3ʳᵈ INTERNATIONAL TRAINING COURSE

ON

SMALL SATELLITE MISSIONS

November 10 to November 21, 2014

Jointly conducted by
ISRO Satellite Centre (ISAC)
ISRO, Department of Space,
Government of India, Bengaluru, India
Indian Institute of Remote Sensing (IIRS)
ISRO, Department of Space,
Government of India, Dehradun, India

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

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Governing Board meeting in ISRO Hqrs. Bengaluru

Introduction

After the launch of the first spacecraft 'Sputnik' in 1957, several satellites were launched by different countries for scientific studies, earth observation, communication, atmospheric studies, astronomical measurements, military applications, etc. These are preferred by the users because of their less cost and other advantages as compared with the conventional methods for similar applications. In this process the satellites have become heavier, larger and more complicated to accommodate more capabilities, this have become expensive. The increased cost complexity, and timescale lengthening of satellite projects restricted the access to space to only a few countries or agencies in the world. The revolution in electronic miniaturization, invention of smart materials, improvement in computation capability of microprocessors, storage capability, imaging technology, control intelligence & automation and associated performance capability have opened the opportunities to design and fabricate 'smaller, faster and cheaper' sophisticated 'small satellites' with reduced mass and volume. The reduction in mass and volume reduces the launch cost also. The small satellite constellation concept with features like less turnaround time, affordability and the potential to serve high end applications have attracted industries and universities towards the small satellite fabrication and launch. These satellites are launched as 'piggy-backs' of large satellites, resulting in inexpensive launch cost with more launch opportunities.

In small satellites, payloads with a mass of just a few kilograms are able to perform measurements that were done with tens of kilograms a few years ago. The fast and cheap development of micro-satellites also make them a suitable platform for technology evaluation, and provide opportunities to test new systems in space with low cost, less risk and short time. Countries entering into the satellite fabrication and launch activities use the small satellites as a stepping stone. In recent years more countries like India, Algeria, Malaysia, Vietnam, etc. have launched their own small satellites. Over the last few years, with ISRO's support and guidance, some of the Indian Universities have made their own satellites which were launched by ISRO. To share the expertise in the area of small satellite missions of 100 kg class or below, CSSTEAP is organizing a two-week course for professionals, technologists, researchers, etc. of Asia Pacific countries.

Objectives

- To create an awareness about small satellites, space technology and opportunities
- To disseminate knowledge required for small satellites technology
- To sensitize professionals in developing, launching and utilizing the benefits of small satellites
- 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 in the fields of space technology.

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 organised by Centre for Space Science and Technology Education in Asia and the Pacific (CSSTEAP) during 10th November 2014 to 21st November 2014 at Indian Institute of Remote Sensing (IIRS), ISRO Dehradun and conducted, jointly by ISRO Satellite Centre (ISAC) and Indian Institute of Remote Sensing.

Language of Course

The 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, animation and assignments.

The following course content will be covered :
- Benefits of space technology
- Remote sensing applications
- Technology involved in makings small satellites.
- Applications of small satellites and future trends
- Management of small satellites

Course implementation

The course will be conducted at IIRS, located in Dehradun, India through lectures, assignments, quiz, domos, etc.

Course Fee and Accommodation

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

Indian food will be available in the hostel mess/ canteen managed by officer trainees on payment basis.

CSSTEAP hostel at IIRS

Fellowships to Participants

The candidates are required to send their personal details/bio-data to the Course Coordinator, IIRS, Dehradun in the prescribed Application Form, appended to this Announcement Brochure. The candidates are expected to make their own arrangements for all expenses. 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 travel in India and living expenses (₹ 8,000 for two weeks) in India are available from Government of India. However, first preference will be given to the fully self sponsored candidates and then to the candidates whose sponsoring organization will be bearing international to and fro travel.

Health and Insurance

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 Dehradun

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 guided by an International Governing Board from 16 countries and observers from two countries. The goal of the Centre is to do capacity Building 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, Visakhapatnam India for award of M.Tech degree. About 1311 professionals from 52 countries within and outside the Asia-Pacific region have graduated so far from the centre. For further details you may please visit 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 societal benefits. ISRO has established two major space systems, INSAT for communication, television broadcasting and metrological services and Indian Remote Sensing Satellites (IRS) systems for Earth observation resource monitoring and management. ISRO has developed two launch vehicles PSLV (Polar Satellite Launch Vehicle) and GSLV (Geosynchronous Satellite Launch Vehicle) to place IRS and INSAT series of satellites in required orbit. For further details please visit 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.

Institute has gained rich experience over the last 48 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.

IIRS

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 (ISITE) including a comprehensive Assembly, Test and Thermovacuum Chamber (CATVAC) provides necessary support for qualification of sub-systems and systems to meet the requirements of space environment.

ISAC Bengaluru

CSSTEAP

CENTRE FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION IN ASIA AND THE PACIFIC (CSSTEAP)
(AFFILIATED TO THE UNITED NATIONS)

APPLICATION FORM FOR

3rd INTERNATIONAL TRAINING COURSE ON SMALL SATELLITE MISSIONS

(10th November – 21st November, 2014)
Venue: Indian Institute of Remote Sensing, Dehradun, India
Last date for receipt of application: August 31, 2014

Affix recent passport size photograph

SSM
(For office use only)

Application No.: ....

Date received: ....

> **Important:**
> All the correspondence from CSSTEAP (issue of admission letter, e-tickets for travel, enquiries, etc.) with the applicants will be on internet and sometimes on phones, therefore, kindly ensure that email-id, phone, fax etc. are correctly and clearly mentioned.

(Please type or use CAPITAL LETTERS)

1. Name (Dr/Mr/Mrs/Miss): ……………………………………………………………….…....................................
(As mentioned in the Passport)

2. Father's Name: …………………………………….......…   3. Name of mother/husband/wife:………………....................

4. Date of Birth (DD/MM/YYYY): …………………….........   5. Place of Birth: ....

6. Gender (Male/Female): ………………………………........   7. Nationality: …………………………….………………...................

8. Contact Information: Present official Address (Valid until what date):

   .…………………………………………….........…………………………………………………………………………….......

   .…………………………….....................…………………………………………………………………………………….......

   .…………………………………….....................…………………………………………………………………….………….......

   Contact number: (Please give complete Phone No. with <u>country, city</u> codes)

   Office (Tel): ....   Office (Fax): ……….…………………………………….....................

   Mobile: ....   E-mail: …………….………………………………………...............

9. Permanent home Address (in your country):

   .…………………………………………….........…………………………………………………………………………….......

   .…………………………….....................…………………………………………………………………………………….......

   .…………………………………….....................…………………………………………………………………….………….......

   Contact number: (Please give complete Phone No. with <u>country, city</u> codes)

   Home (Tel): …………………………….…………… Home (Fax): …………………………………………....

   E-Mail (alternate, preferably G-mail or Yahoo):………………………………………………………………..

10. Nearest International airport (Specify the place/city):…………………………………………………….

> **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.
> e) For faster communication with the applicants CSSTEAP Secretariate will be using your email-id for all purposes (e.g. admission letter, air tickets and logistic arrangements).

11.   ACADEMIC QUALIFICATIONS* (mandatory)

Degree / (Bachelor/ Master) Diploma	Duration of Course (mention from which year to year)	University / Institution	Year of Passing	Grade / percentage	Major Subjects/specialization

*(Enclose copies of Degree/Diploma/Certificates/marks/grades obtained etc. and their certified 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)

    Spoken: Fair, Good, Very Good

    Enclose certified copies of marks/grades of degree, diploma, TOEFL (validity period), etc. certificates and their certified translations in English.

12.   DETAILS OF EXPERIENCE OF LAST FIVE YEARS

   (a) Present Position .... Present Responsibilities*: ....

      ....

      Organization and Complete Address
      ....

      ....

      Date of joining this Organization (dd/mm/year) ....

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

   (b) Experience during past 15 years:

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

13. (a) Activities & Projects in which your present organization is engaged (mandatory) and nature of your duties *

....

....

....

(b) Main Scientific/Technical facilities available in your organization *(Including approximate number and type of computers, type of software available etc.)

....

....

....

* If required attach separate sheet.

14. Have you done any other course (short or PG) from CSSTEAP (if 'yes', please give details including theme & year)

....

....

15. How this short course on Small Satellite Missions will help you in your work/organization? Please describe below.

....

....

16. DETAILS OF PASSPORT : Passport details are essential for selection of candidates and send copy of the passport wherever available.

Passport Number	Place of Issue (City and country)	Date of issue	Passport valid up to	Issuing Authority	Whether previously visited India if so place and date of last visit

17. Physical Fitness

a) Are you suffering from any recurring/chronic/serious communicable disease which may affect your study program in India?

.... | Yes / No |

b) If yes, please specify nature of illness (Candidates are advised to attach medical fitness certificate from a government hospital or government recognised hospital on hospital letter head).

18. How do you propose to meet the international travel and stay expenses in India? (preference will be given to those who will make their own travel arrangement).

....

....

19. 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

20. SPONSORING / NOMINATING AGENCY CERTIFICATE

Dr/Mr./ Ms. ....working in this organisation is sponsored/ endorsed by .... to attend the International Training Course on "International Training Course on Small Satellite Missions" to be held at Indian Institute of Remote Sensing, Dehradun, India during 10th - 21st November, 2014. We envisage to utilize his/her experience in specific tasks of our organization / agency. The candidate will not be dismissed from his/her the job/service while he/she is attending CSSTEAP programme. Following statements are mandatory for certification by the sponsorer.

i.   He/She will be/will not be provided international travel support by the organisation.

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.

(Mandatory: please tick appropriate option)

Date :	Signature:
Place :	Name in Capital Letters :
	Designation:
	Phone No. :
	Fax No. :
	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.)

21. FORWARDING NOTE BY THE RESPECTIVE INDIAN EMBASSY IN YOUR COUNTRY

This is to forward the application of   Dr/Mr/ Ms... of ....
.... (Specify the Country Name here) for the "Small Satellite Missions" to be held at Indian Institute of Remote Sensing, Dehradun, India during 10th - 21st November, 2014.

Date :	Signature :
Place :	Name :
	Designation :
	Phone No. :
	Fax No. :
	E-mail :

(Official seal of the Embassy / High Commission)

Note: **Application without official seal** of Embassy or High Commission will not be considered

N.B. Please send an advance copy of the application form duly signed by the sponsoring agency to the Course Director, CSSTEAP, IIRS Campus, 4, Kalidas road, Dehradun-248001, India by fax (+91-135-274-0785) for quick processing. Original copy to be sent through Embassy/High Commission of respective country at New Delhi duly signed by the sponsoring or nominating authority.

IMPORTANT

- The application which is not complete in all respects is likely to be rejected.
- Candidate must attach copies of certificates of
  (a) Medical fitness to attend the course, including Chest X-ray (PA), Blood Test (including Random Blood Sugar, HIV, HBs. Ag), Urine complete.
  (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) Smoking and consuming alcoholic drinks in class room and office campus is prohibited.
  (c) Highest degree obtained(degree certificate and mark sheet/grade card)
  (d) Proof of proficiency in English.
  (e) All Degree Certificates, if not in English, may please be translated in English and attested by the Head of the organization or transcript in English can also be submitted.

About Dehradun

Dehradun, the capital of newly formed Uttarakhand state, is located in one of the outer valleys of Himalaya in Northern 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 usually pleasant to moderately cold.

Important Dates

- Last date for receipt of application : August 31, 2014.
- Information of selection: September 2nd Week 2014
- Commencement of the course: November 10, 2014.
- Completion of the course: November 21, 2014.

Course Director

IRS & SSS Programme, ISRO Satellite Centre,

ISRO, Department of Space, Government of India,

Vimanapura Post, Bengaluru-560017, India.

Tel : +91-80-25082440, Fax: +91-80-25082444

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

CSSTEAP participants during local educational visit in Dehradun

IIRS Campus
Indian Institute of Remote Sensing,
4, Kalidas Road,
Dehradun 248 001 (INDIA)
Tel. : +91-135-274 4583
Fax: +91-135-274 1987

SAC Campus
Space Applications Centre,
Ambavadi Vistar P.O. Jodhpur Tekra
Ahmedabad 380 015 (INDIA)
Tel. : +91-79-2691 3344
Fax: +91-79-2691 5843

PRL Campus
Physical Research Laboratory
Navrangpura,
Ahmedabad 380 009 (INDIA)
Tel. : +91-79-2630 8550
Fax: +91-79-2630 0374

ISAC Campus
ISRO Satellite Centre
Vimanpura Post
Bengaluru 560 017 (INDIA)
Tel. : +91-80-2520 5252
Fax: +91-80- 2520 5251

Delhi Office
Department of Space
Lok Nayak Bhawan
Khan Market, 3rd floor,
New Delhi 110 003 (INDIA)
Tel. : +91-11-2469 4745
Fax: +91-11- 2469 3871

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IIRS Campus,
4, Kalidas Road,
Dehradun 248 001 (INDIA)
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           cssteap@gmail.com
Website: www.cssteap.org