

**AGRICULTURE**  
**(PG DEGREE STANDARD)**

**SUBJECT CODE: 285**

**UNIT- I: CROP PRODUCTION PRINCIPLES AND PRACTICES**

Weather and crop production – Agro – ecological zones and geographical distribution of crop plants in Tamil Nadu Cropping systems – different types and their importance in food production - Package of practices followed for field crops and cropping systems in Tamil Nadu - Production technologies for ornamentals, vegetables, fruits, spices, Plantation crops, indoor and Medicinal plants - Role of growth regulators in vegetables and fruit production.

**UNIT - II: WATER AND WEED MANAGEMENT PRINCIPLES AND PRACTICES**

Water Management - Integrated water management - common area management - Different efficiencies in irrigation management-Irrigation management under constraints of irrigation water. Weed management - Important weeds and their distribution in Tamil Nadu - Integrated weed management practices.

**UNIT - III: CROPPING SYSTEMS AND THEIR MANAGEMENT**

Tillage and Dry land agriculture - Tillage Management under wet and dry land agriculture water harvesting techniques - Technologies for increasing agricultural production in rainfed agriculture. Agroforestry - Waste land development: Problems and Prospects in Tamilnadu - Farm forestry Agroforestry Social forestry, Natural forestry.

**UNIT - IV: SOIL MANAGEMENT FOR SUSTAINABLE AGRICULTURE**

Soil types of Tamilnadu and their important Physico-chemical properties and their management-problem soils - management-soil fertility management Integrated Nutrient management.

**UNIT – V: SEED PRODUCTION-PRINCIPLES, PRACTICES AND POLICIES**

Seed production in Vegetatively propagated crops - Seed processing – Dormancy Seed treatment - Seed pelleting - Seed Certification - Certified seed production - Seed Act, New seed policy - seed storage - seed industry - Management of Physiological disorders in crop plants for improving seed health and quality.

## **UNIT - VI: PRINCIPLES AND PRACTICES IN CROP IMPROVEMENT AND CROP BIOTECHNOLOGY**

Germplasm - crop genetic resources – Innovative breeding methods such as Mutation breeding - Marker assisted selection and breeding - Transgenic technology and applications.

## **UNIT - VII: PRINCIPLES AND PRACTICES IN PEST MANAGEMENT**

Pest - Definition – categories of pests including invasive pests - Pests control and pest management -- natural, artificial – IPM – Principles, components and integration - Ecological aspects of IPM – various IPM methods - IPM for important pests and nematodes of crops - Role of parasitoids, predators, and entomopathogens (NPV, Bt, Fungus) in IPM – Biointensive and biotechnological pest management methods - Store grain pest management.

## **UNIT - VIII: PRINCIPLES AND PRACTICES IN PLANT DISEASE MANAGEMENT**

Bacterial, fungal and viral diseases in major crops – Disease Surveillance – Assessment and forecasting integrated disease management for important plants – Integrated Disease management – Role of antagonistic organisms. Biotechnological approaches in disease Management.

## **UNIT - IX: FARMING SYTEMS AND MANAGEMENT**

Farming systems-Integrated farming systems - Farm planning and budgeting. Farm business management - farm management-principles and decision making Management of resources - land, labour, capital and machinery -Farm financial management - Agricultural marketing management - world trade concept economic liberalisation – GATT – IPR issues in agriculture.

## **UNIT - X: TRANSFER OF TECHNOLOGY**

Use of modern agricultural information systems –ICT for effective Transfer of technology – importance of tot in agricultural development - Principles of farm journalism - participatory technology development.