting and yielding, packing and transport of the following fruit crops in tropical region namely Mango, Banana, Citrus, Guava, Papaya.

**Unit III ( 12 Hours)**

Taxonomy and importance of grape, citrus, durian, jackfruit, etc., Origin, Distribution, area and climate. soil, varieties, propagation, land preparation, manuring and fertilization, irrigation, cultivation, planting, intercultural, weed management pruning and training , flowering , fruit set and drop, diseases and pests , harvesting and yielding, packing and transport of the following Cultivation practices of sub-tropical fruit crops namely grape, citrus, durian, jackfruit, etc.

**Unit IV (12 h)**

Taxonomy and importance of arid crops such as Tamarind, Amla, Ber (Indian jujube), etc., Origin, history, distribution, area and production, uses and composition, varieties, soil and climatic requirements, propagation, planting, training and pruning, manuring and fertilizer application, irrigation, inter cropping, diseases and pests , harvesting and yield.

### **Unit V (12 h)**

Taxonomy and importance of minor fruit crops such as Jamun (Black berry) Bael (maredu), Wood apple etc., Origin, history, distribution, area and production, uses and composition, varieties, soil and climatic requirements, propagation, planting, Training And Pruning, manuring and fertilizer application, irrigation, inter cropping, diseases and pest , harvesting and yield.

#### **Books:**

1. Citriculture, Rajput, C.B.S. and Srihari Babu, R. 1958. Kalyani Publishers, New Delhi
2. Text book on Pomology (Fundamentals of fruit growing), Chattopadhyay, T.K.1997. Kalyani Publishers, Hyderabad.
3. Arid Fruit Culture, Chundawat, B.S. 1990. Oxford and IBH, New Delhi.

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**SKILL COMPONENT**

**Practical Paper-II: PRODUCTION TECHNOLOGY OF FRUIT CROPS**

**Hours: 30**

**Marks: 50**

**Credits: 02**

- 1 . Taxonomy and morphology of varieties of Mango and Banana.
2. Study of varieties of Grape and Citrus.
3. Study of varieties of Papaya, Sapota and Guava.
4. Study of varieties of Pomegranate, Custard apple.
5. Study of varieties of Apple.
6. Study of varieties of minor fruit crops
- 7 . Identification and collection of important diseases in fruit crops and Herbarium preparation.
8. Visit to a fruit market



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**SKILL COMPONENT**

**Core Paper-III: SILVI HORTICULTURE, MEDICINAL & AROMATIC PLANTS AND PEST**  
**Hours: 60** **Marks: 75** **Credits: 04**

**Learning outcome:**

After complete of these courses, students should be able to be

- Know about Silvi culture of important agro forestry species
- Understand the role of Medicinal & Aromatic Plants
- Identification and Description of Pests and observe in various crops

**Unit-I (12 h)**

Status and its Importance of forests in India /National and international level, National forest policy, 1988, Agro Forestry and their Classification, role of agro forestry in soil and water conservation, Definition, objectives of silviculture, Criteria for selection of tree species for agro forestry and Species Silviculture of important agro forestry species viz., cashew, casuarina, eucalyptus, tamarind, pungam, neem, jamun, ber, silk cotton and palmyrah, etc., and management.

**Unit-II (12 h)**

Medicinal plants –importance of medicinal plants –processing techniques production of Dioscorea, phyllanthus, rewinkle, Solanum, Aloe ,Coleus, Asparagus, Belladonna, Costus ,Aswagandha., Aromatic plants –Importance –essential oil industry in india –properties of essential oils –production technology of Mint, Palmarosa, Ocimum, Geranium Lemongrass, Vettivar, Citronella, Patchoul, and production harvest and processing techniques.

**Unit III (12 h)**

Identification and Description of pest in aromatic and medicinal plants.

**Unit-IV (12 Hours)**

Pests of Medicinal & Aromatic plants 1.Cinchona: Root grub, bugs. 2.Neem: Root grub, slug caterpillar, mired bug, mealy bug, tea mosquito bug. 3.Crotalaria: Sun hemp hairy caterpillar. 4.Cinnamon: leaf eating caterpillar, jumping bug. 5.Camphor: leaf roller, mealy bug, scales. 6.Mint: leaf roller, hairy caterpillars, termites, pyralid moth. 7.Datura: spotted borer, thrips. 8.Opium: cutworm, capsule borer, weevil. 9.Bellodona: Cut worm, potato beetle, flea beetle. 10.Dioscorea: aphids, red spider mites.

**Unit-V ( 12 h)**

Pests of stored products: 1.Tamarind beetle, cigarette beetle, Lesser grain borer, Kapra beetle, 2.Drug store beetle, Dried fruit moth, sweet potato tuber moth, red flour beetle, rice moth, Indian meal moth. 3.Dried current moth, Tobacco moth, dried fruit beetle, saw toothed beetle. 4.Insecticide residues problem in fruit, plantation, medicinal and aromatic plants and their tolerance limits.

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**SKILL COMPONENT**

**Practical Paper-III: SILVI HORTICULTURE, MEDICINAL & AROMATIC PLANTS AND PEST**  
**Hours: 30** **Marks: 50** **Credits: 02**

1. Identification, description of medicinal plants
2. Identification and description of aromatic plants
3. Identification and description of foresty trees
4. Identification, Description of pest in medicinal and aromatic plants.
5. Visit to foresty department.

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