

Announcement Brochure

International Training Course on Small Satellite Missions

October 29th to November 9th, 2012



Organized by



**Centre for Space Science and Technology
Education in Asia and the Pacific (CSSTEAP)**
(Affiliated to the United Nations)
IIRS Campus, Dehradun, India
www.cssteap.org

Jointly conducted by



Indian Institute of Remote Sensing (IIRS)
ISRO, Department of Space, Government of India, Dehradun, India

ISRO Satellite Centre (ISAC)
ISRO, Department of Space, Government of India, Bengaluru, India

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Governing Board members with other dignitaries & staff during 16th meeting of the Board.

Background

“Man must rise above the Earth -- to the top of the atmosphere and beyond -- for only thus will he fully understand the world in which he lives.” Socrates (450 BC). With the launch of Sputnik, on 4th October 1957, mankind has not looked back in conquering space and going beyond. From these space ventures, it has been understood that, the earth itself is of prime importance to mankind. Hence the interest to establish basic space technology development for sustainable societal benefits has caught up in many developing countries, apart from pioneers like USSR and USA.

Space borne systems have found uses in many fields due to cost effectiveness as compared to terrestrial systems, distance independent communication links, large area coverage irrespective of terrain conditions, ease of configuring and expanding networks, space based reference of high accuracy, quickest reach, independent of distance, etc.

Traditional space-borne systems are very expensive as they require large infrastructure, facilities, access to high-end technology, expertise, skilled man-power, expensive radiation hardened components etc. for building them. Apart from these, we also require dedicated launchers.

With the advancement in allied areas, especially towards miniaturization of components, material technology has made small satellites-based space mission affordable with limited resources. As a result of this small satellites are being developed by universities and small industries with little infrastructure at a low cost. These satellites ride as 'piggy-backs' of conventional large satellite missions, resulting in inexpensive launching cost and increased launching opportunities.

Small satellites have also become platforms for many countries to be their 'stepping stone' in to

space technology and its applications developed at universities. These university-built small satellites, apart from giving them a proud sense of achievement, are now providing services on a commercial basis. Small satellites are also being exploited for scientific experiments and technology demonstrations. These also provide opportunities for international space cooperation by contributing the use of space technology and its applications for sustainable development. With emerging advancement in small satellite technologies not only major space agencies like NASA, ESA, JAXA, ISRO, etc. but also the emerging space agency of Algeria, Malaysia, Vietnam etc. can afford to have their own space missions under limited resources for societal benefits.

Over the last few years, with ISRO's encouragement and guidance, many Indian universities have made their own satellites which were launched by ISRO. To share the expertise in the area of small satellite missions, CSSTEAP is organizing a two week course for Asia Pacific countries.

Objectives

- To create an awareness about small satellites, space technology, and its opportunities
- To disseminate knowledge required for small satellites technology
- To sensitize professionals in developing, launching and utilizing the benefits of small satellites and
- Exposure to infrastructure required for small satellite development

Who Should Attend

The course is aimed for decision makers, senior space technologists, managers, researchers and professionals.

Others who will find the course very useful include academic institutions, space agencies, and institutions responsible for regional capacity building in the use of space-based technology.

Course Duration and Location

The course will be conducted by Centre for Space Science and Technology Education in Asia and the Pacific (CSSTEAP) during 29th October 2012 to 9th November 2012 in two parts. First part will be held at Indian Institute of Remote Sensing (IIRS), Dehradun followed by facility visits at ISRO Satellite Centre (ISAC), Bengaluru.

Language of Course

The working language of the course is English. Proficiency in written and spoken English is most essential. Candidates with adequate working knowledge in English only need to apply.

Course Structure

The structure of the course is a balance between technical presentations and facility visits. It will be covered in two modules of two weeks as mentioned below:

Week 1: (6 Days)

The following course contents will be covered in 20 technical presentation sessions.

- Benefits of space technology
- Remote sensing applications
- Technology involved in making a small satellite
- Applications of small satellites and future trends
- Management of small satellites

Week 2: (4 Days)

Visit to various infrastructure facilities

Course implementation

The course will be organized by the CSSTEAP (Affiliated to the United Nations), located in Dehradun, India. First week will be held at IIRS Dehradun and the second week will be held at ISRO centres at Bengaluru.

Course Fee and Accommodation

A course fee of ₹15,000 (equivalent to US\$ 300) is charged which includes course materials and local tours. Accommodation for the participants will be arranged in hostel at IIRS, Dehradun and hotel at Bengaluru. In addition the participants will have to pay ₹ 50 per day at Dehradun, and ₹ 2000 per day at Bengaluru towards accommodation charges.

Indian food is available in the hostel mess/canteen run by officer trainees on payment basis.



CSSTEAP hostel at IIRS

Fellowships to participants from Countries other than India

The training course is likely to be approved by the Ministry of External Affairs, Government of India under its Technical Cooperation Scheme (TCS) of Colombo Plan Fellowship for the foreign nationals from Afghanistan, Bangladesh, Bhutan, Fiji, Indonesia, Iran, Republic of Korea, Lao PDR, Malaysia, Maldives, Myanmar, Nepal, Papua New Guinea, Philippines, Sri Lanka, Thailand and Vietnam. The fellowship covers to and fro international air travel in economy class and other training related expenses. The applicants from the above countries are advised to apply for TCS of Colombo Plan fellowship for financial assistance. Candidates seeking financial assistance under the TCS of Colombo Plan fellowship are advised to

contact the Embassy/High Commission of India in their home country to obtain the application form for fellowship and submit it to them. Simultaneously, they are required to send their personal details/bio-data to the Course Coordinator, IIRS, Dehradun on the prescribed application form appended to this announcement brochure. Candidates are expected to make their own arrangements for all expenses. Preference will be given to the candidates who are financially supported by their organizations. However, for a few candidates, CSSTEAP will offer financial support (₹ 8,000 per two weeks and to and fro travel and accommodation in Bengaluru) through the contributions from Government of India.

Health and Insurance

Insurance and medical expenses as necessary will have to be borne by candidates or their organization before taking up journey to India.

Medical, life and disability insurance should be undertaken before leaving for India by the participants themselves or on their behalf by their organization for covering entire health and disability risks. No medical expenses will be borne by CSSTEAP.



CSSTEAP HQ

About CSSTEAP (Affiliated to the United Nations)

The Centre for Space Science and Technology Education in Asia and the Pacific (CSSTEAP), was established in November 1995 in response to the UN General Assembly Resolution 45/72 of the 11th December 1990 endorsing the recommendations of UNISPACE-82, the United Nations Office for Outer Space Affairs (UN OOSA).

The centre is hosted by the Government of India with Department of Space (DOS) as the nodal agency and is administered by an International Governing Board. The goal of the centre is to develop through in-depth education, indigenous capability in the Asia-Pacific countries for research and applications in the core disciplines of Remote Sensing & Geographic Information System, Satellite Communications, Satellite Meteorology & Global Climate, and Space & Atmospheric Science. The educational programs, with course curricula developed by the United Nations, are recognized by Andhra University, India for award of M.Tech. degree. About 1130 professionals from 52 countries within and outside the Asia-Pacific region have graduated so far from the centre.

URL: <http://www.cssteap.org>

About Indian Space Research Organisation

Government of India had setup Space Commission and Department of Space (DOS) in June 1972. Indian Space Research Organisation (ISRO) under DOS executes space program through its establishments located at different places in India. The prime objective of ISRO is to develop space technology and its applications for the nation. ISRO has established two major space systems, INSAT for communication, television broadcasting and metrological services and Indian Remote sensing Satellites (IRS) systems for resource monitoring and management. ISRO has developed two launch vehicles PSLV and GSLV to place IRS and INSAT series of satellites in required orbit.

URL: <http://www.isro.gov.in>

About Host Institutes

Indian Institute of Remote Sensing

The Indian Institute of Remote Sensing (IIRS) is a unit of Indian Space Research Organisation, Department of Space, Government of India which was established in 1966. It is the premier training and education institute dealing with Remote Sensing, GeoInformation Science & GNSS Technology and their applications in the region.



IIRS Dehradun

Institute has gained rich experience over the last 46 years in capacity building and implemented many innovative programs tuned to the needs of various target groups. The institute also offers satellite based distance learning programs for the benefit of university students.

ISRO Satellite Centre

The ISRO Satellite Centre (ISAC) in Bengaluru is one of the centres of Indian Space Research Organisation, Department of Space and is engaged in developing satellite technology and implementation of satellite systems for scientific, technological and application missions. ISAC is functionally organized into five major areas: Mechanical Systems Area (MSA) including structures, thermal systems and spacecraft mechanisms; Digital and Communications Area (DCA) including digital systems, computer and information, facilities, communication systems; Integration and Power Area (IPA) comprising spacecraft checkout, systems integration and power systems; Controls and Mission Area (CMA) consisting of control system, mission development; Reliability and Components Area (RCA). Program Planning and Evaluation Group (PPEG) provides relevant support to the centre. Project management teams co-ordinate the implementation of INSAT and IRS projects. Space astronomy and instrumentation division is engaged in space science activities. ISRO Satellite Integration and Test Establishment (SITE) including a Comprehensive Assembly, Test and Thermo-vacuum Chamber (CATVAC) provides necessary support for qualification of sub-systems and systems to meet the requirements of space environment.



ISAC Bengaluru



CENTRE FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION
IN ASIA AND THE PACIFIC (CSSTEAP)

(Affiliated to the United Nations)

APPLICATION FORM FOR
**INTERNATIONAL TRAINING COURSE ON
SMALL SATELLITE MISSIONS**

29 October - 9 November, 2012

Venue: Indian Institute of Remote Sensing, Dehradun, India

&

ISRO Satellite Centre, Bengaluru, India

Last date for receipt of applications: August 15, 2012

SSM

(For office use only)

Application No.: _____

Date received: _____



(PLEASE USE CAPITAL LETTERS)

1. Name: Mr./Ms./Dr.....
First Middle Last

2. Date of Birth (dd/mm/yyyy)..... 3. Place of Birth:

4. Sex (Male/Female)..... 5. Nationality:

6. Contact Information : Complete Mailing Address (Please mention valid until what date) :
.....
.....
.....

Telephone : (Please give complete phone numbers with all codes)

Home: Office:

Fax: E-mail:

7. Permanent Contact or home Address (If different from above)
.....
.....
.....

Telephone: (Please give complete numbers with all codes)

Home:Office:

Fax:E-mail (alternate, preferably Gmail or yahoo):.....

Important : a) Interested persons may detach last 4 pages from this brochure and use them as **Application Form**.
b) It is essential that full passport details are mentioned in the Application Form.
c) Application Forms without passport details may not be considered.
d) Providing alternate email-id would ensure timely communication with applicants.

8. Academic Qualifications*

Degree (Bachelor/Master) Diploma	Duration of Course	University/ Institution	Year of Passing	Grade Class	Major Subjects

*Enclose copies of educational certificate (Degree/Diploma/Certificates/marks/grades obtained, etc. and transcription in English)

Major Subject in last examination:Area of Specialization:

Medium of Instruction/Language:TOEFL Score (Proficiency in English):

Reading Fair, Good, Very Good

Writing Fair, Good, Very Good (Please tick the option)

Speaking Fair, Good, Very Good

Note: Enclose certified copies of marks/grade of degree, diploma, TOEFL (validity period), etc. Certificates and their certified translations in English.

9. Details of experience of last five years.

(a) Present Position:Present Responsibilities:

.....

Organization and complete Address:

.....

Date of Joining the Organization (dd/mm/yyyy):

*Attach additional sheets giving details of your technical activity during last one year 2011-12.

(b) Experience during past 15 years:

Name of Organization (s)	Post (s) held	Nature of work done	Duration

10. (a) Activity and projects in which your organization is currently engaged (mandatory)

.....

(b) Main technical/scientific facilities available in your organizations* (including approximate number and type of computers, type of software available, etc.

.....

11. Have you done any other course from CSSTEAP (If yes, please give details):

.....

12. Passport particulars (Passport details are necessary to consider admission)

Passport Number	Place of Issue	Date of Issue	Passport Valid up to	Issuing Authority

13. Physical Fitness

- a) Are you suffering from any recurring/chronic/serious disease which may affect your study program in India ?
- b) If yes, please specify nature of illness (Candidates are advised to attach medical fitness certificate from a hospital or qualified doctor).

14. How do you propose to meet the international travel and stay expenses in India ?

.....

15. Have you applied for TCS fellowship ? If so, enclose a copy of the duly filled application form submitted to Embassy/High Commission of India in your country. (Applicable only for those candidates who are from the countries for which TCS Fellowship is available, as specified under "Financial assistance to participants" in the brochure.

.....

16. How do you foresee the training course on Small Satellite Mission will help you?

.....

17. Declaration by the candidate

I have read the announcement brochure and will abide by the rules and regulations of the centre. I have made/am making/have not made travel arrangements for attending the course and local expenses for the period of stay in India.

Date:

Place:

Signature of Candidate

18. Sponsoring/nominating agency certificate

Mr./Ms./Dr..... is sponsored by.....

.....

to attend the training course on Small Satellite Mission. We envisage to utilize his/her experience in specific tasks of our organization/agency.

- i. He/She will not be provided international travel support.
- ii. He/She will be/will not be provided financial assistance for the period of stay in India.
- iii. He/She possesses adequate knowledge of English Language required for the course.

Date:

Name:

Place:

Signature:

Designation:

Phone:

Fax:

E-mail:

(Official seal of the sponsoring or nominating authority)

Note : Application without official seal of sponsoring or nominating authority and their details will not be considered.

19. Forwarding note by the respective country's Embassy in India

This is to forward the application of Mr./Ms./Dr.....of.....
(Specify the Country name here) for training course on Small Satellite Mission.

Date:

Signature:

Place:

Name:

Designation:

IMPORTANT NOTE:

1. Interested candidate may detach the Application Form (consisting of four pages) from this Announcement Brochure and use.
2. It is essential that full passport details are provided in the Application Form. Application Forms without passport details may not be considered.
3. Applicant should attach copies of certificates of:
 - a. Medical fitness to attend the course (in case if any medical information requiring attention is hidden and if found during the course, the centre will be compelled to send the candidate back home).
 - b. Highest degree obtained (Degree certificate and mark sheet/grade card).
 - c. Proficiency in English
 - d. All Degree Certificates, if not in English, may please be translated in English and attested by the Head of the organization. Attested transcript in English can also be submitted.
4. Mail the completed Application Form through your Embassy/High Commission in New Delhi, India and also send an advance copy of the Application Form directly to **Course Coordinator, (Small Satellite Missions), Indian Institute of Remote Sensing, ISRO, Department of Space, Government of India, 4, Kalidas Road, Dehradun 248001, India**
5. Those who have applied for **TCS of Colombo Plan Fellowship** of the Government of India should attach a copy of the duly completed fellowship form (submitted to the Embassy/High Commission of India in their country) along with the Application Form.

Mr. C. A. Prabhakar
Course Director

Ms. Shefali Agrawal
Course Coordinator

About Dehradun

Dehradun, the capital of newly formed Uttarakhand state, is located in one of the outer valleys of Himalaya in North India. The valley is surrounded by dense forest and provides pristine environment for academic pursuits. Dehradun is well connected by air, train and road from Delhi, the national capital. IIRS campus is about 6 km from railway station and about 25 km from airport. Many important national organizations/institutions are located here. Mussoorie, the famous hill station, is about 30 km from Dehradun. Haridwar and Rishikesh, the two famous pilgrim centers, are about 55 km and 40 km, respectively from Dehradun. Weather of Dehradun during October- November is moderately cold.

About Bengaluru

Bengaluru is the capital and the largest city of the Indian state of Karnataka. It is also called "Garden City" for its beautiful gardens, flowers and trees which flourish in each and every street. It is situated in the Deccan Plateau, with an average elevation of 920 m above sea level.

Bengaluru is the scientific hub of India and it has the world renowned and the oldest Research University,

Mailing address

Course Coordinator (Small Satellite Missions), Indian Institute of Remote Sensing, ISRO, Department of Space, Government of India, 4, Kalidas Road, Dehradun 248001, India
Tel: +91-135-2524110 /2744583, Fax: +91-135-2741987/2748041/2740785
Email: cssteap@iirs.gov.in, URL: <http://www.iirs.gov.in>

Indian Institute of Science. The other research institutes are the Indian Institute of Astrophysics, the Raman Research Institute, the Jawaharlal Nehru Centre for Advanced Scientific Research, the National Center for Biological Science and the Indian Statistical Institute.

There are numerous gardens and historical sites within the city. The Vidhan Soudha or the State Secretariat is the prime attraction. The Government Museum of Bengaluru and the Visvesvaraya Technological and Industrial Museum, Lal Bagh Botanical Garden are worth visiting. Weather of Bengaluru during October - November is pleasant.

Important Dates

- Last date for receipt of application: August 15, 2012.
- Information of selection: September 1st Week 2012.
- Commencement of the course: October 29, 2012.
- Completion of the course: November 9, 2012.

Course Director

IRS & SSS Programme, ISRO Satellite Centre,
ISRO, Department of Space, Government of India,
Vimanapura Post, Bengaluru-560017, India.
Tel : +91-80-25082637, Fax: +91-80-25082444



CSSTEAP participants during local site seeing.



**CSSTEAP, Headquarters
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