

REPORT ON STATUS OF

Centre for

Space Science & Technology Education in Asia Pacific

(CSSTEAP)

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CSSTEAP, INDIA &

Indian Institute of Remote Sensing (NRSA), Dehradun, INDIA

49th UN-COPUOS, 13 June, 2006; VIENNA



Establishment of CSSTEAP

- Nov 1, 1995 – 10 Countries sign agreement to establish CSSTEAP
- May 7, 1996 – Cooperation Agreement with UN
- Mar 10, 1998 – Host Country Agreement (Sec. DOS, GOI)



49th COPUOS,
June 13-2006, Vienna

DPR Korea (1996)

India

Indonesia

Kazakhstan

Kyrgyzstan

Malaysia (1996)

Mongolia

Myanmar (1999)

Nauru

Nepal

Philippines (1998)

Republic of Korea

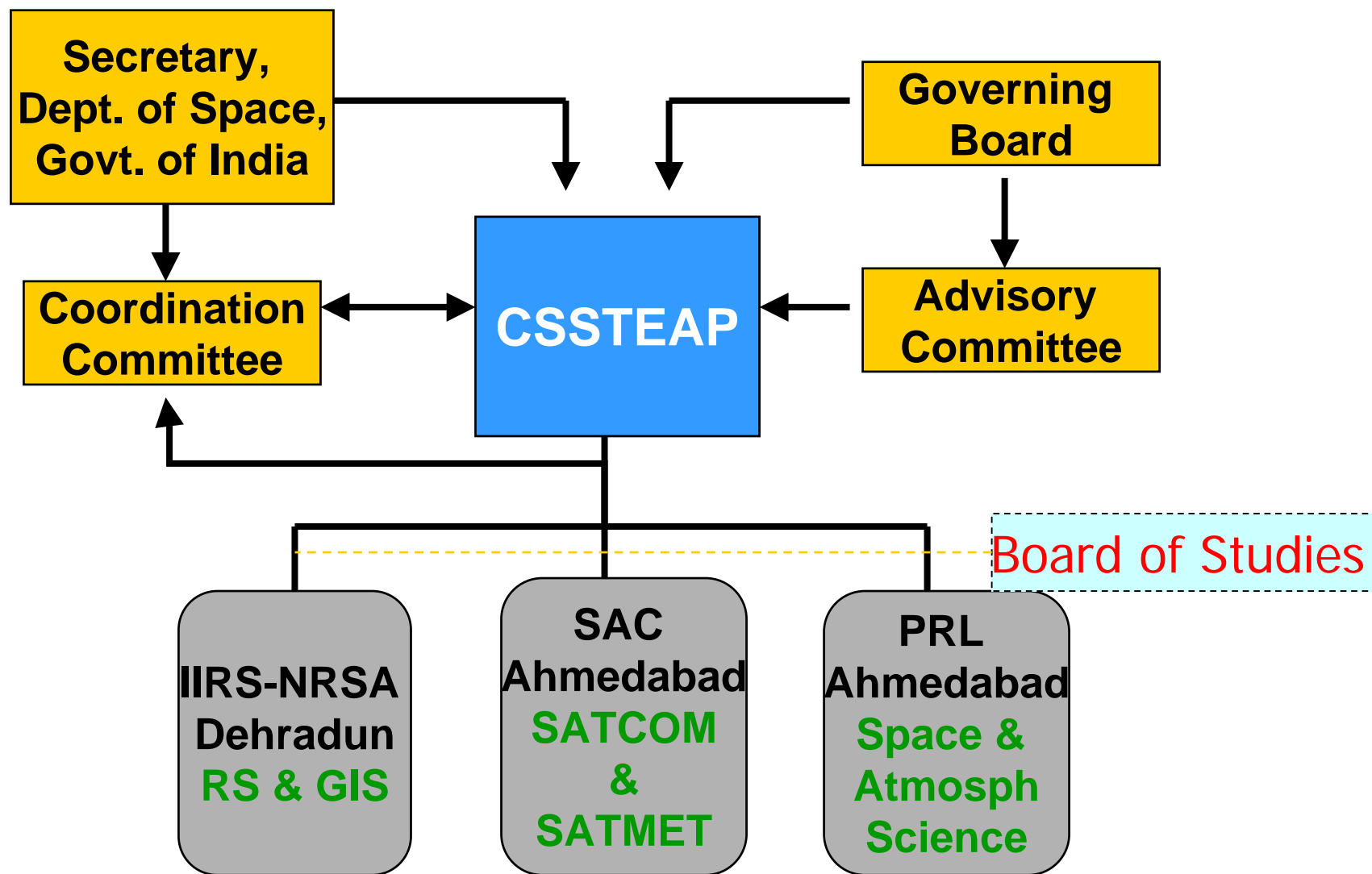
Sri Lanka

Thailand (2005)

Uzbekistan



CSSTEAP: Organizational Structure





GOVERNING BOARD

- GB formulates policies of CSSTEAP
- GB has representatives from 15 countries of Asia-Pacific and 2 observers (UNOOSA, ITC-Netherlands)
- GB-2005- (May 14, 2005, Dehradun)
 - Directs a befitting 10 Year Commemoration Function be organised
 - A Strategy Document for next 10 Years of CSSTEAP be prepared
- BG-2006 – (May 19, 2006, Bangalore)
 - Reviewed Strategy and given guidelines for its refinement
 - Suggested new training areas to be addressed by CSSTEAP





ADVISORY COMMITTEE

- AC is technical arm of GB, an independent body of experts, for
 - Guiding the technical programme of CSSTEAP
 - Evaluating the courses & Advise CSSSTEAP in setting technical facilities
 - Address all issues of coordination with other institutions
- AC-2005:12 May 2005, Dehradun
 - Dr Alice Lee in Chair
 - Areas of data, linkages, application oriented courses & Mtech research were addressed, New specialization in RS&GIS
- AC-2007:17 May 2006, Banagalore
 - Dr Viktor Kotelnikov in Chair
 - Educational programmes for Disaster Management, Tele-medicine, GIS Applications including epidemiology, strengthening linkages addressed



CSSTEAP : Disciplines of education

CSSTEAP provides training and education in 4 areas:

- ☐ **Remote Sensing and Geographic Information Systems (RS & GIS)**
- ☐ **Satellite Meteorology & Global Climate (SATMET)**
- ☐ **Satellite Communications and Global Positioning Systems (SATCOM)**
- ☐ **Space and Atmospheric Sciences (Space Science)**



CSSTEAP : Headquarters & Campuses



**CSSTEAP Hqs,
IIRS Campus,
Dehra Dun**



IIRS, Dehradun



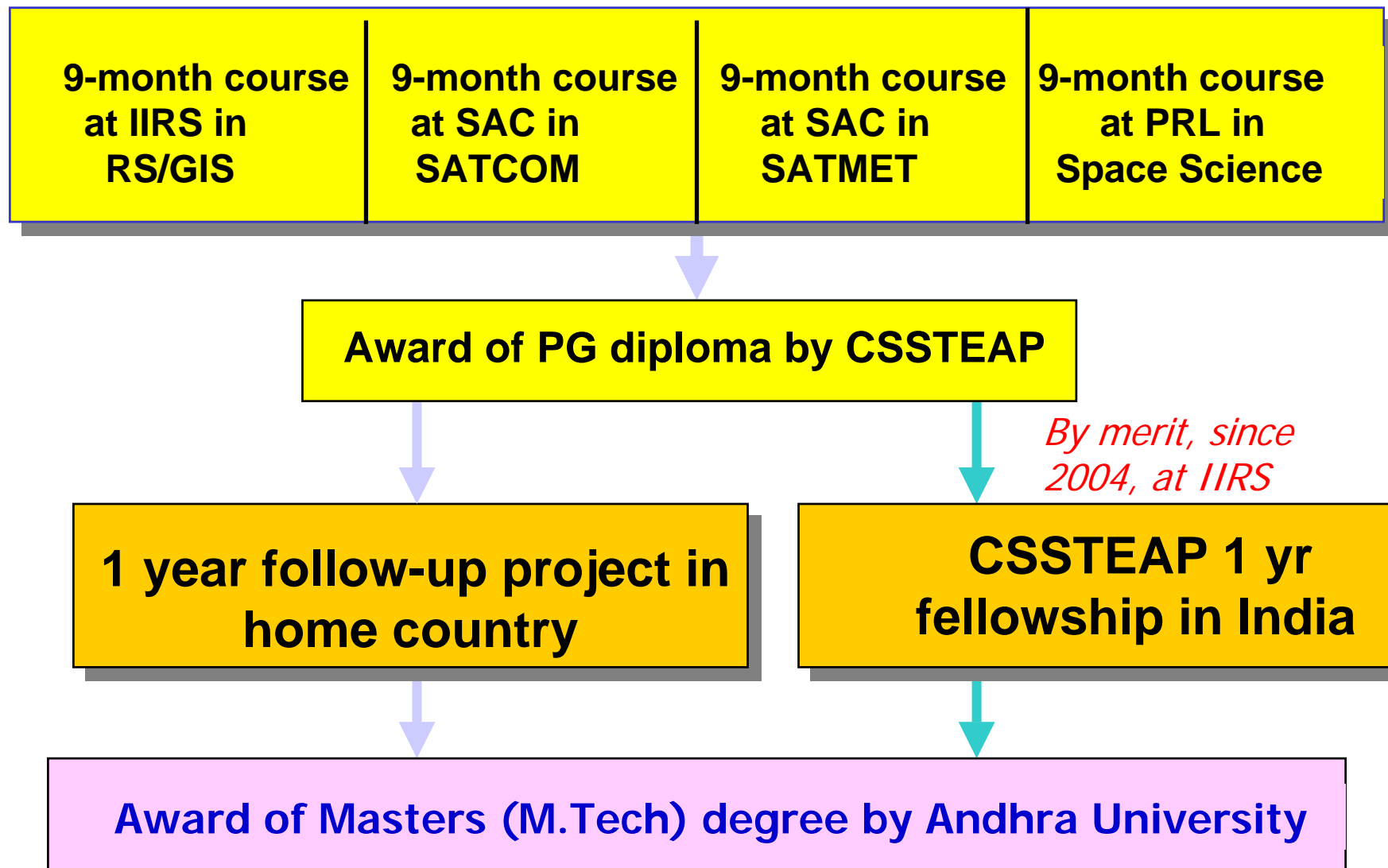
**SAC, Bopal Campus,
Ahmedabad**



PRL, Ahmedabad



EDUCATIONAL PROGRAMMES





Common Curricula under UNOOSA aegis

REGIONAL CENTRES FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION

Remote sensing and
the geographic information system
Education curriculum

*September 2001,
Frascati, Italy*

REGIONAL CENTRES FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION

Satellite communications
Education curriculum

REGIONAL CENTRES FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION

Satellite meteorology and global climate
Education curriculum

REGIONAL CENTRES FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION

Space and atmospheric science
Education curriculum

49th COP
June 13-20



United Nations



United Nations



Linkages

- ***INDIA***

- DOS/ISRO Host Institutions & other institutions
- Andhra University – Recognition of PGD curricula to meet course-work requirement of MTech
- GOI Organisations for international student travel support
- Academic Linkage with Universities/Institutes for Guest Faculty

- ***INTERNATIONAL***

- UN Agencies including UNOOSA, UNESCO, UNDP, WMO – fellowships / travel support/ sponsor short courses
- International Centres (ICIMOD, TWAS, GDTA*) – Student sponsorship/ exchange
- Universities / Institutes: Guest Faculty (US,UK,EUROPE...)



PG-D RS & GIS

SATCOM

SATMET

SPACE SC

Afghanistan
Azerbaijan
Bangladesh
Bhutan
Cambodia
China
DPR Korea
Fiji
India
Indonesia
Iran
Japan
Korea
Kazakhstan
Kyrgyzstan
Lao PDR
Malaysia
Maldives
Mongolia
Myanmar
Nepal
Pakistan
Papua N.G
Philippines
Sri Lanka
Thailand
Tajikistan
Taiwan
Uzbekistan
Vietnam

1996-97	25 Students 14 Countries			
1997-98	23 Students 14 Countries	13 Students 9 Countries		
1998-99	21 Students 11 Countries		17 Students 10 Countries	10 Students 7 Countries
1999-00	17 Students 11 Countries	18 Students 8 Countries		
2000-01	19 Students 13 Countries		21 Students 13 Countries	9 Students 5 Countries
2001-02	20 Students 13 Countries	14 Students 8 Countries		
2002-03	23 Students 13 Countries		19 Students 13 Countries	11 Students 3 Countries
2003-04	21 Students 16 Countries	15 Students 7 Countries		
2004-05	20 Students 11 Countries		15 Students 10 Countries	9 Students 5 Countries
2005-06	19 Students * 13 Countries	12 Students * 6 Countries		



SATMET

- **PG-Diploma Completed (Four Programs)**
 - 72 Trainees (18 Countries); 1998,2000,2002,2004
- **Short-term (Two Programs)**
 - Workshop on Emerging Trends in Satellite Meteorology (March - November, 1998)
 - Emerging Trends in Satellite Meteorological Applications with Special Emphasis on Microwave Remote Sensing" (May 2002)
- **Areas of Pilot Project/ Research**
 - Aerosol Studies / Land Applications
 - Rainfall Studies (Merged Products)
 - CMV, Global Insolation using METEOSAT
 - Mesoscale Model Studies
 - Tropical cyclone Studies
 - MODIS Data Validation
 - Satellite Climatology



SPACE SCIENCE

- PROGRAMS
 - 4 Programs, 39 Participants, 1 countries
- PILOT PROJECTS / RESEARCH
 - Aeronomy 10
 - Astronomy 6
 - High Energy Physics 2
 - Atmospheric science 18
 - Instrumentation 3



CSSTEAP Achievements 2005-06

- Courses completed
 - 9th RS & GIS
 - Short course : RS & GIS in Sustainable Agriculture
 - 5th SATCOM
- Phase-II CSSTEAP : M.Tech Research
 - 8th RS & GIS : 4 awarded M.Tech (*CSSTEAP fellowship*)
 - 9th RS & GIS : 2 joined for M.Tech (*CSSTEAP fellowship*)
 - 18 MTech awarded by AU in last year
 - RS & GIS – 11
 - SATCOM - 1
 - SATMET - 2
 - SPACE SCIENCE – 4
- 10 Year Commemoration Function



SHORT-TERM TRAINING IN RS & GIS

❖ 7 theme specific short-term courses and 1 Workshop on RS & GIS organised till 2005. The various themes covered are-

- *Digital image processing (DIP) for environmental management: a remote sensing perspective (year -1999)*
- *RS & GIS Technology and applications in natural resources and environmental management (year- 2000 & 2001)*
- *Geoinformatics for disaster management (year -2002 & 2004)*
- *Geoinformatics in biodiversity assessment (year-2003)*
- *Geoinformatics for sustainable agriculture (year -2005)*
- **Satellite RS& GIS applications in agricultural meteorology (WMO Int. Workshop, 2003)**





Short term Theme-Specific Courses

- ❑ **Theme** : Geo-informatics for Sustainable Agriculture
- ❑ **Duration** : 4 Weeks (Aug 16 to Sep 09, 2005)
- ❑ **Participants** : 17 trainees (9 **AP** countries)

(Afghanistan – 6; Azerbaijan – 1; Bangladesh – 3; Nepal - 1; Kyrgyzstan – 2; Iran – 1; Mongolia – 1; Philippines - 1; Sri Lanka - 1; India -1)

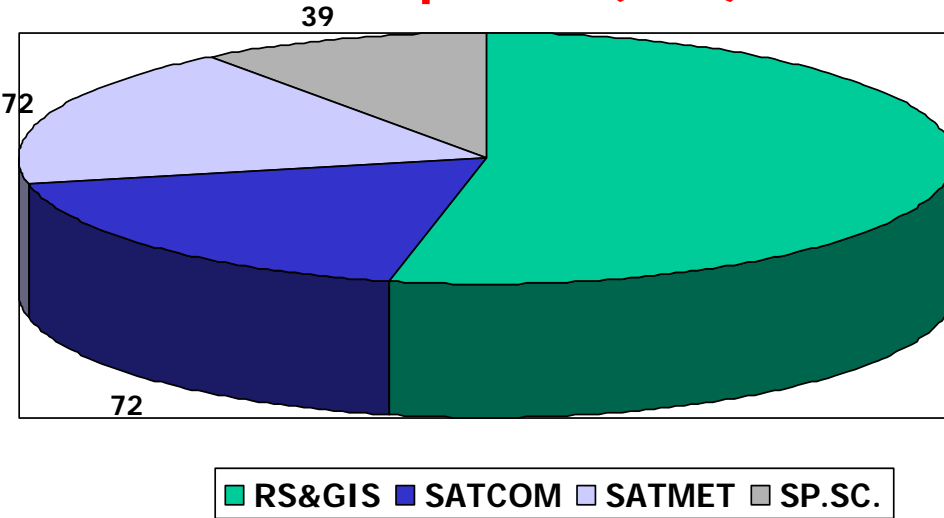
- ❑ **Course Structure** :
 - ❑ Basics (RS, GIS) 2 weeks
 - ❑ Thematic 2 weeks



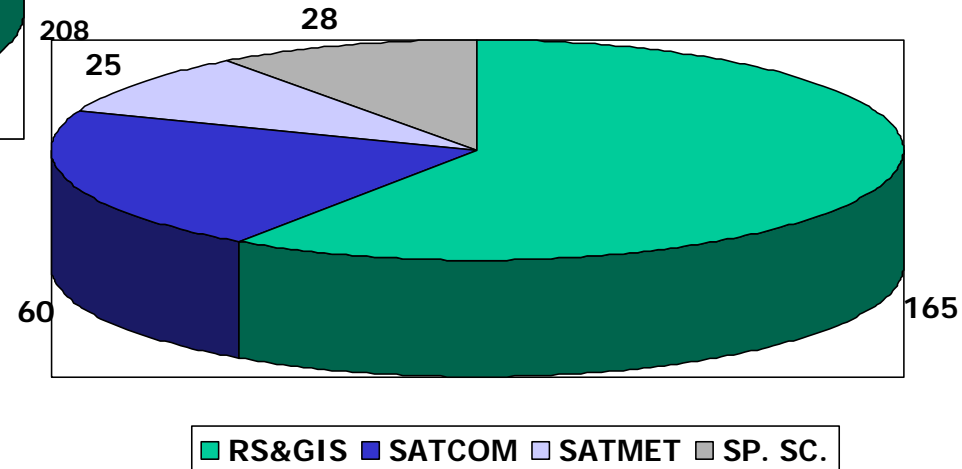


STUDENT TURNOUT (669)

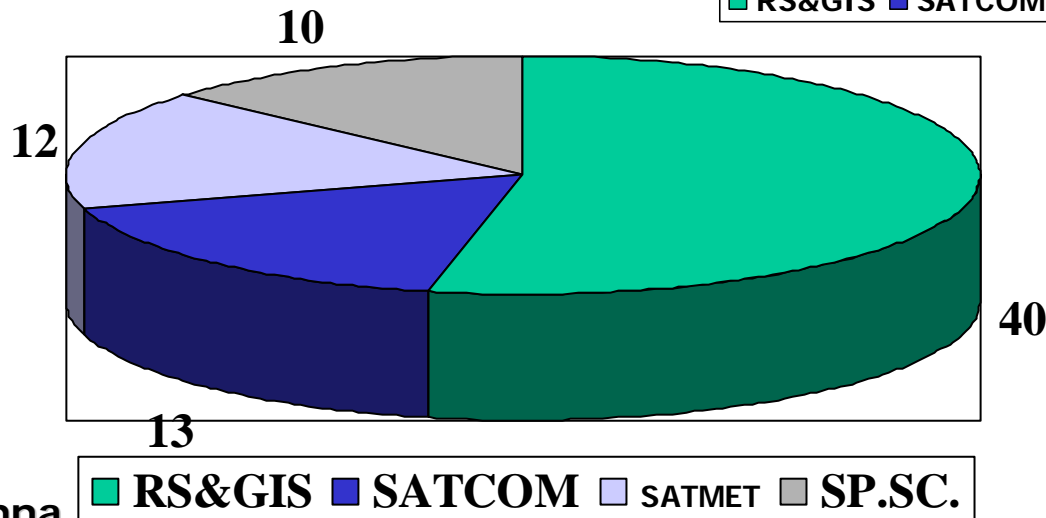
P.G. Diploma (391)



Short Courses (278)



M.Tech awarded (75)





10 Years Commemoration Function

- Organised on Nov 8, 2005 at NASC , New Delhi
- Participants & Guests included (200)
 - Shri Prithviraj Chavan, MOS, PMO, GOI
 - Dr Sergio Camacho, Director, UNOOSA
 - Representatives from GB countries
 - Past Directors, Deputy Directors CSSTEAP
 - Selected past student from each course, current CSSTEAP students
 - GOI, associated institutes & guests
- A compendium listing achievements and abstracts of all student project work was published



10 Year Commemoration Function 2005 New Delhi



49th COPUOS,
June 13-2006, Vienna



TRAININGS : ONGOING / PLANNED

- 10th RS & GIS PG course (Oct, 2005 - Jun 2006) at IIRS, Dehradun
- 5TH PG SATMET course (Aug, 2006 - Apr 2007) at SAC, Ahmedabad
- 5TH PG Space Science course (Aug, 2006 - Apr 2007) at PRL, Ahmedabad
- Short course on RS & GIS applications in urban studies at IIRS Dehradun during Aug 14 – Sept 15, 2006
- 11th RS & GIS PG course (Oct, 2006 - Jun 2007) at IIRS, Dehradun



PG-Diploma : 10th RS & GIS (ongoing)

- 10th P. G . Course on R. S. & GIS
 - commenced on *October 01, 2005*
 - ending on *June 30, 2006*
- **62** applicants from **13** countries of Asia-Pacific region,
 - *19* candidates from *13* countries were admitted
- The participants of this course are from-
 - China - 1; Indonesia- 2; Iran –1;
 - Kazakhstan –1; Kyrgyz Republic – 1
 - Mongolia- 2; Myanmar- 1; Nepal- 2;
 - Sri Lanka- 3; Thailand- 2;
 - Uzbekistan- 1; Vietnam- 1
 - India-2





Pilot Projects – Research Topics: 10th RS & GIS

- **AGRICULTURE : 2** : Soil spectral variability; Cropping System
- **GEOSCIENCE : 3** : Hydrogeology, terrain analysis & geo-hazard modelling (landslide)
- **FORESTRY : 4** : Plantation inventory, mangrove characterization, forest dynamics, vulnerability and conservation planning
- **COASTAL & MARINE SCIENCE : 2** : CZ management, water quality
- **URBAN : 1** : Industrial site suitability
- **WATER RESOURCES : 2** : Flood and hydrological modelling
- **ADVANCES IN RS & GIS : 5** : Spatial modelling, DEM generation, WebGIS, Hyperspectral – HYPERION, SAR Interferometry



Training Appraisal

- A questionnaire circulated to trainees (upto 2002-03) covering their current activity, usefulness of training and suggestions on future training (period, content and emphasis)
- A total of 53 responses indicate
 - Training and course material was useful to include similar topics in their teaching
 - Of respondents carrying out research, half could develop projects / activities using training as a base
 - Trainees would like to have additional support (for RS data, software, etc) in order to make effective utilization of training in their research activity
 - More practical training, longer pilot project duration, refresher programmes favoured by majority of respondents



THANK YOU

www.cssteap.org

49th COPUOS,
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