



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