Space Education:

International Outreach Activities of India

Presentation by ISRO, India
at the
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Space Educational Institutions in India

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

Indian Institute of Remote Sensing, Dept. of Space, Govt. of India Dehradun www.iirs.isro.gov.in

iirs

Indian Institute of Space Science and Technology, Government of India Department of Space Thiruvananthapuram www.iist.ac.in

Space Centres and Units in India

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

Affiliated to the United Nations

CSSTEAP: *Affiliated to the United Nations*

- **Started in November 1, 1995**

- **55 Countries of East Asia; South-East Asia; South Asia; Central Asia; Pacific**

- **Currently 15 Members** (India, Indonesia, Kazakhstan, Korea DPR, Kyrgyzstan, Malaysia., Mongolia, Myanmar, Nauru, Nepal, Philippines, Republic of Korea, Sri Lanka, Thailand & Uzbekistan)

- **Activities coordinated by a Governing Board - Member Countries and Observers from UN-OOSA & ITC - Meets every year**

- **Headquarters at Dehra Dun: IIRS Campus**

- **Other Campus: Space Application Centre and Physical Research Laboratory in Ahmedabad**

CSSTE-AP Educational Programmes

9-month course at IIRS in RS & GIS	9-month course at SAC in SATCOM	9-month course at SAC in SATMET	9-month course at PRL in Space Science

Award of PG Diploma by CSSTEAP

By Merit since 2004 at IIRS

1 year follow-up project in home country

CSSTEAP 1 Yr Fellowship in India

Award of Masters (M. Tech) degree by Andhra University

In addition, CSSTEAP also conducts short term courses & workshops in specific areas

CSSTE-AP: Achievements & Plans

- **33 PG Diploma Courses conducted for 554 scholars**
  - **14 RS & GIS**
  - **7 SATCOM**
  - **6 SATMET**
  - **6 SPACE SCIENCE**
- **22 Short Courses/Workshops on specific themes to 374 scholars**
- **Activities planned for 2011:**
  - **16th PG course in RS & GIS starting from July**
  - **8th PG Course in Satellite Communication starting from August**
  - **Short Course in RS& GIS**

In total 928 Professionals from 48 countries; including 28 from 17 countries outside AP region (on an average 65 per year).

CSSTE-AP: Linkages

Linkages with in India

DOS/ISRO	Host Institutions
Academic Institutions	IITs, Nirma University, etc for Guest Faculty
Andhra University	Recognition of PGD curricula to meet course-work requirement of M.Tech
GoI Organiations	For international student travel support

Linkages with International bodies

UN Agencies	UNOOSA, UNESCO, UNDP, WMO -fellowships / travel support
ITC	Academic & faculty support Recognized RS&GIS PG Diploma for partial M.Tech Programme
International Centers	ICIMOD, TWAS, *GDTA*– Student sponsorship/ exchange
Universities / Institutes	Guest Faculty (US,UK,EUROPE,JAPAN…)

Indian Institute of Space Science & Technology

IIST: Indian Institute of Space Science & Technology

- **Setup in September 14, 2007 under DOS, GOI, is a centre of excellence in education, integrating research in high technology area of Space Science & Technology**

- **The first professional Space University in India - the third in the world**

- **Offers programmes in Space Science and Space Technology**

Undergraduate Programmes

B.Tech. Aerospace Engineering
B.Tech. Avionics
B. Tech. Physical Sciences

Postgraduate Courses

M.Tech. RF and Microwave Systems
M.Tech. Soft Computing
M.Tech. Applied and Adaptive Optics
M.Tech. Chemical Systems

Doctoral Programmes

Postdoctoral Programmes

IIST Activities at a Glance

- **Currently 431 students in 3 batches are undergoing UG Courses**

- **Started PhD program in Feb 2010 with attractive assistantship package and job assurance. 18 Scholars are pursuing Doctoral Progammes in** Avionics, Aerospace Engineering, Chemistry, Physics & Mathematics

- **PG Courses are starting from August 2010**

- **Has 69 Faculties drawn from India and abroad**

- **Plans to augment with** Centre of Excellence / Specialized Laboratories in Virtual Reality; Nanoscience and Technology; High-speed Flow Lab for advanced propulsion studies; Wind tunnel system with Laser Diagnostic Facility

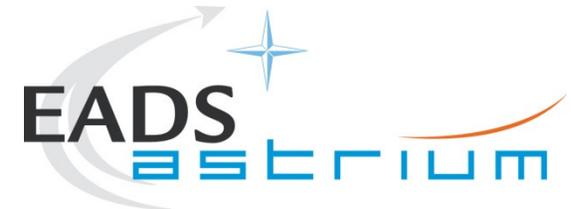- **Deemed to be University in April 2007**

IIST: International Cooperation

- **An MOU with École polytechnique, France has been signed and a team is expected to visit IIST in the next semester**

- **Discussions have been held with Lunar and Planetary Institute/USRA and a team will be visiting IIST in third week of August 2010 to sign an MOU**

- **Caltech, USA will be visiting IIST in August and an MOU will be signed**

- **Discussions have been held with EADS, Astrium for exchange of faculties**

Indian Institute of Remote Sensing

IIRS: Indian Institute of Remote Sensing

- **Indian Photo-Interpretation Institute (IPI), when set up in 1966 and IIRS since 1983**

- **Create awareness and share the expertise on Geospatial technologies with Decision makers, middle level managers, technician and also working level staff.**

- **One of the best in south-east Asia, to conduct several parallel training & educational programs**

- **Has excellent infrastructure**

- **Provide capacity building in all fields of geospatial technology & applications in among the user community**

- **Offers several courses (certificate, P.G. Diploma, M.Sc & M.Tech courses) of different durations (1week to 24 months) and also customized courses**

IIRS: Major Activities

Education

**MTech (AU)
MSc – IIRS-ITC
(Geoinformatics,
Geohazards)**

**Student Thesis
Researchers
DOS Projects
Ext. funded**

Research

- **RS & GIS – Mapping and monitoring (Natural Resource Management)**

- **Geoinformatics Technology and Application;**

- **Geoinformatics – Disaster Management**

Training

**Scheduled
Customised
Internat./ITEC
NNRMS / Univ
CSSTEAP**

**EDUSAT
Trainees
Visitors
Web site
Prof. Society**

Outreach

IIRS – ITC Joint Collaboration

- **Since inception, IIRS collaborated with International Institute for Geoinformation Science and Earth Observation (ITC) of the University of Twente, The Netherlands**

- **Mainly in creating basic capability in training and education; upgrading infrastructure and faculty improvement**

- **IIRS – ITC Joint Education Programs for 2006 to 2010 offers MSc Geoinformatics and M,Sc. Geo-hazards courses every year and also runs joint logo PG Diplomas. So far 57 scholar are awarded with degrees/ diplomas.**

- **IIRS – ITC also collaborated with other institutions, viz., International Institute for Infrastructural, Hydraulic and Environmental Engineering (IHE), and Wageningen University (WU) for capacity building in disaster management. (July 2000 to July 2004).**

IIRS: Other International Outreach Activities

SHARES - Sharing of Experience in Space

- **India shares its experience in space technology with other developing countries**

- **Training on space applications, primarily, remote sensing and communications are provided to 35 candidates from 17 nations**

ITEC - Indian Technical and Economic Cooperation Programme

- **Started in September 1964 by MEA, GoI as a bilateral programme**

- **158 countries in Asia, East Europe, Africa & Latin America are invited to share the Indian developmental experience.**

- **IIRS conducts 2 short courses (8 weeks) annually on DIP and Geoinformatics since 2001. So far about 250 candidates from 62 developing countries have been benefited**

- **Significantly contributes to South-South cooperation**

661 beneficiaries from 77 countries through IIRS-ITC; SHARES & ITEC

Thanks for your kind attention

For further information on :
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        IIRS: **dean@iirs.gov.in**
        IIST: **bn_suresh@iist.ac.in**