



Committee on Earth Observation Satellites

**WGCapD-Distance Education Course:  
Webinar Series on “Space based observations for atmospheric hazards”  
25 – 29 October 2021**

**Working Group on Capacity Building and Data Democracy,  
Committee on Earth Observation Satellites**

## WGCapD-Distance Education Course

### Space based observations for atmospheric hazards

#### 1- Overview

##### 1.1. Background

The Committee on Earth Observation Satellites ([CEOS](#)) mission is to ensure international coordination of civil space-based Earth observations programs and promote exchange of data to optimize societal benefit and inform decision making for securing a prosperous and sustainable future for humankind. CEOS supports effective societal decision-making in the areas of climate monitoring and research; carbon observations, including observations to support the effective monitoring and management of the world's forested regions; food security; disaster risk management; biodiversity; capacity building; data availability and access, and more.

The CEOS Working Group on Capacity Building & Data Democracy ([WGCapD](#)) (formed at the 25<sup>th</sup> CEOS Plenary in 2011) undertakes a variety of activities based on the four pillars of the Data Democracy Initiative, as depicted below:



Figure 1 - Data Democracy Pillars

The WGCapD builds upon this Initiative in an effort to increase the capacity of institutions in less developed countries for effective use of Earth Observation data for the benefit of society and to achieve sustainable development.

The overall objective of the WGCapD is building capacity for the effective use of Earth Observation data as well as providing wider and easier access to those data. It aims to unify CEOS efforts toward:

- Providing wider and easier access to Earth Observation data
- Increasing the sharing of software tools such as the use of open source software and open systems interface
- Increasing data dissemination capabilities and transferring relevant technologies to end users

- Providing intensive capacity building, education, and training (including awareness and outreach) for enabling end users to gather the information they need and for increasing communication on achieved results

## 1.2. Course Coordinator

NAME	INSTITUTION	ROLE
Ms. Pooja Jindal	ISRO	Coordinator

## 1.3. Language

- The entire distance education course is delivered in English.

## 1.4. Target Region

- The course is open to participants from all countries.
- All course materials will be provided in English.

## 1.5. Target Participants

- Academician, scientists, researchers and professionals working in the area of atmospheric Remote Sensing.

## 1.6. Methodology/Guidelines to Join Webinar Series on "Space based observations for atmospheric hazards "

- This webinar series is an online distance education program that allows participants to fully engage with program content, their peers, and their instructors via live lectures, through discussion forums, online chat, question/answer session and feedback mechanisms. Following guidelines and Standard Operating Procedures are issued for Webinar Series on " Space based observations for atmospheric hazards" under WGCapD-Distance Education Course

### Step 1:

Register for the course through following link - <https://www.iirs.gov.in/webinar>.

Please provide your details very carefully specially your email ID and mobile number. You will receive one registration number on successful submission of your application as web page display and email message.

### Step 2:

Activate your account by clicking on given link in your email. Once account is activated and email is verified, your application will be available for selection process to Institute/Course coordinator/Director.

### Step 3:

The course coordinator/Director will review your application and verify the submitted documents and approve or reject your application.

**Step 4:**

All the approved participants will receive an approval email with their login credentials of IIRS Eclass to watch the live lecture.

**Step 5:**

All the approved participants can login at <https://iirs.gov.in/webinar> with his/her credentials during live sessions and attend the live sessions at scheduled time.

### 1.7. System Requirements

- Recommended Browsers: most browsers will handle the Moodle pages without problem. Some individual modules may require special software or plugins. Minimum recommended browser: Google Chrome 11, Firefox 4, Safari 5, Internet Explorer 8
- Recommended Settings
  - Make sure that the browser is set to accept cookies
  - Javascript must be enabled

### 1.8. Number of Participants:

- 200 participants or more

### 1.9. Instructors

- ISRO, WGCapD CEOS members

### 1.10. Commitment by Instructors

- Preparation of 1-hour presentation using CEOS template
- Preparation of questions for quiz
- Preparation of instructional material or links of interest to be sent to participants
- Availability to participate live on the correspondent webinar session
- Answer possible questions and doubts from participants via discussion forum inside Moodle platform

### 1.11. Certificate for Instructors

- Certificates will be issued by CEOS SEO

### 1.12. Announcement

- CEOS website
- List of practitioners provided by ISRO and CEOS
- ISRO-IIRS Edusat Network Institutions
- Regional Centers for Space Science and Technology Education (affiliated with United Nations)
  - Latin America and the Caribbean (Mexico and Brazil): CRECTEALC (Regional Center for Space Science and Technology Education for Latin America and the Caribbean)
  - Asia and the Pacific (India): CSSTEAP (Centre for Space Science and Technology Education in Asia and the Pacific)

- Africa (Morocco): CRASTE-LF (African Regional Centre for Space Science and Technology Education in French Language)
- Africa (Nigeria): ARCSSTE-E (African Regional Centre for Space Science and Technology Education in English Language)
- Western Asia (Jordan): Regional Centre for Space Science and Technology Education for Western Asia
- Regional Centers
- Regional Centre for Mapping Resource for Development (RCMRD) IN Nairobi, Kenya
- Regional Centre for Training in Aerospace Surveys (RECTAS) located within the campus of Obafemi Awolowo University, Ile-Ife, Nigeria.

### 1.13. Registration

- Link: <https://www.iirs.gov.in/webinar>

### 1.14. Certificate of participation

- Designed and distributed by CEOS SEO

### 1.15. Instructional Material

- Presentation given via Power Point
- Recorded online sessions
- Data source and reading material links
- Frequently Asked Questions (FAQ)
- All materials will be made available inside Moodle

### 1.16. Copyrights

- WGCapD, CEOS

### 1.17. Feedback

- Through Feedback submitted by candidates

### 1.18. Schedule

The topic and schedule of each Webinar is as follows

- **Date: 25 October 2021 at 1830 IST**  
Satellite data application for studying extreme weather events
- **Date: 26 October 2021 at 1830 IST**  
Satellite Remote Sensing for fog retrieval and monitoring
- **Date : 27 October 2021 at 1830 IST**  
Numerical weather prediction models and its application for prediction of tropical cyclones
- **Date : 28 October 2021 at 1830 IST**  
Satellite based monitoring of gaseous air pollutants

- **Date : 29 October 2021 at 1830 IST**

Advanced techniques for studying hydrometeorological hazards over mountainous region

For course schedule and contents, please visit <https://www.iirs.gov.in/webinar>

### **1.19. Prerequisite**

- Basic Knowledge of Remote Sensing and atmospheric structure & composition

### **1.20. Webinar Objectives**

Space based observations have applications in a number of scientific fields like Imaging of earth's surface, urban and regional management, agriculture related studies, forestry, geological studies, marine and atmospheric applications, meteorological hazards etc. In this course, the focus is on utilization of satellite data for studying meteorological hazards. The common meteorological hazards are tropical cyclones, droughts, bushfires, floods, heat waves, severe dust storm, fog and hailstorms. The climate change has led to increase in the intensity and frequency of meteorological hazards in recent past. Due to this, it is much more important to understand the hazards, so that the various preventive and mitigating measures can be taken. As these hazards are large-scale phenomena, ground observations are not sufficient to properly study the events. The satellite data with advantage of large spatial and temporal coverage are highly useful for studying and monitoring the events. In this course, the participant shall be introduced to various satellite datasets available for detection and monitoring of the meteorological hazards. The basics of algorithm used for retrieved of hazard information from satellite data shall also be explained.