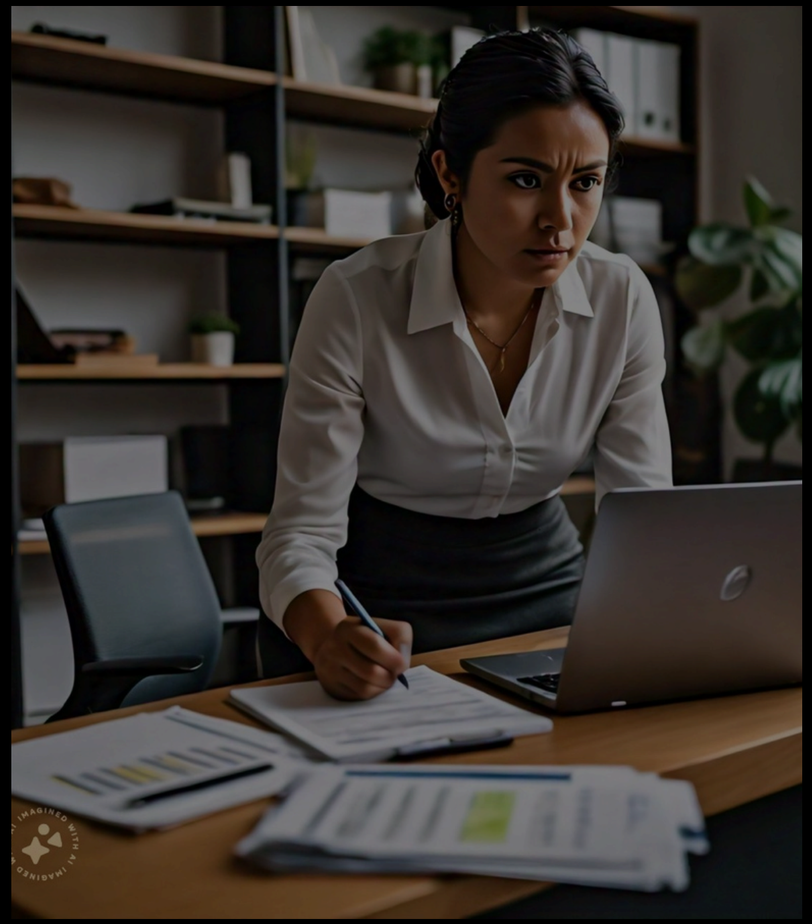
# Soil Science

TS
TECH TEACH
EDUCATIONALSOLUTIO

# OUR MISSION :



"Our mission is to empower learners worldwide through innovative technology, personalized learning experiences, and accessible educational resources. We strive to cultivate a community where every individual can achieve their full potential, regardless of their background or circumstances."

# OUR VALUES :

"To pioneer the future of education by leveraging cutting-edge technology to make learning more engaging, effective, and inclusive. We envision a world where education transcends boundaries, creating opportunities for lifelong learning and fostering a society enriched by knowledge and creativity."

# COURSE CURRICULUM:

**Week 1: Introduction to Soil Science**

- **Day 1: Overview of Soil Science**
  - **Definition and importance of soil**
  - **Historical development of soil science**
- **Day 2: Soil Formation**
  - **Weathering processes**
  - **Soil forming factors**
- **Day 3: Soil Morphology**
  - **Soil horizons**
  - **Soil profile description**
- **Day 4: Soil Classification**
  - **Soil taxonomy**
  - **International soil classification systems**
- **Day 5: Field Trip/Practical Session**
  - **Soil sampling and profile description in the field**

# COURSE CURRICULUM:

**Week 2: Soil Physics**

- **Day 1: Soil Texture and Structure**
  - **Soil particle size distribution**
  - **Soil aggregates**
- **Day 2: Soil Density and Porosity**
  - **Bulk density**
  - **Soil porosity**
- **Day 3: Soil Water**
  - **Soil moisture content**
  - **Soil water potential and retention**
- **Day 4: Soil Temperature and Aeration**
  - **Factors affecting soil temperature**
  - **Soil air composition**
- **Day 5: Laboratory Session**
  - **Determining soil texture by feel method**
  - **Measuring soil moisture content**

# COURSE CURRICULUM:

**Week 3: Soil Chemistry**

- **Day 1: Soil Colloids and Cation Exchange**
  - **Types of soil colloids**
  - **Cation exchange capacity**
- **Day 2: Soil pH and Liming**
  - **Soil acidity and alkalinity**
  - **Methods of liming**
- **Day 3: Soil Organic Matter**
  - **Composition and decomposition**
  - **Benefits of soil organic matter**
- **Day 4: Soil Nutrients and Fertility**
  - **Essential nutrients for plant growth**
  - **Nutrient cycling and management**
- **Day 5: Laboratory Session**
  - **Soil pH measurement**
  - **Cation exchange capacity determination**

# COURSE CURRICULUM:

- Week 4: Soil Biology
- Day 1: Soil Microorganisms
- Types of soil microorganisms
- Their roles in soil processes
- Day 2: Soil Fauna
- Earthworms and other soil fauna
- Their impact on soil structure and fertility
- Day 3: Soil Enzymes and Organic Matter Decomposition
- Role of enzymes in soil
- Decomposition process
- Day 4: Soil Health and Quality
- Indicators of soil health
- Practices to improve soil quality
- Day 5: Laboratory Session
- Identifying soil microorganisms
- Soil respiration measurement

# COURSE CURRICULUM:

**Week 5: Soil and Water Conservation**

- **Day 1: Soil Erosion**
  - **Types and causes of soil erosion**
  - **Erosion control measures**
- **Day 2: Soil Conservation Techniques**
  - **Contour farming, terracing, and cover crops**
- **Day 3: Water Management in Soil**
  - **Irrigation methods**
  - **Drainage systems**
- **Day 4: Sustainable Soil Management**
  - **Integrated soil fertility management**
  - **Conservation agriculture**
- **Day 5: Field Trip/Practical Session**
  - **Observing soil conservation practices in the field**

# COURSE CURRICULUM:

**Week 6: Soil Pollution and Remediation**

- **Day 1: Soil Contamination Sources**
  - **Industrial, agricultural, and urban sources**
- **Day 2: Impact of Soil Pollution**
  - **Effects on soil health and plant growth**
- **Day 3: Soil Remediation Techniques**
  - **Physical, chemical, and biological methods**
- **Day 4: Phytoremediation**
  - **Use of plants to remediate contaminated soils**
- **Day 5: Laboratory Session**
  - **Testing for soil contaminants**
  - **Remediation experiment setup**

# COURSE CURRICULUM:

**Week 7: Soil Management for Crop Production**

- **Day 1: Soil Fertility Management**
  - **Fertilizer application methods**
- **Day 2: Soil Amendments**
  - **Use of compost, biochar, and other amendments**
- **Day 3: Precision Agriculture**
  - **Role of technology in soil management**
- **Day 4: Soil Testing and Recommendations**
  - **Soil testing procedures**
  - **Interpretation of soil test results**
- **Day 5: Field Trip/Practical Session**
  - **Visiting a precision agriculture site**
  - **Soil sampling and testing**

# COURSE CURRICULUM:

**Week 8: Advanced Topics and Future Trends**

- **Day 1: Climate Change and Soil**
  - **Impact of climate change on soil properties and management**
- **Day 2: Soil and Food Security**
  - **Role of soil in ensuring food security**
- **Day 3: Innovations in Soil Science**
  - **Recent advances and future trends**
- **Day 4: Case Studies**
  - **Successful soil management practices from around the world**
- **Day 5: Final Project Presentation**
  - **Students present their projects on advanced soil science topics**

# Our Partners Company's









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# THANK YOU

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