SRI VENKATESWARA UNIVERSITY :: TIRUPATI
B.Sc. DEGREE COURSE IN HORTICULTURE

FIRST YEAR - FIRST SEMESTER
Revised Syllabus Under CBCS W.E.F. 2020-21

FUNDAMENTALS OF HORTICULTURE AND SOIL SCIENCE

(Total hours of teaching – 60 @ 04 Hrs./Week)

Theory :

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

- Understand the scope and potential of horticulture products in India and Andhra Pradesh.
- Classify the horticulture plants based on soil and climate.
- Illustrate different systems of planting in orchard and predict the number of plants in a given land.
- Demonstrate the methods and types of training and pruning.
- Explain the basics of soil science and justify the role of soil as a medium for plant growth
- Explain about integrated nutrient management and demonstrate the skills of soil testing**.**

Unit I: Introduction to Horticulture 12 Hrs.

1. Horticulture: Definition, importance of horticulture in terms of economy, production. employment generation, environmental protection and human resource development.
2. Divisions of horticulture with suitable examples and their importance.
3. Area, production of Horticultural crops in A.P. and India.
4. Fruit and vegetable zones of India and Andhra Pradesh.
5. Export scenario and scope for Horticulture in India.

Unit II: Classification Horticulture Crops 12 Hrs.

1. Classification of horticultural crops based on soil and climatic requirements.
2. Vegetable crop gardens – Nutrition and kitchen garden – tracer garden – vegetable forcing – market garden – roof garden.
3. Gardens in floriculture – flower gardens – soil and mixed gardens; land scape Horticulture.

Unit III :Characteristics of Orchards 12 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. Different types and methods of pruning.
4. Training: Definition, principles and objectives; merits and demerits of open and close centered, and modified leader systems.

Unit IV: Physico-chemical characteristics of Soil 12 Hrs.

1. Soil: Definition, minerals and weathering to form soils; factors of soil formation.
2. Soil taxonomy; soil color, texture and structure; other physical properties and stability.
3. Soil colloids and charges; ion adsorption and exchange; soil temperature and soil air.
4. Soil pH and acidity; soil alkalinity and salinity.

Unit V: Soil as a living matter 12 Hrs.

1. Soil organic matter – composition and decomposability.
2. Humus – fractionation of organic matter.
3. Soil biology: Soil microorganisms and fauna –beneficial and harmful roles.
4. Integrated nutrient management and soil tests.

Text 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
- **Kausal kumar Misra and Rajesh Kumar, 2014** Fundamentals of Horticulture Biotech books
- **Brady Nyle C and Ray R Well 2014** Nature and Properties of Soil Pearson Educational Inc , New Delhi
- Indian society of Soil Science IARI, New Delhi

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PRACTICAL - FUNDAMENTALS OF HORTICULTURE AND SOIL SCIENCE

(Total hours of teaching – 30 @ 02 Hrs./Week)

1. Study of features orchard planning and layout orchard.
2. Study of tools and implements in Horticulture.
3. Identification of various Horticulture crops.
4. Lay out of nutrition of garden.
5. Preparation of nursery beds for sowing of vegetable seeds.
6. Digging of pits for fruit plants.
7. Layout of different Planting systems.
8. Study of different methods of training.
9. Study of different methods of pruning.
10. Preparation of fertilizer mixtures and field application.
11. Preparation and application of growth regulators.
12. Layout of different irrigation systems.
13. Identification and management of nutritional disorders in important fruits, vegetables and flowers.

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B.Sc. DEGREE EXAMINATION IN HORTICULTURE

FIRST YEAR - FIRST SEMESTER
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Fundamentals of Horticulture and Soil Science

MODEL QUESTION PAPER FOR PRACTICAL EXAMINATION

Max. Time: 3 Hrs. Max. Marks: 50

1. Identify the horticulture tool/equipment and write its uses. **6 M**
2. Neatly draw the layout of kitchen garden. **6 M**
3. An irrigation method followed for horticulture crops with a neat sketch. **6 M**
4. A) A planting system followed in orchard with a neat diagram. **6 M**
   B) A famer wants to raise a mango orchard in one hectare of land with a spacing of 8 × 8 m and now calculate the number of plants he can be adopted if he chose the quincunx system of planting. **4 M**
   C) A famer wants to raise oil palm in one hectare of land with a spacing of 7.5 × 7.5 m and now calculate the number of plants he can be adopted if he chose the hexagonal system of planting. **4 M**
5. Define training and write different methods of training with a neat diagram. **4 M**
6. Record + viva voice **10 + 4 =14 M**

Suggested co-curricular activities for Horticulture Core Course – 1 in Semester- I:

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. Classification of horticultural crops based on soil and climate
5. Vegetable gardens
6. Ornamental gardens
7. Systems of planting in an orchard
8. Types and methods of pruning in horticultural crops
9. Training methods in horticultural crops
10. Soil taxonomy
11. Weathering process
12. Integrated nutrient management.

b. Student Study Projects:

1. Demonstrate Kitchen garden
2. Demonstrate different methods of planting systems
3. Preparation of Soil colour charts
4. Collection of different soil samples of local area
5. Testing of Soil samples for nutrient analysis
6. Testing of soil samples for acidity, alkalinity and salinity
7. Collection of mineral deficiency symptoms of various horticultural crops of local area.
8. Collection of local weeds in horticultural fields
9. Method of demonstration on mixing of fertilizers
10. Method of demonstration on preparation of growth regulators
11. Collection of Herbarium on nutritional disorder of horticultural crops
12. Study of different tools and implements in horticulture

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 modulesin syllabus of the course.
2. Visit to Horticulture University/Research station.

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Course – I: FUNDAMENTALS OF HORTICULTURE AND SOIL SCIENCE

MODEL QUESTION PAPER

Time: 3 hours Marks: 75 marks

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer any five of the following questions in Part A.

Part B consists of 5 Units. Answer one full question (A or B) from each unit (i.e., Q.No 9 from Unit – I, Q.No 10 from Unit – II, Q.No 11 from Unit – III, Q.No 12 from Unit – IV, Q.No 13 from Unit – V). Each question carries 10 marks.

PART – A

Answer any *Five* of the following question. (5X5=25M)

1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

(P.T.O)

PART – B

Answer All The Questions. Each question carries 10 marks (5X10= 50M)

9.	(A) OR (B)
10.	(A) OR (B)
11.	(A) OR (B)
12.	(A) OR (B)
13.	(A) OR (B)