

## **M.Sc. (Horticulture) – Floriculture and Landscape architecture**

### **FLA 611 BREEDING OF FLOWER CROPS AND ORNAMENTAL PLANTS (2+1)**

#### **Course Outcome**

**CO1-** The students must be able to demonstrate different breeding techniques in flower crops.

**CO2-** The students will become capable of working on breeding programmes in flower crops.

**CO3-** Will get insights into IPR issues and hybrid seed production in commercial flower crops.

### **FLA 612 PRODUCTION TECHNOLOGY OF LOOSE FLOWERS (2+1)**

#### **Course Outcome**

**CO1-** The student will have knowledge on advanced production technologies in growing flower crops.

**CO2-** The students will be able to diagnose production problems in loose flowers.

**CO3-** The students will become capable of managing a open field floriculture unit from planting to harvest.

### **FLA 613 PRODUCTION TECHNOLOGY OF CUT FLOWERS (2+1)**

#### **Course Outcome**

**CO1-** The student will have knowledge on advanced production technologies in growing cut flower crops.

**CO2-** The students will be able to diagnose production problems in cut flowers.

**CO3-** The students will become capable of managing a floriculture unit from planting to harvest.

### **HOR 621 GROWTH REGULATION AND STRESS MANAGEMENT IN HORTICULTURAL CROPS (2+1)**

#### **Course Outcome:**

**CO 1:** Students will be able to understand the physiology of growth and development and the role of growth regulators.

**CO 2:** Will be able to recommend growth regulation techniques and PGRs for production problems in horticultural crops.

**CO3:** Will be able to recommend cultural, chemical and biotechnological technologies for abiotic and biotic stresses.

### **FLA 621 ORNAMENTAL AND LANDSCAPE GARDENING (2+1)**

#### **Course Outcome**

**CO1-** The student will have knowledge on fundamental gardening principles which form the basis for learning landscape architecture.

**CO2-** The students will be able to identify different soft and hard landscape elements..

**CO3-** The students will become capable of designing a garden project and prepare the cost economics.

**CO4-** The students prepare garden layouts to a specific scale for big commercial projects.

### **FLA 622 CAD FOR OUTDOOR AND INDOORSCAPING (1+1)**

#### **Course Outcome**

**CO1-** The student will gain skill on CAD drawing tools in landscape designing.

**CO2-** The student will be able to design a garden plan with Computer Aided Designing tools.

**CO3-** Student will gain skill in working with ARCHICAD

**FLA 623 VALUE ADDITION IN FLOWERS (1+1)**

**Course Outcome**

**CO1-** The students must be able to demonstrate important value addition processes in flower crops.

**CO2-** Students will gain skill in production of floral crafts and dry flower making.

**CO3-** Will gain skill and proficiency in floral arrangements.

**FLA 624 TURFING AND TURF MANAGEMENT (2+1)**

**Course Outcome**

**CO1-** The students will be able to prepare a turf establishment project and to execute the same.

**CO2-** The students will be able to manage turf in commercial units.

**OPCHOR711 PROPAGATION AND NURSERY MANAGEMENT OF HORTICULTURAL CROPS (2+1)**

**Course Outcomes**

**CO1-** gain knowledge on physiology, principles, factors influencing, media and methods of propagation of Horticultural crops

**CO2-** gain skill in all propagation methods and technology for commercial scale adoption

**CO3-** Becomes capable of managing commercial nursery business.

**OPC-FLA 712 ORNAMENTAL HORTICULTURE ( 2+1)**

**Course Outcomes**

**CO1:** The students will be able to demonstrate laying out various types of garden

**CO2:** The students will be able to design gardens and prepare business plans

**CO3:** The students will be able recommend ornamental plants various zones, vertical farming and produce various grades of plants for trade

## **M.Sc. (Horticulture) – FRUIT SCIENCE**

### **FSC 612 TROPICAL AND DRY LAND FRUIT PRODUCTION (2+1)**

#### **Course Outcome**

**CO1-**Students will be able to appreciate the research advancements made in the Tropical and dry land fruit crops.

**CO2-**They will be able to recommend suitable package of practices for enhanced production of Tropical and dry land fruit crops.

### **HOR 621 GROWTH REGULATION AND STRESS MANAGEMENT IN HORTICULTURAL CROPS (2+1)**

#### **Course Outcome:**

**CO 1:** Students will be able to understand the physiology of growth and development and the role of growth regulators.

**CO 2:** Will be able to recommend growth regulation techniques and PGRs for production problems in horticultural crops.

**CO3:** Will be able to recommend cultural, chemical and biotechnological technologies for abiotic and biotic stresses.

### **HOR 622 PROTECTED AND PRECISION HORTICULTURE (2+1)**

#### **Course outcome :**

**CO1-** At the end of the course students will be able to suggest location specific protected structure for various horticultural crops.

**CO12-** The students will be able to design structures, micro irrigation and fertigation assembly.

**CO3-**The Students will be able to prepare media and prescribe sterilization techniques and media for regular and hydroponic production system.

**CO4-** The student will be able to recommend frontier technologies like Remote sensing, GIS, GPS and Precision horticulture.

### **FSC 621 SUBTROPICAL AND TEMPERATE FRUIT PRODUCTION (2+1)**

#### **Course Outcome**

**CO1-**Students will be able to appreciate the research advancements made in the Subtropical and Temperate fruit crops.

**CO2-**They will be able to recommend suitable package of practices for enhanced production of Subtropical and Temperate fruit crops.

### **FSC 622 BIOTECHNOLOGY OF FRUIT CROPS (1+1)**

#### **Course Outcome**

**CO1:** The students will be able to demonstrate different techniques in biotechnology.

**CO2:** They will be able to prepare a proposal for establishment of a tissue culture laboratory.

### **FSC 623 ORGANIC FRUIT PRODUCTION (1+1)**

#### **Course Outcome**

**CO1:** The students will be able to recommend suitable organic package of practices for enhanced production of fruit crops.

**CO2:** They will be able to establish various organic input production units.

### **FSC 624 POST HARVEST TECHNOLOGY OF FRUIT CROPS (2+1)**

#### **Course Outcome**

**CO1:** The students will be able to demonstrate different methods of processing of fruit crops

**CO2:** They will be able to prepare a proposal for establishing a fruit processing unit.

### **OPCHOR711 PROPAGATION AND NURSERY MANAGEMENT OF HORTICULTURAL CROPS (2+1)**

#### **Course Outcomes**

**CO1-** gain knowledge on physiology, principles, factors influencing, media and methods of propagation of Horticultural crops

**CO2-** gain skill in all propagation methods and technology for commercial scale adoption

**CO3-** becomes capable of managing commercial nursery business.

### **OPC - FSC 712 GENETIC RESOURCES AND CONSERVATION OF FRUIT CROPS (2+1)**

#### **Course Outcomes**

**CO1:** The students will be able to understand the strategies in conservation and utilization of fruit crop biodiversity

**CO2:** They will be able to demonstrate different techniques in *ex-situ* conservation.

**CO3:** They will be able to identify underutilized minor fruit crops.

## **M.SC. (HORTICULTURE) – PLANTATION, SPICES, MEDICINAL AND AROMATIC PLANTS**

### **PSM 611 BREEDING OF PLANTATION AND SPICE CROPS (2+1)**

#### **Course Outcome**

**CO1-** The students must be able to demonstrate different breeding techniques in plantation and spice crops

**CO2-** The student will develop the capacity to become a breeder in plantation and spice crops.

### **PSM 612 BREEDING OF MEDICINAL AND AROMATIC CROPS (2+1)**

#### **Course Outcome**

**CO1-** Students will be able to understand the different breeding methods followed in medicinal and aromatic crops.

**CO2-** They will be able to demonstrate and carry out different techniques employed in breeding of medicinal and aromatic.

### **HOR 621 GROWTH REGULATION AND STRESS MANAGEMENT IN HORTICULTURAL CROPS (2+1)**

#### **Course outcome:**

**CO 1:** Students will be able to understand the physiology of growth and development and the role of growth regulators.

**CO 2:** Will be able to recommend growth regulation techniques and PGRs for production problems in horticultural crops.

**CO3:** Will be able to recommend cultural, chemical and biotechnological technologies for abiotic and biotic stresses.

### **PSM 621 PRODUCTION TECHNOLOGY OF MEDICINAL AND AROMATIC CROPS (2+1)**

#### **Course Outcome**

**CO1:** Students will be able to appreciate the research advancements made in medicinal and aromatic crops.

**CO2:** They will be able to recommend suitable package of practices for enhanced production of medicinal and aromatic crops.

### **PSM 623 ORGANIC CULTIVATION OF SPICES AND PLANTATION CROPS PRODUCTION (1+1)**

#### **Course Outcome**

**CO1:**The students will be able to recommend suitable organic package of practices for enhanced spice production

**CO2:**They will be able to establish various organic input production units.

### **PSM 624 UNDER EXPLOITED MEDICINAL AND AROMATIC CROPS (1+1)**

#### **Course Outcome**

**CO1:** The students must be able to identify the RET medicinal plants and understand the problems in conservation

**CO2:** The student will develop skill in harvesting and packaging techniques for underutilized medicinal crops

### **PSM 625 PROCESSING OF PLANTATION, SPICE, MEDICINAL AND AROMATIC CROPS (2+1)**

**Course Outcome**

**CO1:**The students will be able to demonstrate different methods of processing of different spices and plantation crops.

**CO2:** The student will develop skill in solvent extraction and distillation of essential oil from aromatic plants

**OPCHOR711 PROPAGATION AND NURSERY MANAGEMENT OF HORTICULTURAL CROPS (2+1)****Course Outcomes**

**CO1-** gain knowledge on physiology, principles, factors influencing, media and methods of propagation of Horticultural crops

**CO2-** gain skill in all propagation methods and technology for commercial scale adoption

**CO3-** becomes capable of managing commercial nursery business.

**OPC-PSM 712 GENETIC RESOURCES AND CONSERVATION OF MEDICINAL AND AROMATIC PLANTS (2+1)****Course Outcomes**

**CO1:**The students will be able to identify the genetic resources of underutilized medicinal and aromatic plants

**CO2;**They will be able to demonstrate conservation techniques followed for underutilized medicinal and aromatic plants.

**CO3;**They will be able to identify underutilized minor medicinal crops.

## **M.SC. (HORTICULTURE) – VEGETABLE SCIENCE**

### **VSC 612 PRODUCTION TECHNOLOGY OF WARM SEASON VEGETABLE CROPS (2 + 1)**

#### **Course Outcome**

**CO1-**Students will be able to appreciate the research advancements made in the Warm season vegetables crops.

**CO2-**They will be able to recommend suitable package of practices for enhanced production of warm season vegetables.

### **HOR 621 GROWTH REGULATION AND STRESS MANAGEMENT IN HORTICULTURAL CROPS (2+1)**

#### **Course outcome:**

**CO 1:** Students will be able to understand the physiology of growth and development and the role of growth regulators.

**CO 2:** Will be able to recommend growth regulation techniques and PGRs for production problems in horticultural crops.

**CO3:** Will be able to recommend cultural, chemical and biotechnological technologies for abiotic and biotic stresses.

### **HOR 622 PROTECTED AND PRECISION HORTICULTURE (2+1)**

#### **Course outcome :**

**CO1-** At the end of the course students will be able to suggest location specific protected structure for various horticultural crops.

**CO12-** The students will be able to design structures, micro irrigation and fertigation assembly.

**CO3-**The Students will be able to prepare media and prescribe sterilization techniques and media for regular and hydroponic production system.

**CO4-** The student will be able to recommend frontier technologies like Remote sensing, GIS, GPS and Precision horticulture.

### **VSC 621 PRODUCTION TECHNOLOGY OF COOL SEASON VEGETABLE CROPS (2 + 1)**

#### **Course Outcome**

**CO1-**Students will be able to appreciate the research advancements made in the cool season vegetables crops.

**CO2-**They will be able to recommend suitable package of practices for enhanced production of cool season vegetables.

### **VSC 622 BIOTECHNOLOGY OF VEGETABLE CROPS (1+1)**

#### **Course Outcome**

**CO1;**The students will gain knowledge on the importance of biotechnology in crop improvement.

**CO2:**The students will be able to demonstrate different techniques in biotechnology.

**CO3:**They will be able to prepare a proposal for establishment of a tissue culture laboratory.

### **VSC 623 ORGANIC VEGETABLE PRODUCTION (1+1)**

#### **Course Outcome**

**CO1:** The students will be able to recommend suitable organic package of practices for enhanced production of vegetable crops.

**CO2:** They will be able to establish various organic input production units.

**VSC 624 PRINCIPLES AND PROCESSING OF VEGETABLE CROPS (2+1)**

**Course Outcome**

**CO1:** The students will be able to demonstrate different methods of processing of vegetable crops

**CO2:** They will be able to prepare a proposal for establishing a vegetable processing unit.

**OPCHOR711PROPAGATION AND NURSERY MANAGEMENT OF HORTICULTURAL CROPS (2+1)**

**Course Outcomes**

**CO1-** gain knowledge on physiology, principles, factors influencing, media and methods of propagation of Horticultural crops

**CO2-**gain skill in all propagation methods and technology for commercial scale adoption

**CO3-** becomes capable of managing commercial nursery business.

**OPC VSC 712 HI - TECH VEGETABLE PRODUCTION (2+1)**

**Course Outcomes**

**CO1:**The students will be able to demonstrate working principles of protected cultivation.

**CO2:** The students will be able to establish and manage Hi-Tech vegetable production units.