

Certificate course on

Plant Propagation and Nursery Management



Objectives:

This course aims to develop a basic understanding of the principles of plant propagation, an overview of propagation techniques, a general knowledge of the methods of propagation of the more commonly cultivated plants and the basic knowledge on entrepreneurial skills required to run a small scale commercial nursery.

Justification

The main problem of unemployment in the present situation can only be alleviated with self employment. There are lot of areas in agriculture to take up an enterprise and one of it is plant propagation. The number of educated but untrained youth who have passed VHSE/Plus two or above is increasing. These youth lack technical skill to start an enterprise. This course aims to give applied knowledge on basics of plant propagation, nursery management and basics of entrepreneurship development. In a state like Kerala where horticulture crops dominate, require more specialist propagators for successful management of the nursery industry.

Details of the proposed programmes

Duration : 6 months
Total Credits : 17
Location : Centre for E-learning, Kerala Agricultural University
College of Horticulture, Vellanikkara, Thrissur

Major areas of teaching

Major areas:

No	Module	Hours	Credit
a	Basics of nursery management	12	1+0
b	Seed propagation	36	1+1
c	Vegetative propagation-I	36	1+1
d	Vegetative propagation-II	36	1+1
e	Commercial nursery management	72	2+2
f	Entrepreneurship Development	12	1+0
g	Case study & project report	48	0+2
h	Major project work	96	0+4
Total		348	8+10=18

Selection process : On-line registration and Online screening

Eligibility for admission : Candidate should have a minimum qualification of pass in VHSE (Agriculture & allied subjects)/ pass in +2

Implementing team :

Institutional Head : Associate Dean, College of Horticulture

Supervising Head : Director
Centre for E-learning

Course Director : Institutional Co-ordinator (Extension)
Centre for E-learning

Principal Faculty : 1. From Dept. of Pomology and Floriculture,
2. From Dept. of Olericulture

Collaborating Centres /Units (proposed) : 1. Department of Pomology and Floriculture, College of Horticulture
2. Department of Olericulture, College of Horticulture
3. Department of Plant Breeding/Seed Technology, College of Horticulture

4. Department of Plant Biotechnology
5. Department of Crop Physiology, College of Horticulture
6. Dept. of Plantation crops and Spices
7. Department of Agrl. Economics, College of Horticulture
8. Department of Agrl. Engineering, College of Horticulture
9. Central Nursery, Kerala Agricultural University

Course fee : Rs. 3,000/- per student

Syllabus

I Basics of nursery management

1. Introduction to nursery
2. Plant propagation- methods and classification
3. Factors affecting plant growth
4. Plant growth regulators
5. Introduction to landscaping
6. Lawn making

II Seed propagation

1. Seed as propagule
2. Germination of seeds
3. Seed dormancy and viability
4. Seed production- method of collection, processing, etc.
5. Hybrid seed production
6. Seed treatment
7. Classes of seed
8. Seed testing
9. Commercial vegetable seedling production
10. Artificial seeds

III. Vegetative propagation-I //

1. Asexual reproduction-importance, advantages
2. Propagation through stolons, runners, offsets, bulbs, corms, rooted crowns, division, cuttings layering

IV Vegetative propagation-II

1. Grafting and budding
2. Root stock-scion relationship
3. Top working
4. Special practices in nursery management
5. Micro-propagation (tissue culture/in vitro culture)
6. Apomixis and poly embryony

V Commercial nursery management

1. Nursery- site selection, lay out, records
2. Nursery structures
3. Potting, repotting
4. Nursery management of major crops
5. Progeny orchard
6. Problems in nursery management and its control
7. Nursery accreditation and certification

VI. Entrepreneurship Development

1. Entrepreneurship – Concept, characteristics, approaches, need for entrepreneurship
2. Traits of an entrepreneur – Risk taking, leadership, decision making, planning, organising, coordinating and marketing; Types of entrepreneurs
3. Agri-Enterprises- Stages of establishing enterprise, Project Identification, Step to be considered in setting up an enterprise, Feasibility Report, Product selection
4. Project management and appraisal – market, technical, social, financial analysis
5. Market Management – concept planning for marketing target marketing and competitive strategy

VII. Case study & project report

VIII. Major project work

TIME SCHEDULE AND CREDIT

Sl. No	Code	Module	Credit	Hour	Distribution of sessions				
					Theory	Practical class	Field work	Project Work	Assignment
1.	PNM-1	Basics of nursery management	1+0	12	12	--	---	---	--
2.	PNM-2	Seed propagation	1+1	36	12	06	06	---	--
3.	PNM-3	Vegetative propagation-I	1+1	36	12	06	06	---	--
4.	PNM-4	Vegetative propagation-II	1+1	36	10	06	06	---	02
5.	PNM-5	Commercial nursery management	2+2	72	20	12	12	---	04
6.	PNM-6	Entrepreneurship Development	1+0	12	12	--	---	---	--
7.	PNM-7	Case study & project report	0+2	48	---	---	12	12	---
8.	PNM-8	Major project work	0+4	96	---	---	---	48	---
TOTAL			18	348	78	30	42	60	06

Note: One theory session is for 1 hour. Sessions of practical, field work, project work and assignments are for 2 hours.

Mode of delivery

Theory : Blend of online tutorials and class room sessions

Practical : Illustrated online labs and hands on practical sessions

Scheme of Evaluation :

The performance of the student will be evaluated through internal assessment. The internal assessment will be through online mid-term examination, assignments, project works and a written final examination.

Theory paper (Maximum – 100 & Minimum for pass – 40 Marks)

Midterm	Assignments	Final exam	Total
20 Marks	20 Marks	60 Marks	100 Marks

Practical paper (Maximum – 100 & Minimum for pass – 40 Marks)

Participation & presentation	Records	Final practical	Viva voce Exam	Total
10 Marks	10 Marks	60 Marks	20 Marks	100 Marks

Score card

< 40 %	= Failed
40 - 59	= Second Class
60 - 79	= First Class
80 and above	= First class with distinction

Absence from Examination

A student who could not attend the online midterm examination will get two more chances to write the exam at monthly intervals. A student has to complete the midterm examination before appearing the final examination. Those who miss/fail in the final examination will get two supplementary chances within the maximum period of one year.

Facilities

Existing facilities of the Centre for E-learning and the collaborating departments of College of Horticulture will be utilized

List of major equipments & infrastructural facilities existing, including laboratory

a) At Centre for E-learning

1. Online plat form for online tutorials and delivery of materials
2. IT technical support
3. Media Centre
4. DV Camcorder
5. Handy cam
6. DLP Projection System
7. Computer and computer room
8. Class rooms
9. A.V. Lab
10. SLR and Digital cameras
11. Document projection system
12. Interactive digital board.
13. Webinar and web conferencing system
14. OS Virtualisation for multi session management
15. Online learning management system

b) At Collaborating Departments

1. Progeny orchard
2. Tissue culture Lab
3. Seed production unit
4. Seed Extraction Unit
5. Seed testing lab
6. Nursery structures under Collaborating Departments
7. Propagation unit, Central Nursery
8. ATIC, Mannuthy