

CSSTEAP SHORT COURSE

On

Applications of Remote Sensing Observations for Numerical Weather Prediction

01 - 11 DECEMBER 2026

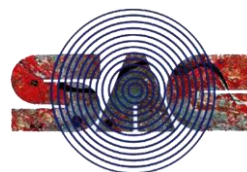


ORGANISED BY



Centre for Space Science and Technology Education
in Asia and the Pacific (CSSTEAP)
(Affiliated to the United Nations)
www.cssteapun.org

CONDUCTED BY



Space Applications Centre (SAC)
Indian Space Research Organization (ISRO)
Ahmedabad, India
www.sac.gov.in

LAST DATE FOR RECEIPT OF APPLICATION

31 August 2026

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Background

Severe weather events like tropical cyclones, violent thunderstorms, lightning strikes, heavy rainfall, heatwaves, and dust storms have a major impact on society, affecting lives, infrastructure, agriculture, transportation, and economic activities. The increasing frequency and intensity of extreme weather events is influenced by global warming and climate change. Reliable observations of the Earth's atmosphere, land, and oceans are therefore essential for understanding weather systems, providing accurate prediction and effective disaster management.

Remote sensing has revolutionized Earth observations by providing continuous, large-scale, and real-time information from satellites, weather radars, lidar systems, and other observation platforms. These observations enable the monitoring of clouds, precipitation, aerosols, atmospheric moisture, temperature, winds, sea surface conditions, and land-surface characteristics over regions with sparse ground-based measurements. Recent advances in remote sensing technology, sensor capabilities, data products, and geospatial analysis techniques have greatly enhanced our ability to observe and analyze weather and climate processes across multiple spatial and temporal scales. These observations are now widely used for weather monitoring, extreme event detection, precipitation estimation, aerosol and air quality assessment, climate studies, hydrological applications, agricultural monitoring, and disaster risk reduction.

Growing availability and quality of remote sensing observations, coupled with advances in computational resources and numerical weather prediction models, have significantly enhanced our ability to monitor and understand atmospheric processes. Despite these advancements, the potential of remote sensing observations, particularly over the Asia-Pacific region, remains underutilized.

Therefore, there is a growing need for meteorologists, researchers, and operational forecasters to develop expertise in the interpretation, analysis, and application of these observations. This course aims to provide participants with a comprehensive understanding of remote sensing principles, observational platforms, data products, and their applications in weather and environmental sciences, with particular emphasis on monitoring, analyzing, and predicting high-impact weather events, thereby supporting improved weather prediction and decision-making.

About CSSTEAP and SAC

CSSTEAP was established in India in November 1995 with its headquarters at Dehradun and over the past 30 years, the center has emerged as a Centre of Excellence in capacity building in the field of space science and technology applications. For more information, visit www.cssteapun.org.

The Space Applications Centre (SAC), located in Ahmedabad, India, is one of the major centres of the Indian Space Research Organization (ISRO). This centre is engaged in the research and development of applications of Space Technology in the field of Communications, Remote Sensing, Meteorology, Planetary Science and Satellite Navigation.

It has major contributions in the recent Chandrayaan-3 mission, that demonstrated soft landing on moon. The other achievements of the centre include development of communication, navigation and meteorological payloads and designing various applications. SAC provides its infrastructure to conduct training courses to the students of CSSTEAP and will be the host centre for this course. For more information on SAC, visit www.sac.gov.in.

Objective of the Course

- The overall objective of the two-week training course is to generate awareness among users/researchers, professionals, decision-makers, and academicians about the fundamentals of remote sensing observations and numerical weather prediction.
- Familiarization with various remote sensing platforms, including satellites, weather radars, and other observational systems, along with the interpretation and analysis of their data products.
- To improve understanding of the role of remote sensing observations in monitoring atmospheric, oceanic, and land-surface processes.
- To develop practical skills in accessing, processing, visualizing, and utilizing remote sensing datasets for the analysis and prediction of high-impact weather events.

Faculty and Medium of Instruction

The core faculty is drawn from SAC and different premier institutes of India. Some faculty from reputed institute outside India might be brought in, depending upon their availability. The faculties are having rich experience in the field. The medium of instruction shall be in English. Participants having competence in spoken and written English language will be given preference.

Course Content

The structure of the course is balanced between technical presentations and hands-on sessions.

The following course content will be covered:

- Principles of Satellite Meteorology
- Satellite Sensors and Data Products for Weather and Climate Applications

- Retrieval and Analysis of Atmospheric Parameters from Remote Sensing Observations
- Numerical Weather Prediction (NWP) and Data Assimilation
- Applications of Remote Sensing Observations for Weather Monitoring and Prediction of Extreme Weather Events

*** Note: Participants are expected to be familiar with python and Fortran programming**

Number of seats: 25

(Nominations from Governing Board Members / Respective Embassies/ Organizations / Academic Institutions is compulsory)

Course Fee and Accommodation

A course fee of US \$300 (equivalent to INR for Indian participants) is applicable which includes course materials. Accommodation for the participants will be arranged in the International hostel at SAC Bopal, Ahmedabad in twin sharing. During the stay in hostel, the participants will be charged INR 120 per day. However, for government sponsored candidates from Asia Pacific region, the Director CSSTEAP may waive off the course fee. The candidates are expected to make their own arrangements for all expenses.

Fellowship to Participants

Preference in admission will be given to the candidates who are financially supported by their organizations. A few fellowships covering to and fro international air travel, domestic air travel in India and living expenses (15,500/- INR for two weeks) in India are available from the Government of India. However, first preference will be given to the fully sponsored / self - sponsored candidates

than to the candidates whose sponsoring organization will be bearing international to and fro travel expenses.

Eligibility and Selection Procedure

The course is aimed at decision-makers, weather forecasters, managers, researchers, and professionals in the field of meteorology and weather forecasting.

- A limited number of seats are available for this course, which will be filled with participants from different Asia-Pacific countries.
- Government employees and professionals working in the field of weather forecasting would be given priority.
- Candidates who have obtained a degree in Meteorology will be given preference.
- 5 years of experience in the relevant field (Desirable).
- Candidate should have proficiency in English language as the course will be conducted in English.
- The selection of candidates will be carried out by a designated selection committee.

How to Apply

- Eligible candidates can apply online through the CSSTEAP website.

<https://admissions.cssteapun.org>

- Applicants are requested to send the application forwarded by the Head of their respective Institute/ Organization for consideration.
- Incomplete applications will not be considered for selection

Announcement of Course:

10 July 2026

Last date for receipt of application:

31 August 2026

Contact Details

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