

21ELCT383 PROTECTED CULTIVATION

Hours Per Week :

L	T	P	C
2	-	2	3

Total Hours :

L	T	P
30	-	30



Source:

<https://images.app.goo.gl/jZJkaSo28Cu2kRCB7>

COURSE DESCRIPTION AND OBJECTIVES:

Main objective of this subject is to let student learn about protected farming to produce cash and medicinal crops with new and advanced technology

COURSE OUTCOMES:

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

COs	Course Outcomes
1	Students will be aware about the protected cultivation, cladding material involved in greenhouse/ poly house
2	Students will be aware about the irrigation and fertigation management in polyhouse
3	Students will understand the concept of cultivation of economically important medicinal and aromatic plants

SKILLS:

- ✓ *Develop models for protected cultivation structures*
- ✓ *Calculate cost benefit ratios for protected cultivation*

ACTIVITIES:

- o *Field visit of nurseries and flowers in protected green houses and shade nets*
- o *Practice different equipment used in protected cultivation*

UNIT - 1

Protected cultivation- importance and scope, Status of protected cultivation in India and World types of protected structure based on site and climate

UNIT - 2

Cladding material involved in greenhouse / poly house. Greenhouse design, environment control, artificial lights, Automation

UNIT - 3

Soil preparation and management, Substrate management. Types of benches and containers. Irrigation and fertigation management

UNIT - 4

Propagation and production of quality planting material of horticultural crops. Greenhouse cultivation of important horticultural crops – rose, carnation, chrysanthemum, gerbera, orchid, anthurium, liliium, tulip, tomato, bell pepper, cucumber, strawberry, pot plants, etc

UNIT - 5

Cultivation of economically important medicinal and aromatic plants. Off-season production of flowers and vegetables. Insect pest and disease management

LABORATORY EXPERIMENTS**LIST OF EXPERIMENTS**

1. Study of different types of green houses based on shape
2. Study of different types of green houses based on construction
3. Study of different types of green houses based on cladding material
4. Study of materials for construction of greenhouses
5. Study of construction of pipe framed green house
6. Measurement of environmental parameters inside greenhouse
7. Calculation of ventilation rates in active summer cooling system
8. Calculation of rate of air exchange in active winter cooling system
9. Field visit to green house
10. Raising of seedlings and saplings under protected conditions
11. Use of protrays in quality planting material production
12. Bed preparation and planting of crop for production
13. Intercultural operations
14. Soil EC and pH measurement
15. Regulation of irrigation. Fertilizers through drip, fogging and misting

REFERENCES:

1. Vilas M. Salone and Ajay K. Sharma. 2012. *Greenhouse Technology and Applications*. Agrotech Publishers. New Delhi
2. S. Prasad and U. Kumar. 2012. *Greenhouse Management of Horticultural Crops*. Second edition, Agrobios. New Delhi
3. Joe.J.Hanan. 1998. *Green houses: Advanced Technology for Protected Horticulture*, CRC Press, LLC. Florida
4. K. Radha Manohar and C. Igathinathane, 2013. *Greenhouse Technology and Management* BS Publications
5. Paul V. Nelson. 1991. *Green House Operation and Management*. Ball publishing USA