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Remote Sensing for Earth Observation

4 day
COURSE
L I V E

from
15th July
7:00 PM-9:00 PM IST

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Curriculum

LIVE
Recording available

Day 1
Introduction to Remote Sensing and Imagery Types

*Session 1: Fundamentals of Remote Sensing
- Overview of remote sensing technology.
- Understanding the electromagnetic spectrum.
- Introduction to passive and active sensors.

*Session 2: Types of Imagery in Earth Observation
- Exploring panchromatic, multispectral, hyperspectral, and SAR imagery.
- Discussing the advantages and use-cases of each imagery type.

LEARNING OUTCOME

By the end of Day 1, participants should be able to:

1. Understand the fundamentals of remote sensing technology, including its principles and applications.
2. Identify and explain the components of the electromagnetic spectrum relevant to remote sensing.
3. Differentiate between passive and active sensors, and comprehend their respective functionalities.
4. Recognize various types of imagery used in Earth observation, such as panchromatic, multispectral, hyperspectral, and SAR imagery.
5. Evaluate the advantages and use-cases associated with each type of imagery, enabling informed decision-making regarding their selection for specific applications or projects.

Day 2
Spectral Signatures and Analysis

* Session 3: Spectral Signatures in Remote Sensing
- Defining spectral signatures and their importance.
- Analyzing spectral reflectance curves.
- Hands-on activity: Identifying materials using spectral signatures.

* Session 4: Advanced Image Processing
- Techniques for enhancing image data.
- Feature extraction and classification methods.
- Practical exercise: Classifying land cover using spectral data.

LEARNING OUTCOME

By the end of Day 2, participants will be able to:

1. Define spectral signatures and their importance in remote sensing.
2. Analyze spectral reflectance curves for material identification.
3. Apply practical techniques for identifying materials using spectral signatures.
4. Implement advanced image processing methods for data enhancement.
5. Utilize feature extraction and classification techniques for land cover analysis using spectral data.

Day 3
Applications & Case studies

* Session 5: Remote Sensing in Environmental Monitoring
- Applications in agriculture, forestry, and urban planning.
- Monitoring natural disasters and climate change.

* Session 6: Innovations and Future Trends
- Emerging technologies in remote sensing.
- Interactive discussion on future directions and applications.

LEARNING OUTCOME

By the end of Day 3, participants will:

1. Identify remote sensing applications in agriculture, forestry, urban planning, disaster monitoring, and climate change assessment.
2. Discuss emerging remote sensing technologies and future trends.
3. Engage in interactive discussions on potential future applications and directions in remote sensing.

Day 4
Remote Sensing in Planetary Exploration

* Session 7
- Principle of Planetary Remote Sensing
- History of Planetary Remote Sensing: Mars, Venus, Europa, Enceladus etc.
- Remote Sensing of Mars
- Remote Sensing of Venus
- Remote Sensing of Titan
- Application of Remote sensing in Planetary Sciences

LEARNING OUTCOME

By the end of Day 4, participants will:

- Fundamental Understanding: Grasp the basic principles, techniques, and instruments used in planetary remote sensing, including the significance of the electromagnetic spectrum in observing planetary bodies.
- Historical Perspective: Gain knowledge of the chronological development and key milestones in planetary remote sensing, with a focus on missions and discoveries related to Mars, Venus, Europa, Enceladus, and other celestial bodies.
- Planet-Specific Insights: Understand the specific challenges, methodologies, and findings related to the remote sensing of individual planets and moons, such as Mars, Venus, and Titan, including their geological, atmospheric, and climatic characteristics.
- Technological Advancements: Analyze the technological advancements in remote sensing that have enhanced our ability to study planetary bodies, including the development and application of new sensors, data acquisition, and processing techniques.
- Interdisciplinary Applications: Appreciate the interdisciplinary applications of remote sensing in planetary sciences, including its role in studying planetary atmospheres, surfaces, subsurface structures, and its contribution to planning future exploration missions and identifying potential landing sites and resources

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ENROLL NOW

Got any more questions? Feel free to contact us on
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