

# **COURSE TITLE: ADVANCE BOTANY-VII (PLANT BREEDING & HORTOCULTURE)**

**CREDIT HOURS: 3**

**Syllabus Outline:** An introduction to Plant Breeding and Horticulture. Different strategies used in breeding for plant selection with desired characteristics. Application of horticulture techniques used in Green house and in landscaping.

## **Course Outline:**

**Plant Breeding:** Basic Principles and Aims of Plant Breeding, General Outlines of Breeding Methods, Selection in Inbreeders (Single Plant Selection, Mass Selection, Pedigree Selection, Bulk Population Selection, Backcross Breeding), Selection in Outbreeders (Single Plant Selection, Mass Selection, Recurrent Selection, Backcross Breeding).

**Horticulture:** An Introduction, Plant Science, Plant Propagation, Greenhouse Management and Crops, Integrated Pest Management (IPM), Container-Grown Plants, Using Plants in the Landscape, Lawn and Turf Grass Establishment and Maintenance, The Vegetable Garden, The Small Fruit Garden.

**Module Aims:** This course enables the students to learn basic knowledge about Plant Breeding Strategies and Implementation to Horticultural Studies. The aim of this module is to give general Information to enter into Applied Breeding and Horticultural Practices.

## **Learning Strategies:**

1. Lectures
2. Group Discussion
3. Laboratory Work
4. Seminar/ Workshop

**Learning Outcome:** The successful completion of this course shall enable the students to apply basic knowledge into Applied Plant Breeding Practices.

## **Evaluation Criteria**

Examination	Type	Marks
Internal Examination	Sessional Work	15%
	Mid-Semester	25%
External Examination	Final Semester	60%

## **Books Recommended:**

1. Peter, K.V. (2009). Basics of Horticulture. New India Publishers.
2. Brown, J. and Caligare, P. (2008). An Introduction to Plant Breeding. Blackwell Synergy Publishers.
3. Acquaach, G. (2006). Principles of Plant Genetics and Breeding. Blackwell and Synergy Publishers.
4. Kumar, N. (2006). Breeding of Horticulture Crops: Principles and Practices. New Indian Publishers.

5. Carpenter, P.L. and Walker, I. (2004). *Plants in Landscape*. (2<sup>nd</sup> Ed.), New York Freeman.
6. Acquaach, G. (2002). *Horticulture Principles and Practices*. (2<sup>nd</sup> Ed.), Prentice Hall of India Private Limited, New Delhi.
7. Crockett, J.V. (1999). *Landscape Gardening*. New York Time — Life.

# **TITLE: ADVANCEBOTANY-LAB-VII (PLANT BREEDING & HORTICULTURE)**

**CREDIT HOURS: 1**

**Syllabus Outline:** Different techniques used in Plant Breeding and Horticulture

## **Course Outline:**

1. Techniques of Plant Breeding
2. Pollination and fertilization in self and out Breeding Plants, their Implications and Consequences

**Module Aims:** The aim of this subject is to give practical knowledge and in-hand experience to the students in various Plant Breeding and Horticulture Methods.

## **Learning Strategies:**

1. Lectures
2. Group Discussion
3. Laboratory Work
4. Seminar/Workshop

**Learning Outcome:** The outcome of this course is same as Theory paper. The successful completion of this course will enable the students to apply their Practical Experience under full conditions.

## **Evaluation Criteria**

Examination	Type	Marks
Internal Examination	Sessional Work	15%
	Mid-Semester	25%
External Examination	Final Semester	60%

## **Books Recommended:**

1. Peter, K.V. (2009). Basics of Horticulture. New India Publishers.
2. Brown, J. and Caligare, P. (2008). An Introduction to Plant Breeding. Blackwell Synergy Publishers.
3. Acquaach, G. (2006). Principles of Plant Genetics and Breeding. Blackwell and Synergy Publishers.
4. Kumar, N. (2006). Breeding of Horticulture Crops: Principles and Practices. New Indian Publishers.
5. Carpenter, P.L. and Walker, I. (2004). Plants in Landscape. (2<sup>nd</sup> Ed.), New York Freeman.
6. Acquaach, G. (2002). Horticulture Principles and Practices. (2<sup>nd</sup> Ed.), Prentice Hall of India Private Limited, New Delhi.
7. Clevelard, D.A. (2002). Farmers, Scientists and Plant Breeding Integrating Knowledge and Practice.
8. Kang, M.S. (2002). Quantitative Genetics. Genomics and Plant Breeding.
9. Crockett, J.V. (1999). Landscape Gardening. New York Time - Life.

10. Gupta, S.K. (2000). Plant Breeding Theory and Techniques. Narosa Publishers.