

21ELCT183 HI-TECH. HORTICULTURE

Hours Per Week :

L	T	P	C
2	-	2	3

Total Hours :

L	T	P
30	-	30

COURSE DESCRIPTION AND OBJECTIVES:

Main objective of this subject is to introduce the students about latest technology in the field of horticulture

COURSE OUTCOMES:

Upon completion of the course, the student will be able to achieve the following outcomes:

COs	Course Outcomes
1	Students will understand nursery management and mechanization; micro propagation of horticultural crops
2	Students will learn basic modern field preparation and planting methods, protected cultivation
3	Students will learn different methods and components of precision farming: Remote sensing, Geographical Information System (GIS)

SKILLS:

- ✓ *Handling of different equipment used in poly-houses and nurseries*
- ✓ *Canopy management in horticultural crops*
- ✓ *Expertise in different grafting and micro propagation techniques*
- ✓ *Application of Geographical Information System (GIS), Differential Geo-positioning System (DGPS), Variable Rate applicator (VRA) in precision farming in horticultural crops*



Source:

https://www.justdial.com/hosur/hosur-hi-tech-horticulture-no-44-hosur-ho/9999p4344-4344-160606155909-x2l9_bzdet/photos

ACTIVITIES:

- o Visit to different structures of poly houses and green houses
- o Calculate the economics of poly houses and green houses
- o Visit precision farming unit and calculate economics
- o Assignment on success story on Hi-tech horticulture
- o Visit nursery of vegetables and fruit crops

UNIT - 1

Introduction: Introduction & importance; Nursery management and mechanization; Micro propagation of horticultural crops

UNIT - 2

Modern field preparation: Modern field preparation and planting methods, Protected cultivation: advantages, controlled conditions, methods and techniques

UNIT - 3

Micro irrigation systems: Micro irrigation systems and its components; EC, pH based fertilizer scheduling, canopy management, high density orcharding

UNIT - 4

Drying and dehydration: Drying and dehydration – Moisture measurement – EMC - Drying theory - Various drying methods - Commercial grain dryer (deep bed dryer, flat bed dryer, tray dryer, fluidized bed dryer, re-circulatory dryer and solar dryer)

UNIT - 5

Components of precision farming: Components of precision farming: Remote sensing, Geographical Information System (GIS), Differential Geo-positioning System (DGPS), Variable Rate applicator (VRA)

LABORATORY EXPERIMENTS**LIST OF EXPERIMENTS**

1. Types of polyhouses
2. Shade net houses
3. Intercultural operations
4. Identification and application of tools and equipments
5. Micro propagation
6. Nursery raising in portrays
7. Study of Micro-irrigation system and its components
8. Problems of micro irrigation system
9. Estimation of EC of soil and water
10. Estimation of pH in soil and water
11. Fertilizer scheduling
12. Canopy management in Mango
13. Canopy management in Guava
14. Canopy management in Grapes
15. Visit to Hi-Tech orchard and Hi-Tech nursery

REFERENCES:

1. Prasad, S. and Kumar, U. 2012. *Greenhouse Management of Horticultural Crops*. 2nd edition, Agribios publishers, New Delhi
2. Singh, H.P., Singh, G., Samuel, J.C., and Pathak, R.K.. 2003. *Precision Farming in Horticulture*. NCPAH, MOA, PFDC, CISH, Lucknow
3. Srivasthava, K.K. 2007. *Canopy Management of Fruit Crops*. International book distributing co., Lucknow