



# SEED TECHNOLOGY

**DURATION**  
**45 Days**

This course provides comprehensive knowledge of seed science, production, quality control, testing, storage, and marketing, preparing learners for roles in seed industries, agricultural research, certification agencies, and agribusiness entrepreneurship.

## **MODULE 1: INTRODUCTION TO SEED TECHNOLOGY**

- Meaning and scope of seed technology
- Importance of quality seed in agriculture
- Role of seed technology in crop productivity
- Types of seeds (breeder, foundation, certified, truthfully labeled)
- Seed industry overview and career opportunities

## **MODULE 2: SEED BIOLOGY AND GERMINATION**

- Structure of seed
- Seed development and maturation
- Physiological and biochemical processes in seeds
- Germination process and stages
- Factors affecting germination
- Moisture
- Temperature
- Oxygen
- Light
- Dormancy and methods to break dormancy

## MODULE 3: SEED PRODUCTION AND TECHNIQUES

- Principles of seed production
- Selection of suitable varieties
- Field preparation and isolation distance
- Sowing methods and crop management
- Roguing techniques
- Pollination and fertilization
- Harvesting at physiological maturity
- Post-harvest handling of seeds

## MODULE 4:SEED CERTIFICATION AND QUALITY

### CONTROL

- Objectives of seed certification
- Seed certification agencies and standards
- Field inspection procedures
- Seed certification stages
- Genetic purity and varietal identification
- Quality control measures in seed production
- Legal aspects of seed certification

## MODULE 5:SEED PROCESSING AND TREATMENT

- Seed processing steps:
  - Cleaning
  - Grading
  - Drying
- Seed processing equipment
- Seed treatment methods:
  - Chemical treatment
  - Biological treatment
  - Physical treatment
- Purpose and benefits of seed treatment
- Safety measures in seed processing

## MODULE 6:SEED TESTING

- Objectives of seed testing
- Seed sampling techniques
- Seed testing laboratory setup
- Tests conducted on seeds:
  - Germination test
  - Purity test
  - Moisture content test
  - Viability test
  - Vigor test
- Interpretation of seed test results

## MODULE 7:SEED STORAGE AND PACKAGING

- Principles of seed storage
- Factors affecting seed longevity
- Storage structures and methods
- Controlled storage conditions
- Packaging materials and labeling
- Seed storage pests and their management

## MODULE 8:SEED MARKETING AND ENTREPRENEURSHIP

- Seed marketing concepts
- Seed demand and supply chain
- Branding and distribution strategies
- Pricing and promotion of seeds
- Government policies and regulations
- Entrepreneurship opportunities in seed sector
- Starting and managing a seed enterprise

## PRACTICAL EXPOSURE

- Seed germination testing
- Seed purity analysis
- Seed processing demonstrations
- Seed storage evaluation
- Case studies on seed marketing

## CAREER OPPORTUNITIES

- Seed Analyst
- Seed Quality Control Officer
- Seed Production Supervisor
- Seed Testing Laboratory Technician
- Agribusiness Entrepreneur