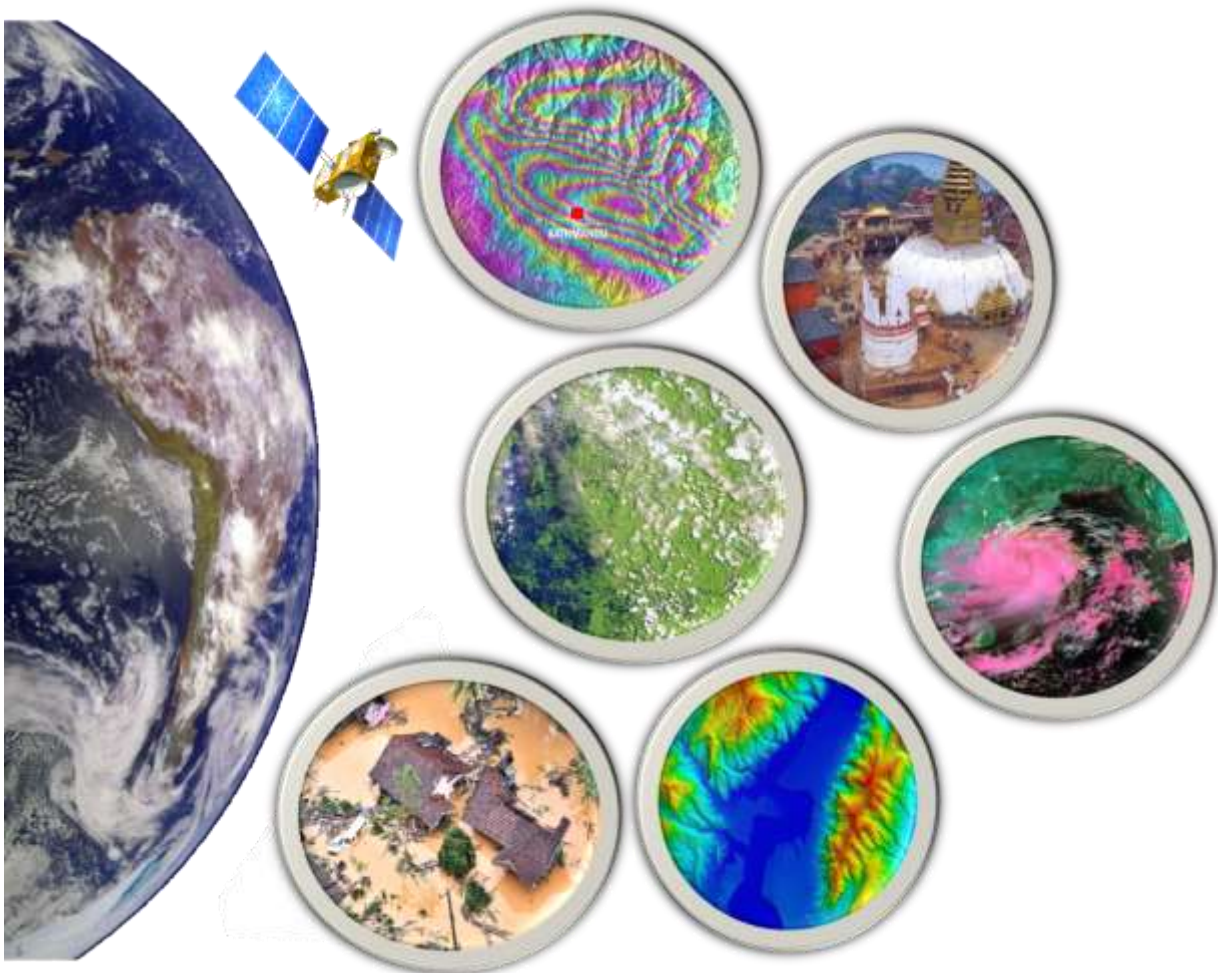


**Webinar on Application of Remote Sensing in Hydro meteorological  
and Geological disasters  
17<sup>th</sup> – 20<sup>th</sup> September 2019**



**Centre for Space Science & Technology Education in Asia and the Pacific  
(CSSTEAP)**

**Supported by**

**Indian Institute of Remote Sensing  
(Indian Space Research Organization)  
Dehradun- 248001, INDIA**

# CSSTEAP

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## 1- Overview

### 1.1. Background

Under the auspices of the United Nations, through its Office for Outer Space Affairs (UN-OOSA), six Regional Centres for Space Science and Technology Education have been established in the regions that correspond to the United Nations Economic Commissions for Asia and the Pacific (India and China), Africa (Morocco, Nigeria) and Latin America and the Caribbean (with offices in Brazil and Mexico) and Jordan for the West Asia region. The Centres are affiliated to the United Nations through UN-OOSA.

Centre for Space Science & Technology Education in Asia and the Pacific (CSSTEAP) is the first Centre and was established on November 1, 1995. The Centre offers post-graduate (PG) level training in five areas of specialization namely: 1) Remote Sensing and Geographic Information Systems (RS & GIS), 2) Satellite Communication (SATCOM), 3) Satellite Meteorology and Global Climate (SATMET), 4) Space and Atmospheric Science (SAS), and 5) Global Navigation Satellite Systems (GNSS). The course curricula developed by the Centre and endorsed by the United Nations are adapted for the educational programmes. The educational programmes of the Centre are oriented towards the dissemination of knowledge in relevant aspects of space science and technology.

Till date the Centre has conducted 58 PG courses Diploma courses, 23 in Remote Sensing & Geographic Information System (RS & GIS), 11 in Satellite Communications (SATCOM), 11 in Satellite Meteorology & Global Climate (SATMET), 11 in Space & Atmospheric Science (SAS) and 02 in Global Navigation Satellite Systems. In addition to PG Diploma course, 57 short courses have also been successfully conducted by the centre. These programmes have benefitted more than 2000 participants from 55 countries. Till date about 170 PG students from 16 different countries have been awarded M.Tech. degree.

Asia-Pacific region faces major disaster problems in the form of earthquakes and tsunamis, tropical cyclones and typhoons, landslides, flash floods, avalanches and Glacial Lake Outburst Floods (GLOFs). Between 2014 and 2017, nations in this region were affected by 55 earthquakes, 217 storms and cyclones, and 236 cases of severe flooding, impacting 650 million people and causing the deaths of 33,000 people ([www.weforum.org/](http://www.weforum.org/)). Due to the large spatial extent of disasters affecting several people across countries, geospatial technology today finds a wider acceptance and an important tool for decision making process. As disaster management work usually involves a large number of different agencies working in different areas, the need for utilizing geo-information technologies in multiple disciplines to make critical decisions is very important. Space technology can be particularly useful in the risk assessment, monitoring, response, mitigation and preparedness phases of disaster management, including early warning. The use of Earth observations, space-based applications, geographic information systems and remote sensing can be very vital in implementing the Sendai Framework for Disaster Risk Reduction.

## 1.2. Learning Objectives

**By the end of this webinar series, participants will :**

- Understand about global disaster scenario, the priorities of Sendai framework for disaster risk reduction, sustainable development goals and application of earth observation data for addressing natural disasters, role of international charter and Sentinel Asia and its functioning for obtaining space based disaster information.
- Understand basic concepts of hydrology, hydrological modelling and application of EO data for flood hazard mapping and damage assessment studies.
- Learn methodologies for earthquake and landslide monitoring using geo-spatial techniques, concepts of SAR interferometry and its application for damage assessment studies.

## 1.3. Themes of Webinar

The themes of the four webinars are listed below

1. **Space Applications in DRR and International cooperation (17<sup>th</sup> September 2019):**  
**Duration 1 Hour Lecture + 15 minutes Discussion**  
**Speaker: Dr. Shirish Ravan, Sr. Programme Officer, UNOOSA**
2. **Geo-spatial applications in Hydro-meteorological Disaster (18<sup>th</sup> September 2019):**  
**Duration 1 Hour Lecture + 15 minutes Discussion**  
**Speaker: Dr. S.P. Aggarwal, Group Head, Water Resources, IIRS**
3. **Geo-spatial applications in Geological Disaster (19<sup>th</sup> September 2019) :** **Duration 1 Hour Lecture + 15 minutes Discussion**  
**Speaker: Dr. P. Champati Ray, Group Head, Geosciences & Disaster Management Studies, IIRS**
4. **Demonstration on Rapid damage assessment during disasters (20<sup>th</sup> September 2019) :** **1 Hour Lecture + 15 minutes Discussion**  
**Mr. CM Bhatt and Ms. Poonam Tiwari**

## 1.4. Course Coordinator

NAME	INSTITUTION	ROLE
Mr. C M Bhatt	ISRO	Coordinator

## 1.5. Language

- The entire distance education course is delivered in English.

## 1.6. Target Region

- Course is open to Alumni of CSSTEAP and participants from all countries.

## 1.7. Target Participants

- Academician, Scientists, Researchers and Professionals including CSSTEAP Alumni's interested in application of Remote Sensing in Hydro meteorological and Geological disaster.

## 1.8. Methodolgy

- This course 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.
- The Learning Platform Moodle (acronym for modular object-oriented dynamic learning environment) will be used for the course administration, documentation, tracking, reporting and delivery system. It will be hosted at the Indian Space Research Organization – ISRO LMS Platform
- GoToWebinar will be used for synchronous communication among teachers and students and live sessions.

## 1.9. 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

## 1.10. Number of Participants:

- 100-200 participants

## 1.11. Instructors

- ISRO, UNOOSA & other space agencies

## 1.12. 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

## 1.13. Announcement

- CSSTEAP Alumni Database
- CEOS website
- List of practitioners provided by ISRO and CEOS
- 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.

#### **1.14. Registration**

- ISRO LMS ( <https://eclass.iirs.gov.in>)

#### **1.15. Certificate of participation**

- Designed and distributed by CSSTEAP

#### **1.16. 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

#### **1.17. Copyrights**

- CSSTEAP

#### **1.18. Feedback**

- Through Feedback submitted by candidates

#### **1.19. Schedule**

- 17<sup>th</sup> September – 20<sup>th</sup> September 2019 at 0600 UTC & 1300 UTC

#### **1.20. Prerequisite**

- Elementary knowledge about Remote Sensing and Digital Image Processing