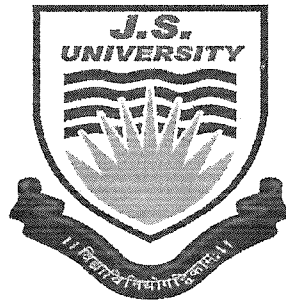


J.S. University, Shikohabad

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VALUE ADDED COURSE

Advanced Plant Propagation Techniques:
Enhancing Horticulture Skills

Faculty of Agricultural Sciences



J.S. University, Shikohabad
Faculty of Agricultural Sciences

Value Added Course

AGVAC-17

Advanced Plant Propagation Techniques: **Enhancing Horticulture Skills**

Learning Objectives:

This course is designed to teach advanced plant propagation techniques to individuals who have a basic understanding of plant propagation. Students will learn how to propagate plants using more advanced techniques such as grafting, budding, and tissue culture. The course will also cover how to select appropriate plant materials, how to prepare propagules, and how to manage the propagation environment for optimal growth. This course will enhance the horticulture skills of students and enable them to produce high-quality plants for commercial and personal use.


Course Outcomes:

Upon completion of this course, students will be able to:

1. Apply advanced plant propagation techniques such as grafting, budding, and tissue culture to propagate plants.
2. Select appropriate plant materials for propagation.
3. Manage the propagation environment for optimal growth.
4. Understand the economic and marketing aspects of plant propagation.
5. Produce high-quality plants for commercial and personal use.

Duration: 8-10 weeks (depending on the pace of the student)

Intake: 60 students

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Course Modules (Syllabus):

Module-1

Introduction to Advanced Plant Propagation Techniques

- Overview of plant propagation
- Advantages of using advanced plant propagation techniques
- Plant materials selection

Module-2

Grafting Techniques

- Types of grafting
- Preparing scions and rootstock
- Grafting techniques and procedures
- Aftercare and management

Module-3

Budding Techniques


- Types of budding
- Preparing buds and rootstocks
- Budding techniques and procedures
- Aftercare and management

Module-4

Tissue Culture Techniques

- Introduction to tissue culture
- Plant tissue culture laboratory
- Sterilization techniques
- Culture media preparation
- Techniques of plant tissue culture

Module-5

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Managing the Propagation Environment


- Environmental factors affecting propagation
- Propagation facilities design
- Temperature and humidity control
- Lighting requirements
- Fertilization and nutrient management

Assessment:


- Weekly quizzes and assignments
- Final project on plant propagation using advanced techniques

Reference books:-

- 1) "Plant Propagation: Principles and Practices" by Hudson T. Hartmann, Dale E. Kester, Fred T. Davies Jr., and Robert L. Geneve
- 2) "The Reference Manual of Woody Plant Propagation: From Seed to Tissue Culture" by Michael A. Dirr and Charles W. Heuser Jr.
- 3) "Plant Tissue Culture Concepts and Laboratory Exercises" by Robert N. Trigiano and Dennis J. Gray
- 4) "Principles of Plant Genetics and Breeding" by George Acquaah
- 5) "Vegetative Propagation of Tree Species: Principles and Practices" by P.K. Khanna and K.V. Bhat


(Name of Faculty)

Course Coordinator
Sawadeh
Kuma


(Name of Faculty)

Dean of Faculty
D.R.A.
Keshwan


(Name of Faculty)

Director General
Dr. Gaurav