

**Education, Training, Research and
Fellowship Opportunities
in Space Science and Technology
and its Applications**

A Directory



UNITED NATIONS
1998

**Office for Outer Space Affairs
United Nations Office at Vienna**

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Fellowship Opportunities
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This publication has not been formally edited

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INTRODUCTION

The Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE 82), held in Vienna from 9 to 21 August 1982, recommended (i) that the expanded United Nations Programme on Space Applications should develop a fellowship programme for in-depth training of space technologists and applications specialists, with the help of Member States and relevant international organizations, and establish and update lists of available fellowships in all States and relevant international organizations; and (ii) that an international space information service should be established, initially consisting of a directory of sources of information and data services. At its thirty-seventh session, held in 1982, the General Assembly of the United Nations endorsed these recommendations of UNISPACE 82 in its resolution 37/90.

Among the first activities conducted under that particular mandate was the convening, under the auspices of the United Nations Programme on Space Applications, of a United Nations International Meeting of Experts on Remote Sensing Information Systems, hosted and co-sponsored by the Government of the Federal Republic of Germany and held in Feldafing and Oberpfaffenhofen, Federal Republic of Germany, from 7 to 11 May 1984; the meeting was also supported by the European Space Agency. That Meeting of Experts recommended that the United Nations International Space Information Service should collect information on education and training opportunities and disseminate such information, on request, to Member States and specialized organizations. The Report on the International Meeting of Experts, including the recommendations, was submitted to the United Nations Committee on the Peaceful Uses of Outer Space at its twenty-eighth session, held in June 1985.

Starting in 1985, the United Nations, through a note verbale and a questionnaire, has been requesting on regular basis information from Member States, United Nations specialized agencies and international agencies regarding education, training, research and fellowship opportunities available in different aspects of space science and technology, including basic space sciences, remote sensing, satellite communications and satellite meteorology, in their educational and scientific institutions and establishments. The information received have been published as directories (United Nations documents A/AC.105/366 and Add.1 and 2 published in 1986-87, A/AC.105/432 published in 1990, A/AC.105/548 published in 1993).

This directory is a fully reformatted, updated and expanded version of the earlier directories, based on the information submitted by Member States and international organizations up to 1 June 1996. The directory covers four areas - basic space sciences, remote sensing, satellite communications and satellite meteorology. The information submitted by Member States has been arranged in alphabetical order by country name in English. The information is given in the language in which it was submitted.

The information contained in this directory for each institution includes its areas of specialization, the educational and research programmes offered, the facilities available, the prerequisite qualifications, financial information, fellowship opportunities and opportunities for international cooperation. Addresses and contact points for further information are also included.

An effort has been made to present, as accurately as possible, the information provided by responding Member States, specialized agencies and international organizations. However, programmes frequently change and users of this directory who are interested in a particular programme are urged to contact the institution for current detailed information. It should also be noted that the list of countries and institutions contained in this directory is not exhaustive. Further addenda to this directory will be issued, as necessary, with additional or updated information from Member States and international organizations.

It is hoped that this directory will be of assistance to Member States and will promote international co-operation in the peaceful uses of outer space. In particular, it is hoped that information on education and research opportunities will assist developing countries in establishing indigenous capabilities in space science and technology and its applications.

Comments, queries and information with respect to this directory, including additional submissions or updated information, should be sent to the following address:

Office for Outer Space Affairs
United Nations Office at Vienna
Vienna International Centre
P.O. Box 500, A-1400 Vienna, Austria

ARGENTINA

COMISION NACIONAL DE ACTIVIDADES ESPACIALES

Av. Dorrego 4010/18 (1425), Buenos Aires, Argentina
Fax: 541-774-5703 Teléfono: 774-9310, 771-5810
Persona a contactar: Dr. Conrado Varoto

Funciones principales de la institución: Asesoramiento al P.E.N. en materia espacial. Coordinación de la actividad espacial en la Argentina

1. PROGRAMAS ACADEMICOS Y CIENTIFICOS

Area(s) of specializaton: basic space sciences, remote sensing, satellite communications, satellite meteorology

Lista de cursos y actividades de investigación:

Cursos: Curso de Postgrado en Tecnología Aeroespacial; Aplicación de la teleobservación en la enseñanza de la geografía, curso nacional de sensores remotos, curso regional para América Latina sobre aplicaciones de la teleobservación en la evaluación de los recursos naturales.

Proyectos: Desarrollo de un satélite científico (SAC-I); Rutina de manchas solares; Aplicación de imágenes digitalizadas a la física solar; Transporte y liberación de energía en fulguraciones solares; Magnetismo terrestre aéreo y satelitario (MAGATYS); Evaluación regional de recursos geotérmicos (REGEO); Sistemas fotovoltaicos autónomos; Banco de ensayos de colectores solares; Relevamiento solarimétrico y eólico; Desarrollo e implementación de métodos para corrección geométrica con minimización de puntos de control; Desarrollo de métodos de clasificación automática no supervisada y supervisada para reducción del tiempo de cálculo de precisión; Aplicación de técnicas de reconocimiento de formas de la registracion de imágenes de la superficie terrestre; Adaptación de las facilidades para procedimientos de cintas de alta densidad al sistema PI; Desarrollo de método de comparación de datos para almacenamiento - Desarrollo de un sistema para presentación en pantalla de imágenes de alta resolución; Desarrollo de un sistema de procesamiento de senales analógicas; Evaluación de análisis automático de textura para incrementar la precisión de la clasificación con datos SPOT; Proyecto de implementación de un sistema de comunicaciones por satélite (DOMSAT); Proyecto de caracterización espacio-temporal de variables termohidrodinámicas en niveles estratosféricos.

Duración/Frecuencia/Idioma(s) de enseñanza: 1-4 cuatrimestres/permanente/español

Tipo de servicios o instalaciones: Laboratorios, computadoras, aulas

Número de participantes: Entre 1 y 2

Calificaciones académicas (mínimas) requeridas: Grado en disciplinas afines a la especialidad

Certificados o diplomas extendidos por la institución: Certificados

2. COSTO DE LOS PROGRAMAS

Costo de los cursos, de los libros de texto, y de los materiales de Investigación afines: A ser definido en cada caso

Gastos mensuales de alojamiento, manutención y gastos menudos: --

3. DISPONIBILIDAD DE BECAS

Disponibilidad de becas para participantes extranjeros: Variable segun el caso

Otras posibilidades de ayuda financiera para participantes extranjeros: Alojamiento con tarifas preferenciales en el Centro Espacial San Miguel

4. COLABORACION CON LOS PAISES EN DESARROLLO: Si

Esfera de interés: Formación de recursos humanos, intercambio de tecnologías espaciales, asesoramiento, diseño de proyectos

Region geográfica determinada: Con todas las regiones

A U S T R A L I A

A. AUSTRALIAN DEFENCE FORCE ACADEMY

Northcott Drive, Canberra ACT 2600, Australia
Tel.: 61-6-2688279 Fax: 61-6-2688279 E-mail: j-baird@adfa.oz.au
Contact person: A/Prof. John Baird

Principal function(s) of institution: Education, research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences, remote sensing

Summary of courses and research activities:

Courses: M.S and Ph.D

Research: Aerothermodynamics, supersonic mixing. Satellite attitude stabilization. Space structures.

Duration/Frequency/Language(s) of instruction: 2 yrs (M.S), 3 yrs (PhD)/annually/English

Facilities: Modern teaching and research facilities, access to hypersonic wind tunnel, shock tube, structural testing and composite manufacturing facilities.

Number of trainees: 2-3 in each programme

Entry requirements: Honours undergraduate engineering degrees

Degree/Diploma/Certificate awarded: Ph.D., M.Sc. from University of New South Wales

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: No fees charged

Monthly room and board and incidental expenses: A\$ 1,200 per month

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: 4 to 5

Other financial support available for foreign participants: Yes

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Aerothermodynamics. Spacecraft engineering. Remote sensing.

Geographical preference: None

B. UNIVERSITY OF SYDNEY, DEPARTMENT OF PHYSIOLOGY

Sydney 2006, NSW, Australia
Telex: AA 26169 Cable: UNIVSYD
Contact person: Dr. J.F.Y. Hoh

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences

Summary of courses and research activities:

Research: Research into basic mechanisms of adaptation of skeletal muscles to the zero gravity environment of space. Studies conducted on changes in the muscle protein Myosin which determines muscular performance in rats to be flown in space. Studies also done on rats under conditions which simulate zero-gravity conditions. Research is also being done to eliminate the physiological mechanisms for adaptive changes of muscles under zero-gravity conditions.

Duration/Frequency/Language(s) of instruction: 3 yrs/annually/English

Facilities: Ph.D. programme within the Faculty of Sciences

Number of trainees: 1

Entry requirements: B.Sc.(Hon) in Physiology/Biological Sciences

Degree/Diploma/Certificate awarded: Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Space physiology

Geographical preference: None

C. AUSTRALIAN NATIONAL UNIVERSITY

Contact persons: R.W. Boswell, Plasma Research Lab, Canberra ACT 2600, Australia, Tel.: 61-6-2492425, E-mail: Rod.Boswell@anu.edu.au; Dr. D.J. Faulkner, Associate Director, Mount Stromlo & Sidney Spring Observatories, Weston P.O. ACT 2611, Tel.: 61-6-2490266, Fax: 61-6-2490260, E-mail: director@mso.anu.edu.au

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializatou: basic space sciences

Summary of courses and research activities: Magnetospheric and auroral physics (interaction of waves with plasma, active experiments with electron beams, computer simulation). Ph.D. programme in Astronomy and Astrophysics. Ground and space based astronomical observations.

Duration/Frequency/Language(s) of instruction: 4 yrs/annually/English

Facilities: Space simulation chamber, comprehensive diagnostics, fast computers (Cyber 205). Telescopes, instrumentation engineering

Number of trainees: 5-10

Entry requirements: B.Sc. Honours (physics), M.Sc.

Degree/Diploma/Certificate awarded: 3-6 year Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: A\$ 16,500 p.a.

Monthly room and board and incidental expenses: A\$ 1,000

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: 5 fellowships exist on a competitive basis at ANU

Other financial support available for foreign participants: Other financial aid possibilities exist

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Laboratory and computer space plasma simulation. Astronomy.

Geographical preference: None

D. AUSTRALIAN NATIONAL UNIVERSITY, RESEARCH SCHOOL OF PACIFIC AND ASIAN STUDIES

Canberra, ACT 2600, Australia

Tel.: 61-6-2494347 Fax: 61-6-2494896 E-mail: bja406@coombs.anu.edu.au

Contact person: Dr. Bryant Allen

Principal function(s) of institution: education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing

Summary of courses and research activities:

Courses: PhD by thesis

Research: Delineation of agricultural systems in Papua New Guinea; Reconstruction of palio-coastline on the east coast of China over the last 1000 years in conjunction with documentary and cartographic evidence.

Duration/Frequency/Language(s) of instruction: 3 yrs/Intermittent/English

Facilities: Sun Sparc Computer station running ERMapper remote sensing software and ARCINFO GIS

Number of trainees: 1-2

Entry requirements: B.Sc./BA with first class honours or M.Sc. in relevant fields

Degree/Diploma/Certificate awarded: Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Yes

Other financial support available for foreign participants: Yes

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Sustainable development of agricultural systems

Geographical preference: Papua New Guinea; NE and SE Asia

E. AUSTRALIAN NATIONAL UNIVERSITY, RESEARCH SCHOOL OF PHYSICAL SCIENCES

Canberra ACT 2600, Australia

Tel.: 61-6-2492467 Fax: 61-6-2491884 E-mail: Iain.Macleod@anu.edu.au

Contact person: Dr. I.D.G. Macleod

Principal function(s) of institution: Research and postgraduate education

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializatou: basic space sciences, remote sensing, satellite communications, satellite meteorology

Summary of courses and research activities: Digital image analysis of remotely sensed data, oceanographic applications

Duration/Frequency/Language(s) of instruction: 3 to 4 yrs/Occasional/English

Facilities: Extensive research facilities including computer and specialized peripheral facilities for operating on digital image data

Number of trainees: 1 to 3

Entry requirements: Honours/Master degree in Physics, Computer Science, Electrical Engineering

Degree/Diploma/Certificate awarded: Research students are candidates for the Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: A\$ 13,000 p.a.

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: ADLOS/OPRS scholarships

Other financial support available for foreign participants: Graduate student assistanceship on a competitive basis - A\$ 5,000 a year

4. COLLABORATION WITH DEVELOPING COUNTRIES: None

F. UNIVERSITY OF WOLLONGONG, DEPARTMENT OF PHYSICS

P.O. Box 1144, Wollongong, NSW 2500, Australia

Tel.: 042-213-517 Fax: 042-213-151 E-mail: wjzealy@UOW.EDU.au or
p.nulsen@UOW.EDU.au

Contact person: Dr. William J. Zealey

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializatou: basic space sciences

Summary of courses and research activities:

Courses: Undergraduate (Astronomy/Astrophysics); Grad.Dip (Astronomy/Astrophysics); M.Sc. (Astronomy/Astrophysics); Ph.D. (Astronomy/Astrophysics);

Research: Image digitising and processing; optical, infrared and radio observations of galactic and extragalactic star formation regions; studies of long period variable stars; numerical hydrodynamics and astrophysical flows

Duration/Frequency/Language(s) of instruction: 2nd year B.Sc. 56 hrs, 3rd year B.Sc. 112 hrs, M.Sc. 1-2 years, Ph.D. 3 years/annually/English

Facilities: Image digitising/processing systems (PC/Sun); 0.4m DFM Telescope, CCD, photometer; TV Blink comparator; ESO/SERC plate libraries, CDROM planetary image library; access to AAT, ANU, AT telescopes; access to Science Centre Planetarium.

Number of trainees: Undergraduate/Grad.Dip - not set; Postgraduate - 2 M.Sc. and 1 Ph.D. per year

Entry requirements: see University Calendar or Advice to Overseas students

Degree/Diploma/Certificate awarded: B.Sc./Grad Dip./M.Sc./Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: HECS charges to Australian students. Apply for details of overseas fees.

Monthly room and board and incidental expenses: Apply for details

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Equity and Merit/DEET Overseas Postgrad. Awards (forms available via International Office, UOW)

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Astronomy/physics education/planetarium techniques

Geographical preference: Asia - Pacific

G. ROYAL MELBOURNE INSTITUTE OF TECHNOLOGY

P.O. Box 2476 V, Melbourne, Victoria, 3001, Australia

Tel.: 61-3-9-6602529 (Advance College) Fax: 61-3-9-6632518

Contact persons: Assoc. Prof. T.A. Roberts, Dean, Applied Sciences; Mr. Q. Manh, Department of Communication and Electrical Engineering; Mr. N.F. Edwards, Department of Land Information and RMIT Centre for Remote Sensing and GIS, Tel.: 61-3-9-660-2213, Fax: 61-3-9-663-2517, E-mail: LandInfo@rmit.edu.au

Principal function(s) of institution: Education and applied research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences, satellite communications, remote sensing

Summary of courses and research activities:

Courses: Dynamics of satellites; spacecraft structural analysis; orbital payload structural verification; Applied Science Faculty: Satellite positioning via the Global Positioning System; undergraduate teaching of applied science in surveying; research and experimental activities related to the Global Positioning System; Engineering Faculty: Continuing education for practising engineers; Technical College: Technician course in satellite ground station maintenance. Department of Land Information: Bachelor of Land Information (in Surveying or Cartography);

Graduate Diploma in Land Data Management; Master of Applied Science; Master of Land Data Management; Ph.D.; relevant short courses.

Duration/Frequency/Language(s) of instruction: One semester/Annually/English; in remote sensing - B. Land Inf.-4 yrs; Grad.Dip.-1 yr; M. App. Sci.-2 yrs; M.L.Data.Man.-1.5 yrs; Ph.D.-3 yrs/annually/English

Facilities: Large computer and finite element software. Vibration test equipment. Applied Science Faculty; Engineering Faculty (Satellite receiving earth station, communication laboratory); Technical College (Communication equipment, data communication, multiplexing/computer data equipment). Microbian Digital Analysis facility; Intergraph computer-aided mapping system; Microstation computer-aided mapping system; GPS satellite positioning equipment.

Number of trainees: Between 8 and 30

Entry requirements: Entry to undergraduate Aeronautical Engineering - preferably with Mathematics and Physics background. For Master's degree - preferably science and engineering. Applied Science Faculty - Univ. entrance exam. Engineering Faculty - Bachelor of Engineering in Electrical, Electronic or Communications Engineering. Technical College - Electronic tradesman qualification. Department of Land Information: for undergraduate degree - university entrance level in mathematics; for postgraduate diploma and Masters degree - under-graduate degree in Science, Engineering or other related discipline

Degree/Diploma/Certificate awarded: Part of Bachelor of Engineering (Aeronautical) course. Applied Science Faculty - part of Bachelor of Appl. Science and Master of Appl. Science. Engineering Faculty - Certificate of Course Attendance. Technical College - Electronic Technician. Department of Land Information - Ph.D., M. App. Sci., M.L.D.M., B. Land Inf., Grad. Dip. in Land Data Management.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: variable

Monthly room and board and incidental expenses: approx. A\$ 850

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: AGEMS

Other financial support available for foreign participants: Possibility of some tutoring/teaching duties for postgraduate students

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Satellite dynamics and control; spacecraft structures - static and dynamic analysis (Engineering Faculty). Satellite positioning and communications technology (Applied Science Faculty). Mapping, land information management, GPS, remote sensing, education (Department of Land Information and RMIT Centre for Remote Sensing and GIS).

Geographical preference: None

H. LA TROBE UNIVERSITY

Bundoora, VIC 3083, Australia

Telex: AA33143 Tel.: 4792735 Cable: LA TROB

Contact person: Prof. K.D. Cole, Dept. of Physics

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializatoin: basic space sciences

Summary of courses and research activities: Physics of the upper atmosphere, ionosphere and magnetosphere

Duration/Frequency/Language(s) of instruction: 1 year/Annually/English

Facilities: Computing facilities, ionosondes, photometer, Fabry Perot interferometer, Faraday rotation measurements, geomagnetic pulsation recording at field station at Beveridge, Victoria

Number of trainees: Between 1 and 8

Entry requirements: B.Sc.

Degree/Diploma/Certificate awarded: B.Sc. (Hons) or M.Sc. (Prelim)

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: A\$ 2100 + visa fee

Monthly room and board and incidental expenses: A\$ 700

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: 4 postdoctoral fellowships and 40 postgraduate scholarships

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Ionospheric physics

Geographical preference: Preferably with developing countries in the region

1. UNIVERSITY OF NEWCASTLE

Newcastle NSW, Australia 2308

Contact person: Assoc. Professor B.J. Fraser

Principal function(s) of institution: Teaching and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializatoin: basic space sciences

Summary of courses and research activities:

Research: Studies of particle interaction with the ionosphere via micropulsations

Duration/Frequency/Language(s) of instruction: --/--/--

Facilities: --

Number of trainees: Between 1 and 3

Entry requirement: A good honours degree

Degree/Diploma/Certificate awarded: M.Sc., Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: 15 fellowships/scholarships, Approx. A\$. 10,000

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Master and doctoral research programmes, collaborative research

Geographical preference: None

J. UNIVERSITY OF TASMANIA

Box 252C GPO, Hobart, Tasmania 7001, Australia

Telex: 58150 UNTAS Tel.: 202101 Cable: TASUNI

Contact persons: Prof. P.A. Hamilton, Department of Physics; Dr. M. Nunez, Department of Geography

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializatoin: basic space sciences, remote sensing, satellite meteorology

Summary of courses and research activities:

Courses: Principles of basic space sciences are included in a number of Bachelor of Science courses. Undergraduate courses in remote sensing and its applications, and climatology.

Research: Astronomy, astrophysics, radio-astronomy, cosmic ray and nuclear physics. Applications of remote sensing. Sea surface temperatures, evapotranspiration.

Duration/Frequency/Language(s) of instruction: M.Sc. and Ph.D. programmes - 3-5 yrs; remote sensing - 18 weeks; climatology - 27 weeks/annually/English

Facilities: Extensive optical astronomy, radioastronomy, x-ray astronomy and cosmic ray equipment. Control image processing system.

Number of trainees: Between 8 and 20

Entry requirements: B.Sc.(Hons.) or equivalent/2nd year undergraduate science or surveying subjects

Degree/Diploma/Certificate awarded: M.Sc., Ph.D. in BSS, none in RS

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: M.Sc.: A\$ 13,500 p.a.; Ph.D.: A\$ 13,500 p.a.

Monthly room and board and incidental expenses: Min \$A 700

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Several scholarships a year.

Other financial support available for foreign participants: Various bilateral assistance schemes: e.g. Colombo Plan, South Pacific Aid programme, Malaysia Scholarship, Mara Scholarship.

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Mapping of natural resources, climatology.

Geographical preference: None

K. JAMES COOK UNIVERSITY OF NORTH QUEENSLAND

Post Office, Townsville, Qld 4811, Australia
Tel.: 077814111
Contact person: Prof. Hopley, Dept. of Geography

Principal function(s) of institution: education

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializatopn: remote sensing, satellite meteorology

Summary of courses and research activities:

Courses: Remote sensing, satellite meteorology

Research: Ecological modelling, environmental remote sensing; GIS; research into hydrometeorology on wet tropical coasts; studies of rainfall systems on wet tropical coasts; evaluating the hydrological impact.

Duration/Frequency/Language(s) of instruction: Remote sensing and GIS - 9 hours per week; Geography - 15 hours/Semester /English

Facilities: Computer laboratory, GIS software, weather chart facsimile receiver, satellite (GMS) receiving equipment.

Number of trainees: 70 (2nd year), 40 (3rd year), 14 (postgrad.)

Entry requirements: 1st year science (for 2nd year); 2nd year RS or GIS (for 3rd year)

Degree/Diploma/Certificate awarded: M.Sc., Ph.D., Diploma.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: A\$ 10,100 p.a.

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Coral reef management; landuse; hydro-meteorology

Geographical preference: Tropical regions

L. MACQUARIE UNIVERSITY

North Ride, NSW 2113, Australia
Telex: AA22377 MACQUNI Tel.: (02) 8058908; (02) 888-8000
Contact persons: Prof. D.J. Skellern; Prof. R.E. Aitchison, School of Mathematics and Physics.

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializatopn: remote sensing, satellite meteorology

Summary of courses and research activities:

Research: Surface temperature contours, GMS-3, S-band high resolution pictures.

Duration/Frequency/Language(s) of instruction: --/--/--

Facilities: Fixed 6M GMS-3 installation, high resolution S-band, tracking 4 M dish, NOAA-TIROS receiving station

Number of trainees: Up to 2 per year

Entry requirements: B.Sc. or B.E.E.

Degree/Diploma/Certificate awarded: M.Sc.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: Appr. A\$ 600 suggested minimum

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: 6 postgraduate scholarships per year

Other financial support available for foreign participants: Visiting fellowships for senior scholars - airfare plus 8 weeks' living allowance

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Surface temperature profiles, fisheries, environmental pollution, rainfall, floods.

Geographical preference: None

M. UNIVERSITY OF NEW SOUTH WALES, CENTRE FOR REMOTE SENSING

P.O. Box 1, Kensington 2033, New South Wales, Australia

Telex: AA26054 Tel.: 61-2-697-4964 Fax: 61-2-6622087

Contact person: Professor B.C. Forster (Director)

Principal function(s) of institution: Training, education, research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing

Summary of courses and research activities:

Courses: Master's Degree course (1 year full time, 2 years part time), Graduate Diploma (1 year full time, 2 years part time), range of short courses in image analysis, principles of remote sensing and application areas. Tailored short courses have also been conducted in a number of Asian countries

Research: Synthetic Aperture Radar Research (SIR-B), geology, mapping information extraction, urban monitoring, soil moisture, arid land applications, microwave properties; Analysis of high resolution spaceborne visible and near infra-red images (SPOT, LANDSAT TM, Large Format Camera) for medium scale mapping, urban monitoring and input to land information systems; Integration of remote sensing and other data sources; Bushfire monitoring; Forest assessment; Rice monitoring; Classification procedures; Atmospheric correction using reference surfaces; Hydrographic and bathymetric mapping; Remote sensing input to geographic information systems.

Duration/Frequency/Language(s) of instruction: 1 yr full time, 2 yrs part time, 2-5 days (short courses)/annually/English

Facilities: Remote sensing laboratory: Dipix Aries II Image Analysis System; Meridian Image Analysis System; A-Image System; colourwrite facility; coordinate digitizer; wide range of satellite digital images, ERDAS/ARC INFO laboratory with 16 SUN stations

Number of trainees: Postgraduate programmes - Between 10 and 20; Short courses - Between 10 and 30

Entry requirements: Masters - 4 yrs degree, Diploma - 3 yrs degree; Short course-professional experience

Degree/Diploma/Certificate awarded: Master of Engineering Science, Master of Applied Science, Graduate Diploma in Remote Sensing

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Postgraduate programmes require entry visa fee or full fee payment, university costs and textbooks A\$ 250; short courses A\$ 120 per day

Monthly room and board and incidental expenses: A\$ 800

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Technology transfer, short courses, land use mapping and monitoring, coastal and near shore monitoring, all aspects of remote sensing research

Geographical preference: Asia, South Pacific

N. UNIVERSITY OF MELBOURNE, METEOROLOGY DEPARTMENT

Parkville, Victoria 3052, Australia

Telex: AA 35185 Tel.: (03) 3446912

Contact persons: Dr. R. Lile, Dr. T. Gibson

Principal function(s) of institution: Research and education

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specialization: remote sensing, satellite meteorology

Summary of courses and research activities:

Course: Physical principles of remote sensing. Basic principles of satellite meteorology, applications of analogue and digital satellite data.

Research: Applications of remote sensing. Use of satellite imagery and radiance values in synoptic climatology, structure and evolution of atmospheric features, development of video-based hardware for processing of satellite imagery.

Duration/Frequency/Language(s) of instruction: 8 weeks/Annually/ English

Facilities: Direct read-out of polar-orbiting and geostationary satellite imagery, computing facilities

Number of trainees: Between 1 and 8

Entry requirements: Second year university level in mathematics or physics

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Full-time overseas students are charged tuition fees of approx. A\$ 1,500 per year

Monthly room and board and incidental expenses: Approximately A\$ 180

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Remote sensing applications, synoptic climatology

Geographical preference: Southern hemisphere

O. CANBERRA COLLEGE OF ADVANCED EDUCATION

P.O. Box 1, Belconnen, A.C.T. 2616, Australia

Telex: 62267 Tel.: 062 522111 Cable: COLLADVED

Contact person: Mr. W. Wasserman

Principal function(s) of institution: Education

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing, satellite communications

Summary of courses and research activities: Undergraduate and graduate courses in remote sensing. Undergraduate studies in physics, electronics and communications engineering. Optical and radiowave research.

Duration/Frequency/Language(s) of instruction: Semester/annually/ English

Facilities: Satellite earth station and data acquisition equipment, photogrammetric and data processing systems.

Number of trainees: Between 4 and 15

Entry requirements: Normal college entry requirements for degree course

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: College fees

Monthly room and board and incidental expenses: College fees if resident on campus

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Remote sensing and satellite communications technology

Geographical preference: Pacific Basin preferred, but not exclusively

A U S T R I A

A. AUSTRIAN SPACE AGENCY (ASA)

Garnisongasse 7, A-1090 Vienna, Austria

Tel.: 43+1+40381770 Fax: 43+1+4058228

E-mail: a.s.a.@ping.at

Contact person: Prof. Johannes Ortner, Managing Director

Principal function(s) of institution: Administration and coordination

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specialization: basic space sciences

Summary of courses and research activities: ASA is organizing workshops and summer schools together with other space organizations in the fields of space science and its applications.

Duration/Frequency/Language(s) of instruction: 10 days/each year/English

Facilities: Congress House in Alpbach/Tyrol for the Summer School

Number of trainees: about 60

Entry requirements: M.Sc. or Ph.D.

Degree/Diploma/Certificate awarded: Certificate of attendance

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: registration fee (approx. AS 3,500)

Monthly room and board and incidental expenses: N/A

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: About 20 fellowships for Austrian participants are available

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Space science and remote sensing

Geographical preference: None

B. INSTITUT FUR NACHRICHTENTECHNIK UND WELLENAUSBREITUNG

Inffeldgasse 12, A-8010, Graz, Austria

Telex: 31221 Tel.: 316 7061/7441

Contact person: Prof. W. Riedler

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specialization: basic space sciences, remote sensing, satellite communications, satellite meteorology

Summary of courses and research activities:

Courses: Space experiments; results of space research; plasma in space. Radar techniques. Selected topics on communication satellite systems.

Research: Development of space research payloads and experiments data analysis. Development of special radar equipment. Wave propagation at frequencies above 10 GHz, analog and digital data transmission experiments. Development of low-cost meteorological satellite receiver units.

Duration/Frequency/Language(s) of instruction: 1- 2 hrs a week/semester/German

Facilities: Development laboratories, test facilities, computers, radar station, satellite earth station,

Number of trainees: Between 1 and 2

Entry requirements: Bachelor, Master's degree preferred

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: AS 5,000 approx.

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: basic space sciences, remote sensing, satellite communications, satellite meteorology

Geographical preference: None

B A N G L A D E S H

BANGLADESH SPACE RESEARCH AND REMOTE SENSING ORGANIZATION (SPARRSO)

Mohakash Biggyan Bhaban, Agargaon, Sher-e-Bangla Nagar, Dhaka-1207, Bangladesh
Tel.: 880-2-313329, 880-2-327913 Fax: 880-2-813080
Contact person: Dr. A.A. Ziauddin, Chairman, SPARRSO

Principal function(s) of institution: Research, development, training and applications

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specialization: remote sensing, satellite meteorology

Summary of courses and research activities:

Courses: Fundamentals and principles of remote sensing, data interpretation, applications of remote sensing data, sensor systems. Principles of satellite meteorology, interpretation of satellite data for agroclimatology, weather analysis and forecasting, numerical analysis, wether prediction models, satellite oceanography.

Research: Soil/vegetation/atmosphere interaction modelling, vegetation monitoring,, environmental monitoring, flood monitoring, GIS. Study and monitorinf of tropical cyclones, meteorological applications of TIROS TOVS data, SST mapping, flood mapping and damage assessment.

Duration/Frequency/Language(s) of instruction: Variable/Variable/--

Facilities: Advanced meteorological ground station, image processing systems, GIS, cartographic and photo laboratories, library.

Number of trainees: Between 10 and 30

Entry requirements: Science/engineering graduate with professional experience

Degree/Diploma/Certificate awarded: Professional certificate

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Variable

Monthly room and board and incidental expenses: US\$ 100 per day

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: applications of remote sensing to agriculture, water resources, forestry, fisheries, meteorology, earth sciences, oceanography, meteorology

Geographical preference: none

BELGIQUE

A. FACULTES UNIVERSITAIRES NOTRE-DAME DE LA PAIX

61, rue de Bruxelles, 500 Namur, Belgique
Téléphone: 081/724903 Fax: 081/724914
Responsable : Jacques Henrard

Vocation(s) principale(s) de votre établissement: Enseignement et recherche

1. PROGRAMMES DE CULTURE GENERALE ET SCIENTIFIQUES

Area(s) of specializaton: basic space sciences

Description des cours et activités de recherche:

Cours: Astronomie et mécanique céleste

Recherche: Mécanique céleste: détermination d'orbite de satellite artificiel; détermination d'orbite d'objets naturels du système solaire

Durée/Fréquence/Langue(s) d'enseignement: 1 an/annuelle/français

Moyens dont dispose l'établissement pour exécuter les programmes: Salles de cours. Ordinateur

Nombre de participants: Entre 1 et 3

Critères régissant l'admission: Licence en Sciences Mathématiques

Certificats ou diplômes obtenus: --

2. COUT DES PROGRAMMES

Frais de scolarité, manuels et autres matériaux de recherche: --

Frais mensuels de logement et de subsistance et faux frais: --

3. POSSIBILITES DE BOURSES D'ETUDES OU DE PERFECTIONNEMENT

Possibilités de bourses d'études ou de perfectionnement pour des participants étrangers: Néant

Existence d'autres possibilités d'octroi d'une aide financière pour participants étrangers: Néant

4. COLLABORATION AVEC PAYS EN DEVELOPPEMENT: Oui

Domaines qui vous intéressent: Mécanique céleste

Préférence géographique: Aucune

B. UNIVERSITE LIBRE DE BRUXELLES

Avenue de F.D. Roosevelt, 50, B-1050 Bruxelles, Belgique
Téléphone: 32-2-6503141 Fax: 32-2-6503126 Télégraphique: UNILIB
Responsable: M. J.C. Legros, M. M. Paiva

Vocation(s) principale(s) de votre établissement: Enseignement, recherche et développement

1. PROGRAMMES DE CULTURE GENERALE ET SCIENTIFIQUES

Area(s) of specializaton: basic space sciences, remote sensing, satellite communications, satellite meteorology

Description des cours et activités de recherche:

Cours: Physique. Cours de 2ème cycle (licence en géologie).

Recherche: Etude de matériaux en micro-gravité. Etude de la respiration en apesanteur.
Transmission de données.

Durée/Fréquence/Langue(s) d'enseignement: variable/annuelle/français

Moyens dont dispose l'établissement pour exécuter les programmes: Crédits du Ministère de la politique scientifique et de l'Agence spatiale européenne (ASE)

Nombre de participants: variable

Critères régissant l'admission: Diplôme de 1er cycle

Certificats ou diplômes obtenus: --

2. COUT DES PROGRAMMES

Frais de scolarité, manuels et autres matériaux de recherche: --

Frais mensuels de logement et de subsistance et faux frais: --

3. POSSIBILITES DE BOURSES D'ETUDES OU DE PERFECTIONNEMENT

Possibilités de bourses d'études ou de perfectionnement pour des participant étrangers: Néant

Existence d'autres possibilités d'octroi d'une aide financière pour participants étrangers: Bourses et stages ASE et Commission des Communautés Européennes

4. COLLABORATION AVEC PAYS EN DEVELOPPEMENT: Oui

Domaines qui vous intéressent: Les domaines sont les mêmes que les descriptions des activités de recherche

Préférence géographique: Aucune

C. ROYAL MILITARY ACADEMY

Avenue de la Renaissance, 30, 1040 Bruxelles, Belgique

Tel: 32-2-7376120 Fax: 32-2-7376047 E-mail: amuls@elec.rma.ac.be

Contact person: Muls Alain, Mees Wim, Dept. ASGE

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specialization: basic space sciences, remote sensing

Summary of courses and research activities:

Courses: Celestial mechanics, space geodesy, GPS, earth's gravity.

Research: GPS, establishment of GPS reference stations, photogrammetry

Duration/Frequency/Language(s) of instruction: Variable/yearly/French and Dutch

Facilities: GPS equipment, photogrammetric equipment

Number of trainees: Variable

Entry requirements: depends on course type requested

Degree/Diploma/Certificate awarded: Civil engineer (Polytechnic)

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: textbooks

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: May be granted by RMA commander

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes (in consideration)

Specific areas of interest: GPS, cartography, navigation, geodesy

Geographical preference: none

D. UNIVERSITE CATHOLIQUE DE LOUVAIN

Place de l'Université, 1, B-1348 Louvain-la Neuve, Belgique

Tel: 32-10-472111 Telex: 59516/UCLAS

Responsable: Prof. M. Crochet, Rector UCL; Prof. A. Vander Vorst, Laboratoire d'hyperfréquences UCL, Place du Levant, 3, B-1348 Louvain-la Neuve, Belgique, Tel.: 32-10-474020, Fax: 32-10-478705; Prof. J. Wilmet, Laboratoire de télédétection et d'analyse régionale UCL, Place L. Pasteur 3, B-1348 Louvain-la Neuve, Belgique, Tel.: 32-10-472867, Fax: 32-10-472877, E-mail: Wilmet@geog.ucl.ac.be; A. Guissard, Unité de Télécommunication et Télédétection, Département d'électricité UCL, Bâtiment S. Stevin, Place du Levant, 2, B-1348 Louvain-la Neuve, Belgique, Tel.: 32-10-472300, Fax: 32-10-472089, E-mail: guissard@tele.ucl.ac.be

Vocation(s) principale(s) de votre établissement: Enseignement, recherche développement

1. PROGRAMMES DE CULTURE GENERALE ET SCIENTIFIQUES

Area(s) of specializatou: remote sensing, satellite communications, satellite meteorology

Description des cours et activités de recherche: Cours et/ou recherches dans les domaines suivants: Météorologie, dynamique du climat et physique de la couche planétaire télécommunications et télédétection hyperfréquence, télécommunications par satellite et transmission atmosphérique (dans ces deux derniers domaines, uniquement des programmes de recherches). Hyperfréquences, circuits et systèmes de communications, séminaire de télécommunications et d'hyperfréquences, ondes millimétriques et optiques. Télédétection, photointerprétation.

Durée/Fréquence/Langue(s) d'enseignement: Depend des sujets traités et des préalables acquis par l'étudiant/--/Français

Moyens dont dispose l'établissement pour exécuter lesprogrammes: La répartition exacte dépend des sujets. En général, on peut que le travail se répartit environ en trois tiers égaux entre le travail théorique en classe, le travail expérimental et le travail indépendant. L'Université dispose d'une équipe de recherche expérimentée et de moyens expérimentaux adéquats

Nombre de participants: Entre 10 et 20

Critères régissant l'admission: Le niveau dépend des cours choisis. Les critères ne peuvent donc pas être définis en général.

Certificats ou diplômes obtenus: Les diplômes peuvent être, le cas échéant: Ingénieur civil electricien. Ingénieur civil en télécommunications. Certificat de spécialisation. Licence en sciences appliquées. Maitrise. Doctorat.

2. COUT DES PROGRAMMES

Frais de scolarité, manuels et autres matériaux de recherche: On peut considérer que le coût global d'une année d'études s'élève à environ FB 300,000 par an pour un célibataire. Ce montant comprend le droit d'inscription: FB 27,000 et le logement: environ FB 8.000 par mois
Frais mensuels de logement et de subsistance et faux frais: FB 25,000

3. POSSIBILITES DE BOURSES D'ETUDES OU DE PERFECTIONNEMENT

Possibilités de bourses d'études ou de perfectionnement pour des participants étrangers: L'UCL octroie chaque année quelque 35 bourses à des ressortissants du tiers monde qui entament des études de postgraduat. Le montant mensuel de la bourse s'élève à FB 25.500 pour un célibataire.
Existence d'autres possibilités d'octroi d'une aide financière pour participants étrangers: Des bourses peuvent également être obtenues auprès de l'Administration Générale de la coopération au développement à Bruxelles ainsi qu'auprès du Commissariat général aux relations internationales, également situé à Bruxelles, via le poste diplomatique belge à l'étranger. Enfin, des bourses sont disponibles auprès d'organismes internationaux tels que l'UNESCO, la CEE, etc. Les conditions et les montants de ces bourses, variables selon les organismes, peuvent être obtenus auprès de ceux-ci.

4. COLLABORATION AVEC PAYS EN DEVELOPPEMENT: Oui

Domaines qui vous intéressent: Télécommunications spatiales en général, exploitation de stations terrestres, radiomètres, conception de circuits de télécommunications spatiales. Applications de la télédétection à l'étude de l'environnement.

Préférence géographique: Aucune

E. UNIVERSITE DE LIEGE

Place du 20 Août, 7, B-4000 Liège, Belgique

Responsable: Centre de Recherches, IAL Space, Avenue du Pré 1-1 Aily, B-4900 Angleur, Liège, Tel.: 041-676668, Fax: 041-675613; Prof. Jacques C.J. Nihoul, b5, Sart Tilman, B-4000 Liège, Tel: 041-420080; A. Pissart et A. Ozer, Laboratoire de géomorphologie et de géologie du guatenaire, Tel.: 041-440080, ext.257-446-478; Seminaire de géographie, Laboratoire de Photo interprétation, Tel.: 041-665556; Prof. J. Alexandre, Tel.: 041-665556.

Vocation(s) principale(s) de votre établissement: Enseignement, recherche et développement

1. PROGRAMME DE CULTURE GENERALE ET SCIENTIFIQUES

Area(s) of specializaton: basic space sciences, remote sensing, satellite meteorology

Description des cours et activités de recherche:

Cours: 3ème cycle sur détecteurs optoélectroniques. 2ème partie du cours de photo-interprétation dans laquelle on envisage les données du satellite LANDSAT et leur utilisation pour l'aménagement du territoire.

Recherche: Participation à divers projets: TDI, space télescope (FOC), Giotto, Hipparcos. Problèmes traités: radiométrie, tests optiques et optoélectroniques, alignements, conception de systèmes de tests, simulation thermique. Applications de la télédétection à l'étude de l'environnement et au développement de modèles mathématiques pronostiques de l'atmosphère, des mers et des climats. Interprétation des images-satellite et des photos aériennes dans le domaine géologique et géomorphologique. Recherches sur la localisation et l'extension horizontale de la zone de convergence intertropicale: variations temporelles (impact climatique en basse

latitude) et analyse des amas nuageux convectifs à partir de l'imagerie trihoraire de METEOSAT

Durée/Fréquence/Langue(s) d'enseignement: Depend des sujets traités et des préalables acquis par l'étudiant/--/Français

Moyens dont dispose l'établissement pour exécuter les programmes: Laboratoires d'optique et optoélectronique. Installation de traitement optique et digital d'images. Stéréoscopes, chambres claires, densitomètre, laboratoire photographique. Système de réception automatique d'images du satellite METEOSAT.

Nombre de participants: Entre 2 et 20

Critères régissant l'admission: Le niveau dépend des cours choisis.

Certificats ou diplômes obtenus: --

2. COUT DES PROGRAMMES

Frais de scolarité, manuels et autres matériaux de recherche: --

Frais mensuels de logement et de subsistance et faux frais: --

3. POSSIBILITES DE BOURSES D'ETUDES OU DE PERFECTIONNEMENT

Possibilités de bourses d'études ou de perfectionnement pour des participants étrangers:

Existence d'autres possibilités d'octroi d'une aide financière pour participants étrangers:

4. COLLABORATION AVEC PAYS EN DEVELOPPEMENT: Oui

Domaines qui vous intéressent: Optoélectronique spatiale, mais nous devons être financés à cet effet. Télédétection et géologie/géomorphologie. Affectation du sol, croissance urbaine. Interprétation des documents provenant du satellite METEOSAT en relation avec les bulletins et cartes météorologiques et les sondages aérologiques

Préférence géographique: Aucune

F. LABORATOIRE DE GEOGRAPHIE REGIONALE

Centre de télédétection, Université de l'Etat de Gand, Krijgslaan 281, B-9000 Gent, Belgique
Tel.: 091-225715

Responsable: Prof. Dr Luc Daels

Vocation(s) principale(s) de votre établissement: Enseignement, recherche et développement

1. PROGRAMMES DE CULTURE GENERALE ET SCIENTIFIQUES

Description des cours et activités de recherche:

Cours: Cours d'entraînement dans le domaine de la télédétection sur différents niveaux

Activités de recherche: Recherche fondamentale surtout axée sur la méthodologie et l'analyse de l'image. Recherche sur l'interprétation des données des satellites de la deuxième génération. Recherche appliquée: plusieurs chercheurs travaillent sur la problématique de la désertification (études au Soudan, en Iraq et en Egypte). Les données de la télédétection sont analysées d'une manière visuelle et d'une manière digitale. Plusieurs études concernant l'utilisation des sols sont en cours pour l'Afrique centrale.

Durée/Fréquence/Langue(s) d'enseignement: 1 année/46 h par semaine/ anglais, néerlandais

Moyens dont dispose l'établissement pour exécuter les programmes: Instruments d'interprétation, équipement pour le renforcement des images, équipement pour le traitement numérique des données satellites.

Nombre de participants: Entre 2 et 6

Critères régissant l'admission: Niveau universitaire, géographe, géologue, agronome. Niveau A2 (ingénieur technique)

Certificats ou diplômes obtenus: Diplôme M.Sc. (après 2 ans), diplôme d'études approfondies (après 1 an), certificat (après un stage de 6 mois)

2. COUT DES PROGRAMMES

Frais de scolarité, manuels et autres matériaux de recherche: A régler avec l'administration universitaire

Frais mensuels de logement et de subsistance et faux frais: --

3. POSSIBILITES DE BOURSES D'ETUDES OU DE PERFECTIONNEMENT

Possibilités de bourses d'études ou de perfectionnement pour des participants étrangers: Oui. Variable

Existence d'autres possibilités d'octroi d'une aide financière pour participants étrangers: Néant

4. COLLABORATION AVEC PAYS EN DEVELOPPEMENT: Oui

Domaines qui vous intéressent: La télédétection pour l'étude de la désertification (transports des sables, salinisation et formation des croûtes calcaires). L'utilisation des sols (Afrique et la Méditerranée).

Préférence géographique: Soudan, Iraq, Egypte, Zaïre

G. FACULTE DES SCIENCES AGRONOMIQUES DE L'ETAT

B-5800 Gembloux, Belgique

Tel.: 32 (0) 8162287 Fax: 32 (0) 81614544

Responsable: Prof. S. Dautrebande

Vocation(s) principale(s) de votre établissement: Enseignement, recherche et développement

1. PROGRAMMES DE CULTURE GENERALE ET SCIENTIFIQUES

Area(s) of specializaton: remote sensing

Description des cours et activités de recherche: Données de base et orientation agronomique. Exploitation logiciels Teledetection et GIS dans le domaine agronomie-hydrologie (orientation vers Afrique centrale et Afrique sèche, Belgique, Europe).

Durée/Fréquence/Langue(s) d'enseignement: 2 à 4 ans/français (anglais)

Moyens dont dispose établissement pour exécuter les programmes: Logiciels ERDAS et ARCINFO, table de digitalisation, scanner.

Nombre de participants: Entre 1 et 3

Critères régissant l'admission: Graduat en agronomie ou géographie

Certificats ou diplômes obtenus: Certificat d'études approfondies ou doctorat

2. COUT DES PROGRAMMES

Frais de scolarité, manuels et autres matériaux de recherche: --

Frais mensuels de logement et de subsistance et faux frais: --

3. POSSIBILITES DE BOURSES D'ETUDES OU DE PERFECTIONNEMENT

Possibilités de bourses d'études ou de perfectionnement pour des participants étrangers: Neant

Existence d'autres possibilités d'octroi d'une aide financière pour participants étrangers: Néant

4. COLLABORATION AVEC PAYS EN DEVELOPPEMENT: Oui

Domaines qui vous intéressent: Agronomie et hydrologie

Préférence géographique: Afrique centrale et zones du Sahel

B R A Z I L

A. INSTITUTO DE AERONAUTICA E ESPACO

Pca. Mal. Eduardo Gomes, 50, Villa das Acacias 12228-904, Sao José dos Campos, Sao Paulo, Brazil

Tel.: 55-123-414611 Fax: 55-123-412522

Contact person: Director

Principal function(s) of institution: Research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences

Summary of courses and research activities: Applied research on sounding rockets and satellite launchers. Aeronautical research.

Duration/Frequency/Language(s) of instruction: --/--/Portuguese

Facilities: Laboratories of electronics, mechanics, propulsion, guidance and control, aerodynamics, chemistry, testing facilities.

Number of trainees: --

Entry requirements: B.S. in the specific field

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: None

Specific areas of interest: --

Geographical preference: --

B. INSTITUTO TECNOLOGICO DE AERONAUTICA

Pca. Mal. Eduardo Gomes, 50, Villa das Acacias 12228-900, Sao José dos Campos, Sao Paulo, Brazil

Tel.: 55-123-412211 Fax: 55-123-417069

Contact person: Dr. Wagner Sessin (basic space sciences), Prof. Fernando Walter (satellite communications)

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences, satellite communications

Summary of courses and research activities:

Courses: Graduate courses in spatial mechanics. Graduate courses in satellite communications, navigation and surveillance by satellite.

Research: Study of motion and equilibrium of celestial bodies. Satellite communications, navigation and surveillance by satellite

Duration/Frequency/Language(s) of instruction: 2-5 years/every semester/Portuguese

Facilities: Library, computer facilities, astronomical observatory, laboratories.

Number of trainees: Up to 15

Entry requirements: B.Sc. degree in Mathematics, Physics or Engineering (for basic space sciences programme) and B.Sc. degree in Electronics or Aeronautical Engineering (for satellite communications programme)

Degree/Diploma/Certificate awarded: Master of Sciences and Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: free for students with scholarship

Monthly room and board and incidental expenses: \$US 300.00

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Yes. The number depends on funds availability.

Other financial support available for foreign participants: Eventual support from specific agencies such as CNPq, FAPESP, CAPES, UNDP, ICAO, etc.

4. COLLABORATION WITH DEVELOPING COUNTRIES

Specific areas of interest: Control of attitude and orbits of artificial satellites, study of ionosphere. Satellite communications, navigation and surveillance by satellite

Geographical preference: Latin America and Portuguese speaking African countries

C. INSTITUTO NACIONAL DE PESQUISAS ESPACIAIS (INPE)

Caixa Postal 515, 12200 Sao José dos Campos, SP, Brazil

Telex: 123-3530 INPE BR Tel.: 55-0123-229977

Contact persons: Dr. René A. Medrano-Balboa (basic space sciences); Woldir Renato Paradella (remote sensing); Mr. Aydano Barreto Carleial (satellite communications); Dr. Ralf Gielow; Dr. Nelson de Jesus Ferreira (satellite meteorology)

Principal function(s) of institution: Research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializatón: basic space sciences, remote sensing, satellite communications, satellite meteorology

Summary of courses and research activities:

Courses: Master's and Doctoral level graduate courses on Space Geophysics, Astrophysics, Radio Astronomy and Solar Physics. Courses on station operation and image interpretation. Training and Master's level courses in remote sensing. Master's and doctoral level graduate courses in informatics (pattern recognition). Master's and doctoral level graduate courses in meteorology (dynamic meteorology, numeric weather forecasting, synoptic meteorology, satellite meteorology,

micrometeorology, climatology).

Research: High energy astrophysics, radio-astronomy and solar physics, geomagnetism, ionosphere, upper atmosphere, middle and lower atmosphere, nuclear geophysics. Applications of remote sensing to agriculture, cartography, environmental monitoring, forestry and oceanography. Development of automatic image processing systems. On-board telecommunication subsystems (telecommand reception, telemetry transmission, repeating of signals); ground segment telecommunications (main and back-up stations for tracking, telemetry and command operations of satellites; data collection platforms; communications network). Atmospheric and climate simulation, numeric weather forecasting, meteorological satellite reception stations, automatic remote data collection platforms, automatic image processing systems, image compression techniques, real-time dissemination of meteorological satellite imagery and data.

Duration/Frequency/Language(s) of instruction: 2-4 yrs/Annually/Portuguese

Facilities: Laboratories, field work facilities when needed

Number of trainees: up to 25

Entry requirements: B.Sc. for Master's Degree; M.Sc. for Doctoral courses

Degree/Diploma/Certificate awarded: Diplomas for Master's and Doctoral degrees. Certificates for short courses and training

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Graduate course: no tuition. Special arrangements for research materials. Other courses/training: special arrangements

Monthly room and board and incidental expenses: Approx. \$US 300

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: Through Organization of American States (OAS) and other international organizations.

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: basic space sciences, remote sensing, satellite communications, satellite meteorology.

Geographical preference: None

B U L G A R I A

A. BULGARIAN SPACE COORDINATING COMMITTEE

Acad. G. Bonhev Str., bl. 3, Sofia 1113, Bulgaria

Tel.: 359-2-700226 Fax: 359-2-700229

Contact persons: Ivan Kutiev (basic space sciences); Dimitar Mishev (remote sensing); Vladimir Sharov, Institute of Hydrology and Meteorology, Blvd. Lenin, No. 66, Sofia, Bulgaria (satellite meteorology).

Principal function(s) of institution: Research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializatoin: basic space sciences, remote sensing, satellite meteorology

Summary of courses and research activities: Upper ionosphere, middle atmosphere, magnetosphere, cosmic rays. Principles of remote sensing. Sensors and acquisition systems. Image processing and data interpretation. Satellite observations of clouds for synoptic analysis; vertical temperature profiles; analysis of tropical circulation; retrieval of meteorological fields by satellite data.

Duration/Frequency/Language(s) of instruction: 1-3 yrs/every 1-3 yrs/English, Russian

Facilities: Satellite experiments, air- and satelliteborne and ground-based facilities.

Number of trainees: Up to 6

Entry requirements: University education (M.Sc.)

Degree/Diploma/Certificate awarded: Professional certificate and/or Ph.D. degree

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: \$US 900 per month

Monthly room and board and incidental expenses: \$US 1,800

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Scholarship/fellowship opportunities available and organized on request and depending on agreements.

Other financial support available for foreign participants: Other financial aid possibilities exist for foreign participants.

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: As indicated above.

Geographical preference: None

B. SPACE RESEARCH INSTITUTE

6 Moskovska str., Sofia 1000, Bulgaria

Tel.: 359-2-883503 Fax: 359-2-801347

Contact person: P. Nenovsky (basic space sciences); Dr. A. Stoimenov (remote sensing); Mr. B. Madjarov (satellite meteorology).

Principal function(s) of institution: Research, development and training

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences, remote sensing, satellite meteorology

Summary of courses and research activities: Astrophysics, ionosphere, aurora, optical observations, magnetosphere, material sciences, satellite navigation systems, space biology, electronics. Remote sensing applications. Satellite tracking, ground station, mapping. Data acquisition and processing.

Duration/Frequency/Language(s) of instruction: --

Facilities: Computer facilities, laboratory equipment, image processing facilities.

Number of trainees: between 1 and 3

Entry requirements: Academic diploma

Degree/Diploma/Certificate awarded: Should be specified for each particular case.

2. COST OF PROGRAMMES

Depends on each particular case.

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Yes

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Above-mentioned areas of research

Geographical preference: Balkan region

C H A D

A. ECOLE NATIONALE DES TRAVAUX PUBLICS

B. P. Ndjamen, Chad
Telex: 5284 KD MINTP Tel.: 514971
Contact person: --

Principal function(s) of institution: Training, education

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences

Summary of courses and research activities: Basic space sciences

Duration/Frequency/Language(s) of instruction: --/semester/--

Facilities: --

Number of trainees: --

Entry requirements: --

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: None

Specific areas of interest: --

Geographical preference: --

B. EFATA

DREM BP 429 N'Djamena
Telex: PNUD Tel.: 5130081, 513043 Cable: PNUD
Contact person:

Principal function(s) of institution: La formation temporaire de 60 Agents un Agrométéorologie.

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: satellite meteorology

Summary of courses and research activities: ce sont des cours de météorologie et d'agrométéorologie des pensés aux Agents Techniques en Agrométéorologie. Cours météorologique (c1IX OMM)

Duration/Frequency/Language(s) of instruction: 2 ans/trimestre/Français

Facilities: Pas d'équipement particulier, Mais on prête des appareils de diapositif et de projection pour utilisation

Number of trainees: 20-23

Entry requirements: Niveau BPCT

Degree/Diploma/Certificate awarded:

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material:

Monthly room and board and incidental expenses:

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: None

Specific areas of interest: --

Geographical preference: --

C H I L E

UNIVERSIDAD DE CHILE, CENTRO DE ESTUDIOS ESPACIALES

Arturo Prat 1171, Santiago, Chile

Tel.: 56-2-721816 Fax: 56-2-8441003 E-mail: edodiaz@cecuxl.cec.uchile.cl

Contact person: Eduardo Diaz

Principal function(s) of institution: Training, research, satellite data applications

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specialization: basic space sciences, remote sensing, satellite communications, satellite meteorology

Summary of courses and research activities:

Courses: Basic and advanced remote sensing. Basic and advanced GIS.

Research: Applications of remote sensing to environment, oceanography, fisheries, forestry, agriculture. Research in acquisition and processing of satellite data (receiving stations, antennas, processing systems), research in agrometeorology.

Duration/Frequency/Language(s) of instruction: 2 weeks/3 per year/ Spanish

Facilities: Receiving stations, data processing systems, laboratories

Number of trainees: up to 15

Entry requirements: Degree in Engineering

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: US\$ 500

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Above areas

Geographical preference: South America

C H I N A

SPACE SCIENCE AND TECHNOLOGY CENTER

Chinese Academy of Science, P.O. Box 8701, Beijing, China

Tel.: 285776

Contact person: Prof. Zhi-gang Lu

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences

Summary of courses and research activities: Scientific balloons (100,000 m), sounding rockets (solid fuel), instruments suitable for International Solar Terrestrial Physics Programme (ISTP), magnetosphere and plasma physics.

Duration/Frequency/Language(s) of instruction: --/--/--

Facilities:--

Number of trainees: --

Entry requirements: --

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Basic space sciences

Geographical preference: --

C O L O M B I A

A. EMPRESA NACIONAL DE TELECOMUNICACIONES (TELECOM)

Calle 23, No. 13-49, Piso 13, Bogotá, D.E., Colombia

Telex: 44280 Teléfono: 2420660

Persona a contactar: Victoria Kairuz Marquez, Transversal 49, No. 105-84, Bogotá, Colombia

Funciones principales de la institución: Prestar servicios de telecomunicaciones nacionales e internacionales

1. PROGRAMAS ACADÉMICOS Y CIENTÍFICOS

Area(s) of specializaton: satellite communications

Lista de cursos v actividades de investigación: Cursos con el fin de analizar el comportamiento general de enlaces satelitales y estaciones terrenas para la correcta operación y mantenimiento de estas últimas

Duración/Frecuencia/Idioma(s) de enseñanza: 105 horas/semestral/español

Tipo de servicios o instalaciones: Telecom cuenta con la División de Capacitación ITEC Número de participantes: Entre 10 y 20

Calificaciones académicas (mínimas) requeridas: Conocimientos básicos

Certificados o diplomas extendidos por la institución: Certificados

2. COSTO DE LOS PROGRAMAS

Costo de los cursos, de los libros de texto y de los materiales de investigación afines: --

Gastos mensuales de alojamiento y manutención y gastos menudos: --

3. DISPONIBILIDAD DE BECAS

Disponibilidad de becas para participantes extranjeros: No

Otra posibilidades de ayuda financiera para participantes extranjeros: El curso para extranjeros es gratuito

4. COLABORACION CON LOS PAISES EN DESARROLLO: Si

Esfera de interés: Comunicaciones por satélite

Region geográfica determinada: Actualmente se adelanta el proyecto denominado CONDOR, con el cual los países del Pacto Andino compartirán un satélite propio.

B. INSTITUTO GEOGRAFICO "AGUSTIN CODAZZI", CENTRO DE INVESTIGACION EN PERCEPCION REMOTA (CIAF)

Carrera 30 No. 48-51, Santafé de Bogotá, Colombia

Tel.: 571-3681057 Fax: 571-3680950 E-mail: IGAC@Colcig3.Colciencias.gov.Co

Contact person: Hugo Villota

Principal function(s) of institution: Education, training, research and advisory services

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specialization: basic space sciences, remote sensing

Summary of courses and research activities:

Courses: Postgraduate course in GIS and remote sensing. Short courses on photogrammetry, computer cartography, photointerpretation and remote sensing applications.

Research: Remote sensing and GIS applications to earth sciences.

Duration/Frequency/Language(s) of instruction: Postgraduate: 32 weeks/yearly/Spanish;

Short courses: 4-12 weeks/ yearly/Spanish.

Facilities: Photogrammetric laboratory, photointerpretation laboratory, five microcomputer rooms and two workstation rooms with software for digital image processing and GIS, soil laboratory, geographic information centre, library.

Number of trainees: Between 10 and 20 students per course.

Entry requirements: B.Sc. in the corresponding subject or an equivalent

Degree/Diploma/Certificate awarded: Postgraduate diploma in GIS. Certificates awarded for short courses

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Postgraduate programmes-US\$ 3,050; Short courses: between US\$ 300 and US\$ 900, depending on length.

Monthly room and board and incidental expenses: US\$ 650

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Postgraduate programmes -12 per year; some short courses - 5 to 10 per year.

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Photointerpretation, remote sensing applications, development of software for digital data analysis, GIS and computer cartography

Geographical preference: Latin America and Caribbean

DENMARK

A. TECHNICAL UNIVERSITY OF DENMARK, ELECTROMAGNETICS INSTITUTE

Technical University of Denmark, Denmark
Tel.: 45-42-881444 Fax: 45-45-931634
Contact person: Prof. P. Gudmandsen

Principal function(s) of institution: Education, research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing

Summary of courses and research activities:

Courses: Remote sensing course designed for electronic engineering students with emphasis on the basic physics and principles of instrument design. The major part of the course is related to passive and active microwave remote sensing. It also includes a number of case studies of actual satellite Earth Observation.

Research: Development of methods of satellite data analysis applied to polar and sub-polar ocean studies, to forestry and agriculture studies and monitoring, to environmental studies in coastal waters, with emphasis on passive and active microwave techniques.

Duration/Frequency/Language(s) of instruction: Postgraduate: 14 weeks/annually/Danish (English for foreign students)

Facilities: Digital image processing systems with workstations, tape drives, disk drives and other peripheral equipment. Digital film recorder.

Number of trainees: Depends on funding possibilities

Entry requirements: B.Sc.

Degree/Diploma/Certificate awarded: Statement issued by the Institute

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: About DKK 500; 65 ECU

Monthly room and board and incidental expenses: About DKK 5,000; 650 ECU

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: Yes

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Above-mentioned areas

Geographical preference: None

B. UNIVERSITY OF COPENHAGEN, INSTITUTE OF GEOGRAPHY

Oster Voldgade 10, DK-1350 Copenhagen K, Denmark
Tel.: 4533132105 Fax: 45-33-148105
Contact persons: Mr. K. Rasmussen, Mr. Henrik Sogaard

Principal function(s) of institution: Education and Research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing, satellite meteorology

Summary of courses and research activities:

Courses: The physical basis, technology and agricultural and environmental applications of optical remote sensing. Satellite data processing. The use of satellite data for estimating the surface energy balance; monitoring water balance/soil moisture and evapotranspiration using combined thermal, IR and visible satellite data.

Research: Mapping and monitoring of agricultural land-use and environmental conditions; monitoring of natural vegetation and crop development; monitoring of agrometeorological parameters, such as rainfall, temperature and actual evapotranspiration; urban land use mapping.

Duration/Frequency/Language(s) of instruction: 12 weeks/every autumn/English (only for foreign students)

Facilities: The institute has 10 satellite image processing systems, all PC-based and equipped with locally developed software, CHIPS. Of these, 3 are located in the image processing lab with open access for students and trainees. In addition we are equipped with a number of relevant peripherals, incl. equipment for GIS-type work. Radiometers a.s.o. for field measurements and a large amount of agromet sensors are available.

Number of trainees: Between 4 and 10

Entry requirements: B.Sc.

Degree/Diploma/Certificate awarded: Certificates are awarded after each course

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: US\$ 500/150/150

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: For trainees from developing countries scholarships are in some cases available through DANIDA.

Other financial support available for foreign participants: Yes. According to official exchange programmes.

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: As indicated above

Geographical preference: Africa

ECUADOR

CLIRSEN/COTOPAXI GROUND STATION

Seniérges s/n y Gral. Paz y Miño, Edif. IGM, 4to. piso, Quito, Ecuador

Tel.: 593-549-472, 593-581-063 Fax: 593-2-581-066

Contact persons: Mr. Edgar Peñaherrera, Mr. Fernan Sandoval

Principal function(s) of institution: Receiving, recording and processing satellite data and forming the national natural resources inventory

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing, satellite meteorology

Summary of courses and research activities: Digital data processing, spectral measurements. Remote sensing applications. Satellite meteorology math algorithms to solve atmospheric problems in receiving satellite information over equatorial zones. (These courses are not given on a regular basis. They are only given under institutional needs.)

Duration/Frequency/Language(s) of instruction: --

Facilities: Cotopaxi ground station capable of receiving Landsat, SPOT, ERS and GOES data. Specific hardware and software, including ERDAS, Earthview, Microid, Meridian, Sigren, SARPS, GIS, GICS.

Number of trainees: Between 5 and 25

Entry requirements: Specialists in natural resource management and environmental monitoring.

Degree/Diploma/Certificate awarded: Only participation diplomas/certificates

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: National courses are free, and international courses are about US\$ 150

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: Yes

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Remote sensing

Geographical preference: Central and South American countries

EGYPT

NATIONAL AUTHORITY FOR REMOTE SENSING AND SPACE SCIENCES

Academy of Scientific Research and Technology, 101 Kasr El-Eini, Cairo, Egypt

Tel.: 3557110, 3540173 Fax: 3557110

Contact person: Prof. Dr. Hussein A. Younes

Principal function(s) of institution: Research and development, image production, training

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing

Summary of courses and research activities: Principles of remote sensing. Applications of remote sensing to geology, geomorphology, mineral resources, water, soil, natural vegetation, cultivation, landuse, etc. Image processing and production. GIS.

Duration/Frequency/Language(s) of instruction: 1-2 months/annually/English

Facilities: Publications, literature notes, facilities for field trips, teaching staff

Number of trainees: between 10 and 20

Entry requirements: B.Sc. in geology, engineering, agriculture

Degree/Diploma/Certificate awarded: Certificate of attendance

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: According to duration and the content of the particular programme: 1,000 - 3,000

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Software development and applications, joint research projects

Geographical preference: Arab and African countries

FINLAND

A. UNIVERSITY OF HELSINKI, OBSERVATORY AND ASTROPHYSICS LABORATORY

Tähtitorninmäki, SF-00130 Helsinki

Tel.: 358-0-1912940

Fax: 358-0-1912952

Contact person: Dr. Osmi Vilhu

Principal function(s) of institution: Research and education

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences

Summary of courses and research activities:

Courses: Elementary and Advanced courses in major fields of Astronomy and Space Astrophysics

Research: Planetary sciences, solar and stellar astronomy, interstellar matter and nebulae, radio-IR-optical-UV-X-ray astronomy

Duration/Frequency/Language(s) of instruction: 3.5 mos. every semester/Annually/Finnish and English

Facilities: Computers, data handling systems

Number of trainees: up to 2

Entry requirements: M.Sc. (Ph.D. preferred)

Degree/Diploma/Certificate awarded: M.Sc., Phil. Lic. and Ph.D. can be awarded with major topic in Astronomy

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: US\$1,000/year/person

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: 1

Other financial support available for foreign participants: Yes

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Planetary, radio and infrared, UV and X-ray astronomy

Geographical preference: None

B. UNIVERSITY OF OULU, DEPARTMENT OF PHYSICS

SF-90570 Oulu, Finland

Tel.: 358-81-352031

Fax: 981-81-353259

Contact person: Prof. P. Tanskanen or Lasse Jalonen

Principal function(s) of institution: Education and Research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences

Summary of courses and research activities:

Courses: Auroral physics; Ionospheric and Magnetospheric Physics; Cosmic Ray Physics-Solar Modulation; Use of Incoherent Scatter Technique for ionospheric studies; Magnetic pulsations
Research: Satellite studies of magnetosphere/ionosphere coupling; Satellite studies of solar wind interaction with the magnetosphere

Duration/Frequency/Language(s) of instruction: 2 hours a week/every semester/Finnish and English

Facilities: Good computer facilities; high standards and highly qualified personnel

Number of trainees: up to 3

Entry requirements: M.Sc. or B.Sc.degree

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: 3000 FIM

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: Yes

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Magnetosphere/ionosphere research

Geographical preference: --

C. HELSINKI UNIVERSITY OF TECHNOLOGY

Otakaari 5A, SF-02150 Espoo, Finland

Contact persons: Mr. Martti Hallikainen, Laboratory Of Space Technology, Tel.: 358-0-4512371; Dr. Antti Räisänen, Radio Laboratory, Tel.: 358-0-4512241, Fax: 358-0-460224; Prof. Einari Kilpelä, Institute Of Photogrammetry and Remote Sensing, Otakaari 1, 02150 Espoo, Tel.: 358-0-4513900.

Principal function(s) of institution: Education and Research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences, remote sensing, satellite communications, satellite meteorology

Summary of courses and research activities:

Courses: Space physics, radio astronomy, fundamentals of astronomy and radio astronomy, antennas, radiometers, spectrometers and observation techniques. Remote sensing, environmental electronics. Fundamentals of photogrammetry and photointerpretation, Photogrammetry and photointerpretation. Photogrammetric equipment and its calibration. Photography in photogrammetry, processing techniques in photogrammetric mapping. Satellite communications. Propagation of radio waves: propagation in atmosphere and near space, scattering in various surfaces and obstacles.

Research: Continuum and spectral line astronomy at millimeter waves, development of low-noise receivers, mixers and amplifiers at millimeter waves. Radar mapping of Mars. Development of

radiometers and radars. Remote sensing of soil, snow, ice. Mapping of atmosphere ozone. Interpretation of satellite data. Digital image processing in photogrammetry. Recursive least squares estimation in photogrammetry. Propagation from satellite to Earth at millimeterwaves; measurement of attenuation due to atmosphere, rain, etc.

Duration/Frequency/Language(s) of instruction: Variable/annually/Finish (English if necessary).

Facilities: Precision 14 m radio telescope antenna. Millimeter-wave receivers and measurement equipment. Airborne radiometers and radars. Image processing systems. Ground truth equipment. Various mapping and photogrammetric equipment. Radio research station, receivers.

Number of trainees: Up to 10

Entry requirements: B.Sc.

Degree/Diploma/Certificate awarded: M.Sc. and Ph.D in Space Technology, Licentiate in Technology.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Nominal fees

Monthly room and board and incidental expenses: Approximately FIM 2,500 (in dormitory)

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: As indicated above

Geographical preference: None

D. UNIVERSITY OF TURKU, SPACE RESEARCH LABORATORY

Tykistokatu 4 A, 20520 Turku, Finland

Tel.: 358-21-6338734 Fax: 358-21-503060

Contact person: Jarmo Torsti

Principal function(s) of institution: Research and education

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences

Summary of courses and research activities:

Courses: Solar Plasma; Solar Wind; Cosmic Radiation; Cosmology

Research: Solar Physics; Energetic Particle; Cosmic Rays

Duration/Frequency/Language(s) of instruction: Semester/Annually/Finnish and English

Facilities: Laboratory (incl. cleanroom) for design and assembly of instruments

Number of trainees: between 1 and 4

Entry requirements: B.A.

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: None

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES:

Specific areas of interest: Yes

Geographical preference: None

E. FINNISH METEOROLOGICAL INSTITUTE, DEPARTMENT OF GEOPHYSICS

P.O. Box 503, SF-00101, Helsinki, Finland

Tel.: 358-019291

Contact person: Hannu Kosleinen

Principal function(s) of institution: Research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializatoin: basic space sciences

Summary of courses and research activities: Research in Space plasma physics; Magnetospheric physics; Planetary atmospheres; Solar wind physics; Stratospheric ozone research

Duration/Frequency/Language(s) of instruction: --

Facilities: Modern computing facilities, electronics laboratory

Number of trainees: up to 3

Entry requirements: M.Sc. (highest grades)

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants:--

Other financial support available for foreign participants: Yes

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: All research are collaborative

Geographical preference: --

F. TECHNICAL RESEARCH CENTRE OF FINLAND (VTT)

P.O. Box 1303, FIN-02044 VTT, Finland

Tel.: 358-0-4561 Fax: 358-0-4553349 E-mail: tuomas.hame@vtt.fi

Contact person: Tuomas Hame

Principal function(s) of institution: Research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences, remote sensing, satellite communications

Summary of research activities: Scientific instruments for space missions; development of technologies for instruments and platforms. Data processing; image interpretation. Remote sensing applications to forestry and water resources. SAR and video techniques. Imaging spectrometry.

Duration/Frequency/Language(s) of instruction: --

Facilities: --

Number of trainees: up to 2

Entry requirements: Undergraduate

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: Yes. Salary can be paid for the exchange researchers

4. COLLABORATION WITH DEVELOPING COUNTRIES: None

Specific areas of interest: --

Geographical preference: --

G. TAMPERE UNIVERSITY OF TECHNOLOGY

P.O.B. 527, 33101 Tampere, Finland

Tel.: 358-31-162111

Contact person: Leo Sintonen

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: satellite communications

Summary of courses and research activities: Satellite computer communications. This research activity is at the beginning. No courses on that topic are available

Duration/Frequency/Language(s) of instruction: --/--/--

Facilities: The research is mainly theoretical

Number of trainees: --

Entry requirements: M.Sc. degree

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Satellite computer communications

Geographical preference: None

FRANCE

GROUPEMENT POUR LE DEVELOPPEMENT DE LA TELEDETECTION AEROSPATIALE (GDTA)

18, Avenue Edouard Belin 31055, Toulouse Cedex, France
Tel.: 33-61274290 Fax: 33-61281498 E-mail: jpp@venus.gdta.cnes.fr
Contact person: Dr. Jean-Pierre Paris

Principal function(s) of institution: Education and training in remote sensing and GIS

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing

Summary of courses and research activities: A variety of training programmes (CETEL, SITEL, SPOT, RSC, GIS, etc.) in optical and microwave remote sensing methodology and applications, GIS, space cartography, inventory and management of natural resources.

Duration/Frequency/Language(s) of instruction: from 1 week to 10 month (CETEL)/annually/
French, English or Spanish

Facilities: Digital and analog image processing systems, computing and workstation facilities with GIS software (ERDAS, ARC INFO), compyter-aided photointerpretation (CAPI) facilities, documentation centre

Number of trainees: Between 6 and 30

Entry requirements: Licence level or higher

Degree/Diploma/Certificate awarded: CETEL - leads to a French university diploma (DESS) or specialist certificate. Other programmes - certificates.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: From FF 6,000 to FF 120,600 (CETEL) depending on programme

Monthly room and board and incidental expenses: approx. FF 6,000 per month

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Not directly, but there are possibilities to arrange fellowships through the Ministry of Foreign Affairs or through European programmes

Other financial support available for foreign participants: through French organizations

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: All the application fields of remote sensing training centres

Geographical preference: None

G E R M A N Y

A. DEUTSCHE FORSCHUNGSANSTALT FUR LUFT- UND RAUMFAHRT e.V. (DLR)
(German Aerospace Research Establishment)

P.O. Box 90 60 50, 5000 Köln 90, Federal Republic of Germany
Tel.: 49(0)2203-6010 Fax: 02203-67310
Contact person: Prof. Dr. Walter Kroll, Chairman

Principal function(s) of institution: Aeronautical and space research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializatoin: basic space sciences, remote sensing, satellite communications, satellite meteorology

Summary of courses and research activities:

Courses: Microgravity Summer School (German Lectures).

Research: Material and life sciences under microgravity conditions, planetary sciences. Sensor technology in optical and microwave remote sensing and data processing. Communications and navigation using space systems and technology. Remote sensing of the atmosphere.

Duration/Frequency/Language(s) of instruction: --/--/--

Facilities: Laboratories, research aircraft, simulation-, training- and user support facilities, mobile field testing equipment. Digital and analog image processing facilities.

Number of trainees: Depends on number and scope of joint projects

Entry requirements: M.Sc. or Ph.D.

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: N/A

Monthly room and board and incidental expenses: N/A

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: On a case-by-case basis, financial assistance for living expenses may be available

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Any area where a foreign partner will make a substantial (not necessarily financial) contribution to a joint project of common interest

Geographical preference: --

B. GERMAN FOUNDATION FOR INTERNATIONAL DEVELOPMENT, FOOD AND AGRICULTURE DEVELOPMENT CENTER

Wielingerstr. 52, P.O. Box 20, D-8133 Feldafing, Germany
Tel.: 49-8157-38120
Contact person: Olaf Anders, DSE Forestry Section

Principal function(s) of institution: Training (individual and courses)

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing

Summary of courses and research activities: Applications of remote sensing and GIS to tropical forests management

Duration/Frequency/Language(s) of instruction: 4 weeks/annually/English

Facilities: Training facilities. Electronic equipment.y

Number of trainees: between 20 and 25

Entry requirements: B.Sc. and 3 years of practical experience.

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: information upon request

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Yes, 25 a year.

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES:

Specific areas of interest: Above-mentioned areas

Geographical preference: ASEAN region, South-east Asia

G H A N A

POSTS AND TELECOMMUNICATIONS TRAINING SCHOOL

Posts and Telecommunications Corporation
Accra-North, Ghana
Telex: 2752 PTTS. GH. Tel.: 226766/221412
Contact person:

Principal function(s) of institution: Training

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: satellite communications

Summary of courses and research activities: Satellite Equipment, Ground Stations Equipment

Duration/Frequency/Language(s) of instruction: 2+2 years/yearly/English

Facilities: Training satellite earth station under construction, other equipment to be provided.

Number of trainees: Between 6 and 10.

Entry requirements: B.Sc. or Part II C. & G.

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Equipment sharing, exchange of lecturers

Geographical preference: Yes. Proximity essential

G R E E C E

A. UNIVERSITY OF ATHENS, REMOTE SENSING LABORATORY

P.O. Box 64022, Athens 157.01, Greece
Tel.: 30-1-7284299 Fax: 30-1-3602145
Contact person:

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences, remote sensing

Summary of courses and research activities: Comparative planetology. Geodesy and remote sensing satellites. GIS. Digital analysis of remote sensing data. Remote sensing applications in geodesy, oceanography, climatology, geomorphology, and structural geology.

Duration/Frequency/Language(s) of instruction: 1 semester/Annually/Greek

Facilities: Data processing systems

Number of trainees: Between 5 and 30

Entry requirements: Must be a senior student of the University

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Free for registered University students

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Yes. 6 available.

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: --

Geographical preference: --

B. EUGENIDES FOUNDATION, SPACE RESEARCH DEPARTMENT

387 Syngrou Ave., GR-175 64, Athens, Greece
Tel.: 30-1-9411181 Fax: 30-1-9417372
Contact person: Mr. C. Nestoridis

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences, satellite communications

Summary of courses and research activities: General study of space applications, satellite communications, navigation and remote sensing

Duration/Frequency/Language(s) of instruction: 1 week/6 per year/Greek

Facilities: Graphics system Amiga 2000; METEOSAT ground station; extensive science library

Number of trainees: Between 5 and 30

Entry requirements: B.Sc.

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: None

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Satellite communications, navigation and remote sensing

Geographical preference: --

C. INSTITUTE OF GEOLOGY AND MINERAL EXPLORATION

70 Messoghion St., 11527 Athens, Greece

Tel.: 7798412

Contact persons: J. Karfakis, Dr. P. Tsombos, Dr. M. Stefouli

Principal function(s) of institution: Research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing

Research activities in Remote Sensing: Remote sensing applications to geology, image interpretation, geographic information system; these activities could not be offered as a training course, but only through specific collaborative projects

Duration/Frequency/Language(s) of instruction: --

Facilities: Remote sensing interpretation equipment, computer, collection of photographs and LANDSAT images

Number of trainees: --

Entry requirements: --

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes
Specific areas of interest: --
Geographical preference: None

D. OTE TELECOMMUNICATION TRAINING CENTRE

23, Davaki Street, GR 176-72 Kallithea, Athens, Greece
Tel.: 9587299
Contact person: Mr. K. Kalitsis

Principal function(s) of institution: Training

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: satellite communications

Summary of courses and research activities: Training and specialized courses for engineers and technicians on various subjects of satellite communications such as operation and maintenance techniques of earth stations, INMARSAT installations, etc.

Duration/Frequency/Language(s) of instruction: Variable/Occasionally/Greek

Facilities: Classroom audiovisual facilities, earth station

Number of trainees: Up to 25

Entry requirements: Higher level, mainly in electronics

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Varies depending on course

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: About 10 fellowships are available

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: None

Specific areas of interest: N/A

Geographical preference: N/A

I N D I A

A. INDIAN SPACE RESEARCH ORGANIZATION (ISRO), DEPARTMENT OF SPACE

Antariksh Bhavan, New BEL Road, Bangalore 560094, India
Tel.: 91-80-3416356 Fax: 91-80-3415298
Contact persons: Mr. M. G. Chandrasekhar, Mr. K. Narayanan

Principal function(s) of institution: Research and development in space sciences, technology and applications. Execution of the national space programmes at its establishments.

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences, remote sensing, satellite communications, satellite meteorology

Summary of courses and research activities:

Courses: Fundamental aspects of remote sensing; data acquisition and processing, analysis, interpretation and information extraction for resources management. Digital image processing, including multispectral interactive data analysis system. Development of space and ground hardware for Satellite Communications and applications, specialized applications involving digital communication techniques, rural telecommunication systems, emergency communications; data collection and relay. Forecasting of major weather systems such as tropical cyclones, deep depressions using INSAT data. Research activities being pursued in utilising the cloud wind and temperature information available from INSAT in studying the monsoon performance and forecasting the associated rainfall.

Research: X-ray, infrared, gamma-ray astronomy; solar terrestrial programme; atmospheric dynamics using MST radar; satellite missions for space sciences; studies in aeronomy and space astronomy. Use of GIS and digital terrain modelling techniques to develop a sustainable management of natural resources. Development of interpretation/analysis aid tools, both digital and visual. Satellite switched TDMA, Ku band payload, advanced earth station technology, VSAT technology, satellite navigation and radio determination. Weather related studies using INSAT data for better forecasting of monsoon and synoptic system such as cyclone and depressions. Preliminary one dimensional and two dimensional models developed for climate change studies proposed to enhance the same to global circulation models altered to suit the India subcontinent.

Duration/Frequency/Language(s) of instruction: 1.5 - 2 years/Annually/English

Facilities: Observation time on astronomy telescopes may be provided to trainees. Payloads on sounding rockets could be offered to researchers from developing countries. Remote sensing and space communications research facilities.

Number of trainees: Up to 10

Entry requirements: B.Sc. or M.Sc., depending on programme

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: No course fee is charged for participants covered under "Sharing of Experience in Space" (SHARES) programme.

Monthly room and board and incidental expenses: Nominal rate charged for accommodation.

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: Yes. Financial support ranges from Rs.3000 to Rs.4500 per month for participants depending on their background and experience.

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Space sciences, remote sensing, satellite communications, satellite meteorology

Geographical preference: --

B. TATA INSTITUTE OF FUNDAMENTAL RESEARCH

Homi Bhabha Road, Bombay 400005 India

Tel.: 219111 Cable: ZETESIS

Contact person: Prof. Dr. R.R. Daniel, Department of Physics

Principal function(s) of institution: Doctoral training and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences

Summary of courses and research activities:

Courses: Quantum mechanics; classical mechanics; statistical mechanics; nuclear physics; solid state physics; astronomy and astrophysics

Research: X-ray astronomy using balloons; infra-red astronomy-near and far IR; radio astronomy; cosmic rays; theoretical astrophysics and cosmology

Duration/Frequency/Language(s) of instruction: Each course of 30 lectures/ Annually/English

Facilities: Adequate research facilities to support programmes listed

Number of trainees: Up to 2

Entry requirements: M.Sc. in Physics or Astronomy

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: Rs 2,000 minimum

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: 2-3 under the COSPAR programme of promoting space science in developing countries; usually for short-term visits less than 6 months

Other financial support available for foreign participants: Under bilateral agreements; agreements between science academies

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: As listed above

Geographical preference: None

C. INDIAN INSTITUTE OF REMOTE SENSING

No. 4 Kalidas Road, Dehra Dun, 248001, India
Tel.: 91-135- 24583 Fax: 91-135-25686
Contact person: Prof. S.K. Bhan, Dean, IIRS

Principal function(s) of institution: Training and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing

Summary of courses and research activities:

Courses: A variety of training programmes in remote sensing methodology and applications, GIS, photogrammetry, landuse and urban planning, inventory and management of natural resources.

Research: User-defined research in remote sensing and GIS applications. Research within framework of IGBP.

Duration/Frequency/Language(s) of instruction: from four days to ten months/One per year for all courses/English

Facilities: Photo processing laboratory; photogrammetry and cartographic laboratory; image interpretation laboratory; remote sensing ground truth laboratory; digital data analysis laboratory; soil laboratory; geosciences, forestry and ecology, marine science, water resources facilities; library

Number of trainees: between 5 and 12

Entry requirements: Decision maker, postgraduate students, B.Sc. or M.Sc., depending on particular training programme

Degree/Diploma/Certificate awarded: Postgraduate diploma for 10 months training programmes; certificate for others.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: varies for different courses from US\$ 200 to US\$ 3,000 (for foreign participants)

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Foreign participants can be provided with fellowship under "Sharing of Experience in Space" (SHARES) programme through the Government of India, Department of Space

Other financial support available for foreign participants: Yes

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Training, research and consultancy in remote sensing applications

Geographical preference: None

D. NATIONAL REMOTE SENSING AGENCY (NRSA)

Balanagar, Hyderabad 500-037, India
Tel.: 91-40-279572 to 76 Fax: 91-40-278648 E-mail: bld%nrnsa-hyd@uunet.in
Contact person: Director

Principal function(s) of institution: Remote sensing data acquisition, data dissemination, training

I. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializatoin: remote sensing

Summary of courses and research activities:

Courses: Regular and user-requested training courses on remote sensing technology and applications.

Research: Spectral signature collection and analysis from various landuse/landcover features in IRS/Landsat TM spectral bands. District spatial scale studies using NOAA/AVHRR NDUI/RUI data and agrometeorology. NDUI/RUI characteristics of crops over crop growth cycle. Land surface temperature and albedo estimation. Spatial integration techniques for Global Studies. Digital image processing and pattern recognition.

Duration/Frequency/Language(s) of instruction: from 1 to 10 weeks/--/English

Facilities: Data processing systems for large volume of data handling. Photo processing and image interpretation laboratories. Image analysis systems (ERDAS, ARIES, ARC/INFO).

Number of trainees: Between 8 and 16

Entry requirement: A degree in basic science/engineering/geography

Degree/Diploma/Certificate awarded: Certificate of participation

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: from US\$ 100 to US\$ 900, depending on training programme

Monthly room and board and incidental expenses: approx. US\$ 450 per month

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Possibility under the SHARE programme

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: None

Specific areas of interest: --

Geographical preference: --

E. SPACE APPLICATIONS CENTRE (SAC)

SAC P.O., Jodhpur Tekra, Ahmedabad 380 053, India

Tel.: 446099/447043

Contact person: Director, Space Applications Centre (SAC)

Principal function(s) of institution: Training, education, research and development, specific projects with users

I. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializatoin: remote sensing, satellite communications, satellite meteorology

Summary of courses and research activities:

Courses: Regular training courses for Indian users on remote sensing every three months. Courses cover all major applications areas followed by on the job training in agriculture, crop forecasting, forestry, water resources, coastal processes, water quality, crop stress detection and crop yield modelling; these also cover geomorphology, thematic mapping, digital image processing, geology, ground water. Specialized courses on space communications are organized periodically. Typical courses include both formal instruction and on-the-job training. Training to individuals in selected fields of satellite communication for longer duration (up to 6 months) is possible.

Research: Land resources, marine resources, oceanography, use of microwave sensor data, geographic information systems, digital cartography. Satellite earth station technology, data communication, communication techniques, systems engineering, operations training. Middle atmosphere, monsoon dynamics, cyclone genesis, retrieval of meteorological parameters from satellite data; study of main layer depth related to oceans; use of microwave sensor in meteorology.

Duration/Frequency/Language(s) of instruction: up to 12 weeks/up to 4 courses per year/English

Facilities: Fully equipped photointerpretation laboratories, facilities for ground truth and spectral signature collection, airborne sensors, image processing facility. Experimental satellite earth stations, research and development laboratories and production facilities for earth station and satellite payload equipment; integration and test facilities; access to large general purpose computers (DEC-10 at Ahmedabad and Cyber at Delhi).

Number of trainees: Between 1 and 15

Entry requirement: Graduate or post-graduate degree in physics, mathematics, remote sensing, electronics/communication or experienced engineers from relevant field.

Degree/Diploma/Certificate awarded: Certificate of participation

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Approx. US\$ 500 per month

Monthly room and board and incidental expenses: US\$ 250

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Between 8 and 10

Other financial support available for foreign participants: Living expenses, tuition fees and some incidental expenses can be provided

4. COLLABORATION WITH DEVELOPING COUNTRIES:

Specific areas of interest: as listed above

Geographical preference: Most of the research work pertains to the Indian sub-continent and the Indian Ocean, Bay of Bengal and Arabian Sea regions

SPACE AND ASTRONOMY RESEARCH CENTRE

P.O. Box 2441, Jadiriyah, Baghdad, Iraq

Tel.: 7765116, Ext. 1100

Contact persons: Dr. Kadhim Mouala, Space Department; Dr. Quassim A. Abdullah, Remote Sensing Department.

Principal function(s) of institution: Research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specialization: basic space sciences, remote sensing

Summary of courses and research activities: Cosmic rays (origin, meteorological effect), geomagnetism, atmosphere and space research (airglow, ionosphere, magnetosphere). Basic and applied research in the field of remote sensing.

Duration/Frequency/Language(s) of instruction: Continuous/--/Arabic, English

Facilities: Magnetic observatory, ionosonde, photometer (for air glow), sun spot observatory. Ground receiving station, digital image analysis laboratory, photo laboratory.

Number of trainees: Between 2 and 4

Entry requirements: B.Sc.

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: to be negotiated

Monthly room and board and incidental expenses: US\$ 750

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: 2 per year

Other financial support available for foreign participants: Through individual agreements between the two parties

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Geomagnetism, cosmic rays, atmospheric and ionospheric research. Digital image analysis, photo interpretation and processing, software development, remote sensing hardware design and maintenance, photogrammetry.

Geographical preference: Ground-based stations having the same geographical co-ordinates as Iraq if possible

I R E L A N D

UNIVERSITY COLLEGE DUBLIN

Physics Dept., Stillorgan Road, Dublin 4, Ireland

Tel.: 01-693244

Contact person: N. A. Porter

Principal function(s) of institution: Teaching and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences

Summary of courses and research activities: Gamma-ray astronomy

Duration/Frequency/Language(s) of instruction: 10 hrs/annually/English

Facilities: Some high-speed electronics facilities, computer facilities and programmes

Number of trainees: 1

Entry requirements: Primary degree

Degree/Diploma/Certificate awarded: Higher degrees by research

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: L 1,000 for higher degree

Monthly room and board and incidental expenses: No provisions

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Limited number of fellowships through Royal Irish Academy

Other financial support available for foreign participants: Possibly EEC support

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Gamma-ray astronomy using ground-based systems

Geographical preference: At good astronomical climate in the southern hemisphere

J A P A N

A. COMMUNICATIONS RESEARCH LABORATORY, MINISTRY OF POSTS AND TELECOMMUNICATIONS

4-2-1 Nukuikita-machi, Koganei-shi, Tokyo, 184, Japan

Tel.: 81-423-277467

Fax: 81-423-276659

E-mail: jun@crl.go.jp

Contact person: Jun Umezu (International Affairs Section)

Principal function(s) of institution: Research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences, remote sensing, satellite communications

Summary of research activities: Advanced space communications technology including satellite broadcasting, mobile communications satellite systems, intersatellite communications, and space laser communications. LEO communications systems, high data-rate satcom systems, and GEO servicing vehicle systems.

Duration/Frequency/Language(s) of instruction: about 7-10 years/a new programme usually starts every year or very other year/Japanese

Facilities: Experimental facilities for space communications projects at Kashima Space Research Centre; experimental facilities for optical space communications projects at Headquarters (Tokyo); experimental facilities for high data-rate satellite communications projects at Seika Research Centre.

Number of trainees: --

Entry requirements: --

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: --

Geographical preference: Asia-Pacific region

B. UNIVERSITY OF TOKYO, INSTITUTE OF INDUSTRIAL SCIENCE

7-22, Roppongi, Minatoku, Tokyo, Japan

Tel.: 03-402-6231 Ext. 2560

Contact person: Prof. S. Murai

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing

Summary of courses and research activities: Development of computer programmes for pre-processing and classification. Land-use classification in the application to urban environment.

Duration/Frequency/Language(s) of instruction: 6 months a year, every week/annually/ English, Japanese

Facilities: Digital image processing system

Number of trainees: Between 1 and 5

Entry requirements: Graduate course, computer programming; under 35 years old

Degree/Diploma/Certificate awarded: Master or Doctor of Engineering only through scholarship given by Ministry of Education

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Y 400,000 per year

Monthly room and board and incidental expenses: Y 150,000

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: 2 to 5 scholarships/ fellowships are available

Other financial support available for foreign participants: (a) Japan International Co-operation Agency (JICA); (b) Japan Society for Promotion of Science (JSPS)

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Digital image processing technology; applications to agriculture, land use and geology

Geographical preference: South-East Asia

JORDAN

A. ROYAL JORDANIAN GEOGRAPHIC CENTRE

P.O. Box 20214, Amman - 11118, Jordan
Tel.: 962-6-845188 Fax: 962-6-847694
Contact persons: Director General

Principal function(s) of institution: Training, education, production

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing

Summary of courses and research activities: Introductory and advanced courses in remote sensing

Duration/Frequency/Language(s) of instruction: 4 month, short courses from 2 to 4 weeks /annually/Arabic or English

Facilities: Image processing workstations (VMS and UNIX), electrostatic plotters, film recorder and scanners, photo laboratories

Number of trainees: 10

Entry requirements: B.Sc.

Degree/Diploma/Certificate awarded: End of course certificate

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: US\$ 500

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Map production and remote sensing

Geographical preference: None

B. TELECOMMUNICATIONS COLLEGE

Jordan, Amman, P.O. Box 2703, Jordan
Tel.: 713320
Contact person: Dr. Abdel Fattah Abu Qayyas

Principal function(s) of institution: Education

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: satellite communications

Summary of courses and research activities: Satellite communications technology, which includes principles of satellite communications, RF & BB line calculations, principles of different Intelsat

services. Theory of operation and maintenance of components and subsystems of satellite earth stations.

Duration/Frequency/Language(s) of instruction: 2 years academic programme/2 years/Arabic/English; Short courses/on demand/Arabic/English

Facilities: Class rooms, laboratory, audio-visual aids, computer based training, BAQA E/S complex.

Number of trainees: Between 10 and 20.

Entry requirements: Higher Secondary School Certificate

Degree/Diploma/Certificate awarded: Academic diploma for 2 years programme; professional certificate for short courses.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: About \$US 4000

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes.

Specific areas of interest: Exchange of information, instructors and course materials.

Geographical preference: Arab countries

KUWAIT

KUWAIT INSTITUTE FOR SCIENTIFIC RESEACH

P.O. Box 24885, Safat, Kuwait

Tel.: 481-6988

Contact person: --

Principal function(s) of institution: Training, research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing

Summary of courses and research activities: --

Duration/Frequency/Language(s) of instruction: --

Facilities: --

Number of trainees: --

Entry requirement: --

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: --

Geographical preference: --

LEBANON

NATIONAL CENTER FOR REMOTE SENSING

P.O. Box 11-8281, Beirut, Lebanon

Tel.: (961-1) 409 845-7 Fax: (961-1) 822 639 E-mail: consult@cnrs.edu.lb

Contact person: Dr. Mohamad Khawlie

Principal function(s) of institution: Research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing

Summary of courses and research activities: Workshops. Research in water resources, agriculture, geology, environmental conservation, sectoral databases

Duration/Frequency/Language(s) of instruction: 6 months-4 years/--/English, Arabic

Facilities: advanced computer hardware, software and peripherals

Number of trainees: 10 - 15 (in Workshops)

Entry requirement: B.Sc.

Degree/Diploma/Certificate awarded: Certificate

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: none

Other financial support available for foreign participants: none

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Training, resources, environmental conservation and protection

Geographical preference: none

LIBIYAN ARAB JAMAHIRIYA

LIBIYAN CENTER FOR REMOTE SENSING AND SPACE SCIENCE

P.O. Box 82819, Tripoli, Libya
Tel.: 218-21-607004 - 14 Fax: 218-21-607015
Contact person: General Director

Principal function(s) of institution: Training, research, development and services

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences, remote sensing

Summary of courses and research activities: --

Duration/Frequency/Language(s) of instruction: --

Facilities: --

Number of trainees: --

Entry requirement: --

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Remote sensing, aerospace engineering, astronomy

Geographical preference: --

MALAYSIA

A. MALAYSIAN AGRICULTURAL RESEARCH AND DEVELOPMENT INSTITUTE (MARDI)

P.O. Box 12301, 50774 Kuala Lumpur, Malaysia
Tel.: (03) 9486601 Fax: (03) 9483664
Contact person: Director General

Principal function(s) of institution: Research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing

Summary of courses and research activities: Research on the use of remote sensing for agricultural and related land resources studies. Assist in the development of remote sensing in the country by organizing seminars,workshops and training

Duration/Frequency/Language(s) of instruction: Continuous research programme/--/English

Facilities: Analogue analysis facilities

Number of trainees: --

Entry requirements: Minimum basic degree

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: N/A

Monthly room and board and incidental expenses: N/A

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Land use mapping and agricultural resources evaluation using satellite data

Geographical preference: Humid tropics; Malaysian Peninsula

B. MALAYSIAN CENTRE FOR REMOTE SENSING (MACRES)

No. 13,Jalan Ismail, 50480 Kuala Lumpur, Malaysia
Tel.: 603-2987280 Fax: 603-2987036
Contact person: Mr. Nik Nasruddin Mahmood

Principal function(s) of institution: Training, applied research, data acquisition, GIS

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing

Summary of courses and research activities: Applied research in remote sensing and GIS technologies (2B1); Basic courses on using remote sensing and GIS technologies for various applications (2B2).

Duration/Frequency/Language(s) of instruction: 2B1: 1-2 yrs/--/English and Malaysian; 2B2: 2-3 yrs/3 courses peryear/ English and Malaysian

Facilities: Image processing systems, GIS, photo laboratory, cartographic equipment

Number of trainees: between 10 and 20

Entry requirement: Basic degree in relevant field

Degree/Diploma/Certificate awarded: Academic certificate

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: approx. US\$ 700 per course

Monthly room and board and incidental expenses: approx. US\$ 400 per month

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Applications of remote sensing to agriculture, geology, environment, forestry

Geographical preference: None

MAURITIUS

UNIVERSITY OF MAURITIUS, SCHOOL OF SCIENCE

Reduit, Mauritius

Tel.: (230) 454-1041 Fax: 454-9642

Contact person: Prof. Ch.V. Sastry; Prof. I. Fagoone; Dr. S.D. Rughooputh

Principal function(s) of institution: Training, Education and Research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences, remote sensing, satellite meteorology

Summary of courses and research activities: Survey of southern galactic plane at 150 Mhz. Subject of remote sensing is incorporated in degree course on Environmental Studies, including training in image processing. Modelling of spatiotemporal features using GIS.

Duration/Frequency/Language(s) of instruction: --/--/English and French

Facilities: Aperture synthesis radio telescope under construction. Hardware and software for study/research in remote sensing and satellite meteorology.

Number of trainees: 2

Entry requirements: M.Sc. in Physics/Astrophysics for space sciences programme; undergraduate in environmental studies, math or physics for remote sensing and satellite meteorology programmes .

Degree/Diploma/Certificate awarded: B.Sc. (Hons) in science, M.Sc., Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: Rs. 4,000 per month

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Radio astronomy. GIS.

Geographical preference: None

MEXICO

A. UNIVERSIDAD NACIONAL AUTONOMA DE MEXICO (UNAM), INSTITUTO DE GEOFISICA

Ciudad Universitaria, Coyoacan, 04510 México D.F., México

Telex: 5-50-2486 Tel.: (5) 5-48-1079

Contact person: Dr. Silvia Bravo; Dr. Jorge Lira Chavez; Dr. Gerardo Suarez Reynoso;

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializatón: basic space sciences, remote sensing, satellite communications

Summary of courses and research activities: Cosmical electrodynamics; plasma physics and magnetohydrodynamics; solar-terrestrial relationship; solar physics; magnetospheric physics; ionospheric physics; planetary physics; physics of the interplanetary space; cosmic ray physics; solar wind. Image processing, remote sensing applications to natural resources, applications of remote sensing in seismology and volcanology. Development and operation of telemetric seismic and volcanic stations using satellite communications systems.

Duration/Frequency/Language(s) of instruction: Semestral/each two semestres/Spanish

Facilities: Computing programmes, data banks, microcomputers, electronic laboratories, personnel

Number of trainees: between 2 and 15

Entry requirements: B.Sc. degree and admission test

Degree/Diploma/Certificate awarded: M.Sc., Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: US\$ 2,000 per semester

Monthly room and board and incidental expenses: US\$ 500

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Yes. Number is variable.

Other financial support available for foreign participants: Yes.

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: As listed above

Geographical preference: None

B. GERENCIA DEL SERVICIO METEOROLOGICO NACIONAL

Av. Observatorio 192, Col. Observatorio Tacubaya, D.F., Mexico

Tel.: 515-20-90 Fax: 271-0878

Contact person:

Principal function(s) of institution: Meteorologia, climatologia y redes de observacion

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializatón: satellite meteorology

Summary of courses and research activities: Pronostico Del Tiempo y Aplicaciones a la Hidrologia Y Agricultura

Duration/Frequency/Language(s) of instruction: Permenente/Espanol

Facilities: Por el Momento No Existen Facilidades Disponibles

Number of trainees: --

Entry requirements: --

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Pronostico del tiempo y Huracanes

Geographical preference: None

MOROCCO

ROYAL CENTRE FOR REMOTE SENSING (CRTS)

16 bis, Avenue de France, Agdal, Rabat, Morocco
Tel.: (212-7) 77 63 07/06 Fax: (212-7) 77 63 00 E-mail: crts@mtds.com
Contact person: Mrs. Amal Layachi

Principal function(s) of institution: Coordination and promotion of remote sensing, development projects, satellite data distribution, training, research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializatoin: basic space sciences, remote sensing

Summary of courses and research activities: Courses on Remote sensing. GIS summer session. Programme in space technology. Applied research in space technology (space oceanography, applications of remote sensing in agriculture, geology, etc.) conducted in collaboration with university, institution and research centre

Duration/Frequency/Language(s) of instruction: 1-2 weeks modules/every year/French, English
Facilities: Computer workstations, image processing and GIS software, local network, web-site, equipment for data distribution and output periferals. Lecture room, documentation centre.

Number of trainees: about 50 trainees per course

Entry requirement: B.Sc. + 2 to 4 years

Degree/Diploma/Certificate awarded: Certificate of attendance

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: US\$ 400 per week for Remote Sensing module; US\$ 800 per two weeks summer session

Monthly room and board and incidental expenses: US\$ 60 per day

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Remote sensing and GIS applications; space technology.

Geographical preference: None

N E T H E R L A N D S

INTERNATIONAL INSTITUTE FOR AEROSPACE SURVEY AND EARTH SCIENCES (ITC)

Hengelosestraat 99, P.O. Box 6, 7500 AA Enschede, The Netherlands

Tel.: (0)53-4874444 Fax: (0)53-4874400

Contact person: Mrs. A. Scheggetman (education); Dr. E.C. Kusters (research); Mrs. Fahner (consulting).

Principal function(s) of institution: Education, research, advisory and consulting

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializatoin: remote sensing, satellite meteorology

Summary of courses and research activities:

Courses: Remote sensing - on the acquisition, handling and use of geodata, using aerospace surveys and geoinformation systems: Technology level - cartography; Post-Graduate and M.Sc. level - production photogrammetry; integrated map and geo-information production; cartography; digital image processing and remotely sensed data; water resources surveys; geological and applied geomorphological surveys; engineering geology; mineral exploration and exploration geophysics; soil, forest, urban, rural and land ecology surveys; forestry for rural development; socio-economic information for natural resource management; geoinformation systems for cadastral, urban and rural applications. Satellite meteorology - technology diploma courses (1), post-graduate diploma courses (18), M.Sc.-degree courses (15), certificate level courses (4).

Research: The ITC Research Programme "Survey and Environmental Monitoring for Planning and Management" focuses on research activities in seven problem areas: 1) conservation of tropical rain forests; 2) watershed management; 3) natural hazard assessment and mitigation; 4) information extraction for physical and administrative infrastructure; 5) survey and monitoring of coastal zones; 6) sustainable use of semi-arid zones; 7) exploration and environmentally-sound exploitation of mineral and water resources. The ITC Ph.D. programme is a part of the ITC Research Programme

Duration/Frequency/Language(s) of instruction: from 2 to 24 months (Ph.D. studies on top of M.Sc. - 36 months)/yearly/English only.

Facilities: Exercise rooms with individual stereoscopes for almost every course; photographic laboratory; cartographic designers and printing shop; photogrammetric plotting laboratory containing all world known instruments; digital tapes and image processing laboratory; computer assisted cartography laboratory; computer department supporting geoinformation systems activities, including development of software required for teaching; receiving station for NOAA data.

Number of trainees: approximately 450 per year

Entry requirements: Stereoscopic vision for the majority of courses; knowledge of English on TOEFL level 500 minimum; B.Sc. degree in any related field as described above (except for cartographic technology where university entrance level with good knowledge of mathematics and physics is sufficient) for post-graduate courses; for M.Sc. courses good results in ITC post-graduate course; for Ph.D. studies good results in ITC M.Sc. level programmes. Two years experience in a field related to mapping.

Degree/Diploma/Certificate awarded: Certificate for courses shorter than 6 months; post-graduate diploma for courses of 6 to 11 months; Technologist Diploma; M.Sc. degree; Ph.D. degree awarded by a Netherlands university associated to ITC for ITC Ph.D. programme.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Tuition for post-graduate (& technology) courses Dfl. 4,000 to 11,000 depending on their duration, tuition for M.Sc. courses between Dfl. 16,500 and 25,500; Ph.D. programme Dfl. 25,000 or 30,000 per year; lecture notes, books and other study materials some Dfl.1000 per course.

Monthly room and board and incidental expenses: Dfl. 1,545 using hotel facilities associated to ITC; Dfl. 85 per month health insurance; Dfl. 2,000 miscellaneous and extras for fieldwork per course of maximum a year.

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Several scholarships and fellowships are available in the fellowship programme of the Dutch Government, the European Community and UN agencies. For details, the brochure "General Information" should be requested from ITC.

Other financial support available for foreign participants: Consult above-mentioned brochure.

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: In all areas of specialization, particularly mapping.

Geographical preference: None

NEW ZEALAND

DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH (DSIR)

Contact persons: Dr. M.J. McDonnell, Division Of Information Technology, Lower Hutt, New Zealand, Tel.: 64-4-5666919; S. E. Belliss, Physical Sciences, Box 31, 311 Lower Hill, New Zealand, Tel.: 64-4-5666919, Fax: 64-4-5690067; Peter Stephens, Land Resources, Private Bag, Palmerston North, New Zealand, Tel.: 64-6-3567154, Fax: 64-6-3559230.

Principal function(s) of institution: Training, research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing

Summary of courses and research activities: Introduction to remote sensing. Digital image processing; radiometry, automated map production, atmospheric correction of images, Antarctica. Image processing hardware, software and system design. Resource mapping.

Duration/Frequency/Language(s) of instruction: from 2 to 18 months/English

Facilities: Comprehensive image processing laboratory; appropriate computer hardware and software; digitising, plotting and photographic facilities.

Number of trainees: Up to 16

Entry requirements: M.Sc. or Ph.D. and working experience

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: some opportunities may be available through NRAC

Other financial support available for foreign participants: Yes.

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: As indicated above

Geographical preference: None

N I G E R I A

UNIVERSITY OF LAGOS, DEPARTMENT OF GEOGRAPHY

Akoka, Lagos, Nigeria

Tel.: 821945

Contact person: Prof. P.O. Adeniyi

Principal function(s) of institution: Training, education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing

Summary of courses and research activities:

Courses: Courses on remote sensing from space, applied remote sensing, concepts and foundation of remote sensing

Research: Development of a national land use classification scheme, analogue and digital assessment of various remotely sensed data for agricultural land use inventory and mapping

Duration/Frequency/Language(s) of instruction: One year for M.A., 2 years for M.Phil., 3 years for Ph.D./Annually/English

Facilities: Mirror and pocket stereoscopes; a micro-computer will be added shortly

Number of trainees: Between 1 and 5

Entry requirements: 1st degree in Geography

Degree/Diploma/Certificate awarded: M.A., M.Phil., Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Can be obtained by contacting the University authorities

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Areas indicated in summary above

Geographical preference: --

N O R W A Y

A. NORWEGIAN RESEARCH COUNCIL FOR SCIENCE AND THE HUMANITIES (NAVF)

Sandakerveien 99, N-0483, Oslo 4
Tel.: +47-2-157012 Fax: +47-2-205571
Contact person: Birgit Benterud, Research Coordinator

Principal function(s) of institution: NAVF's objective is to promote research in the humanities, the medical, natural and social sciences. The Council is a strategic, evaluating and funding organization emphasizing long-term national perspective for Norwegian basic research. As such it has the responsibility for coordination of space research in Norway.

The following institutions take part in the space research programme:

University of Oslo, P.O. Box 1072 Blindern, N-0316, Oslo 3
University of Bergen, P.O. Box 25, N-5027, Bergen Universitet
University of Tromsø, P.O. Box 635, N-9001, Tromsø
University of Trondheim, AVH, N-7055, Dragvoll
Norwegian Defence Research Establishment, P.O. Box 25, N-2007, Kjeller

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences

Summary of courses and research activities:

Courses: Graduate and post graduate courses

Research: Space physics, astrophysics, astronomy, life science, meteorology and oceanography

Duration/Frequency/Language(s) of instruction: Continuous/--/Norwegian

Facilities: Andoya Rocket Range, operated by the Norwegian Space Centre, P.O. Box 85, Smestad, N-0309, Oslo 3

Number of trainees: --

Entry requirements: Contact should be made with universities and institutions

Degree/Diploma/Certificate awarded: Norwegian degrees equivalent to master's and doctor's degrees are given by all the universities

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Contact should be made with universities

Monthly room and board and incidental expenses: Contact should be made with universities and institutions

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: Post Doctorate Fellowship programme may be available from the Royal Norwegian Council for Scientific and Industrial Research (NTNF), P.O. Box 70, Tåsen, N-0801, Oslo 8

4. COLLABORATION WITH DEVELOPING COUNTRIES: --

Specific areas of interest: N/A

Geographical preference: N/A

B. NORWEGIAN SPACE CENTRE

P.O. Box 85 - Smestad, 0309 Oslo 3, Norway

Tel.: 47-2-52-3800 Fax: 47-2-52-2397

Contact persons: Prof. Bjorn Landmark; Prof. Alv Egeland, Univ. of Oslo, Fysisk Inst., P.O. Box 1038, Blindern, 0315, Oslo 3; Mr. Per Erik Skrovseth, Head, Earth Observation; Prof. Gunnar Stette, Inst. for Teletekn./radiotekn, O.S. Bragstads plass 4, 7034 Trondheim; Prof. Arne Grammeltveld, DMNI, P.O. Box 43 Blindern, 0313 Oslo 3, Norway (satellite meteorology).

Principal function(s) of institution: Coordinating space activities in Norway

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializatoin: basic space sciences, remote sensing, satellite communications, satellite meteorology

Summary of courses and research activities: Astrophysics (at the universities of Tromso and Oslo); cosmic physics and space plasma physics (at the universities of Tromso, Bergen and Oslo). Remote sensing from a part of courses at the universities in Tromso, Trondheim, Oslo and Aas (agricultural university); Space oceanography from a part of courses at the University of Oslo and a special course is given in Bergen; Special courses in microwave remote sensing are given at NTH (Trondheim) and UNIK (Kjeller) and in image processing at the University of Tromso. Satellite communications is included in teaching at the Technical University of Trondheim, NTH. A special course is given at the university teaching centre, UNIK at Kjeller near Oslo, which is part of University of Oslo. Good opportunities for graduate studies (Masters and Ph.D) and post graduate research at all places. Satellite meteorology is included in courses at the University of Oslo; a special course also is given at the University of Bergen.

Duration/Frequency/Language(s) of instruction: Semester/Year/Norwegian

Facilities: Sounding rocket range at Andoya and satellite station at Tromso, both in northern Norway. Ship borne in situ measurements form normally part of research activity.

Number of trainees: Depends on level of course

Entry requirements: --

Degree/Diploma/Certificate awarded: Only normal diploma

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Normal university fees (low)

Monthly room and board and incidental expenses: NOK 4,000-5,000

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: The only Scholarship/Fellowship opportunities presently available are on a post doctorate or visiting scientist basis

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: All above areas

Geographical preference: None

C. NORWEGIAN TELECOM, RESEARCH DEPARTMENT

P.B. 83, 2007 KJELLER, Norway ·
Tel.: 47-6-809100
Contact person: --

Principal function(s) of institution: Research and Development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: satellite communications

Summary of courses and research activities:

Courses: Course in "Satellite Communications" given at University of Oslo (UNIK) by lectures from the above department

Research: Research within satellite telecom comprises following activities: system planning, earth station technology, propagation and antennas, moderation and coding/encryption for the following applications: broadcasting, mobile services and business services

Duration/Frequency/Language(s) of instruction: Semester/annually/Norwegian

Facilities: --

Number of trainees: --

Entry requirements: --

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes.

Specific areas of interest: Foreseeable activities in developing countries will be coordinated by NORAD.

Geographical preference: --

P A K I S T A N

PAKISTAN SPACE AND UPPER ATMOSPHERE RESEARCH COMMISSION (SUPARCO)

Sector 28, Gulzar-e-Hijri, Off University Road, P.O. Box 8402, Karachi-75270, Pakistan
Tel.: 92-21-4742615 Fax: 92-21-4960553

Contact persons: Mr. M. Nasim Shah, Director (International Affairs); Mr. Zafar Muhammed Khan, Director, Ionospheric Research Division, Tel.:8141311-5, Fax:92-21-4960553; Mr. Saiful Huk, Director, Remote Sensing Applications Division, Tel.:8141311-5, Fax:92-21-4960553; Dr. A. Majid, Tel. 8141275-9; Mr. Ziker-ur-Rehman Siddiqui, Director, Space Science Division, Tel.: 8141311-5; Fax: 4960553.

Principal function(s) of institution: Research and development in space science and technology

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializatoin: basic space sciences, remote sensing, satellite communications, satellite meteorology

Summary of courses and research activities:

Courses: Special course on space physics/space science at SUPARCO's Space and Atmospheric Research Centre (SPARCENT). As national co-ordinator for remote sensing in Pakistan, SUPARCO organizes short training courses on annual/biannual basis to acquaint the national users with application of satellite remote sensing data for resource and environmental surveying. These courses are regularly held at Remote Sensing Applications Centre (RESACENT), Karachi or at its regional centers at other cities in the country. As the national space agency, SUPARCO organises courses on satellite applications to meteorological and atmospheric studies for scientists belonging to various national agencies. These courses held at SUPARCO's Space and Atmospheric Research Centre (SPARCENT) at Karachi, cover the following: acquisition of data from meteorological satellites. application of satellite data to various meteorological and related environmental studies; determination of vertical profiles of atmospheric parameters through satellite radiance; study of earth's atmosphere through balloon and rocket soundings; air pollution monitoring; collection of environmental data from unmanned Data Collection Platforms.

Research: Ionospheric physics and radio wave propagation; satellite tracking using optical and radio techniques; geomagnetism; observational astronomy. The RESACENT has been actively pursuing a multidisciplinary remote sensing application programme since 1973. The research studies based mainly on Landsat/SPOT data supplemented by aerial and conventional data have been carried out at the Centre. A large volume of Landsat MSS/TM and SPOT XS/PAN data covering the whole of Pakistan and a limited amount of SIR-A, Metric Camera and CZCS data are available at this Centre. These data are being used by scientists/engineers of the Centre as well as by the national user agencies for various application studies. Research studies on the topics mentioned above are being carried out at SPARCENT. Satellite data acquired from the NOAA meteorological satellites in APT mode as well as the environmental data acquired through DCPs are also provided to other concerned agencies. Communication Satellite System design, evaluation, technical studies, data acquisition/interpretation, small ground terminals/receivers.

Duration/Frequency/Language(s) of instruction: 1 - 4 weeks/annual or biannual/ English

Facilities: PIR 9A and 9B vertical incidence ionospheric sounders; Digisond 256 for acquisition of ionospheric data; VLF receiver/comparator (16 KHz) for monitoring solar flares; in-house microcomputer facility; automatic geomagnetic observatory; small and medium range sounding rocket launching facilities; telemetry and tracking facility; 14 inches Cassegrain optical telescopes;

mobile video optical system; Magnavox receivers; radio tracking receivers. Satellite tracking station. The RESACENT has well-equipped laboratory facilities for visual as well as digital interpretation and analysis of remotely sensed data. Electro-optical equipment used for visual interpretation include density slicer, zoom transferscope, zoom stereoscopes, Diazo developer/printer, rationing radiometer and other equipment. The Centre's digital processing facilities include a dedicated, interactive, micro-processor based image processing system - EBBA II - and MicroVax II computer with a GPX workstation. Various I/O peripherals are connected to both systems. A Local Area Network (LAN) incorporating 8 user terminals and the GPX workstation has also been developed on basis of the MicroVax II. SUPARCO has also established a satellite ground receiving station at Islamabad to acquire Landsat MSS and TM, SPOT XS and Pan and NOAA AVHRR HRPT data in real-time. This station is one of the most advanced and sophisticated stations in the Asia-Pacific region. It covers, in addition to the whole of Pakistan, a large number of neighbouring countries, wholly or partially. The station has most modern facilities for data reception, preprocessing and processing, which include S and X band dish antennas, high density digital tape recorders, VAX 11/780 computers, array processors, high precision B & W and colour film recorder, etc. SUPARCO also has sophisticated ground receiving station for acquisition of NOAA APT pictures and facilities for reception of TOVS/HRPT data. Micro computer based systems are available for the processing of NOAA and TOVS/HRPT data. Other facilities include DCPs for the collection of environmental data from remote and inaccessible areas and Local User Terminal (LUT) for acquisition and processing of these data under the ARGOS Network; Surface Air Pollution Monitoring Equipment; Analytical Chemistry Lab. for the analysis of field samples; Balloon Sounding Facility for Stratospheric Ozone and related Upper Atmospheric Studies.

Number of trainees: Between 15 and 20, including 1 or 2 foreign participants

Entry requirement: B.Sc. or M.Sc. in physics, mathematics, electronics, computer science/engineering or earth sciences such as agriculture, hydrology, geology, etc.

Degree/Diploma/Certificate awarded: Certificate is awarded on successful completion of the training course

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: US\$ 75-200 depending on programme

Monthly room and board and incidental expenses: \$US 500 per week

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: As indicated above

Geographical preference: Developing countries of ESCAP and ESCWA regions

P E R U

SENAMHI

Av. Republica de Chile - 295, Oficina 205, Lima, Peru.

Telex: (5114) 336340 Tel.: 336340

Contact person: Alfonso Maguina Lopez; Otto Ramos Bustos

Principal function(s) of institution: Vigilancia del tiempo y el clima, investigación en meteorología, Agrometeorología e Hidrología.

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: satellite meteorology

Summary of courses and research activities: Meteorología, Climatología e Hidrología.

Duration/Frequency/Language(s) of instruction: 15 días/Anual/Español

Facilities: Informaciones hidrometeorológicas, Instrumental, personal capacitado.

Number of trainees: --

Entry requirements: Física-Matemática-Meteorología

Degree/Diploma/Certificate awarded: Certificado de capacitación

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Meteorología, Hidrología, Oceanografía.

Geographical preference: --

PHILIPPINES

A. NATURAL RESOURCES MANAGEMENT CENTER (NRMC)

1610 Triumph Bldg. 9th Floor, Quezon Avenue, Quezon City, Philippines

Telex: 27216 NRCM PH Tel.: 96-86-44

Contact persons: Ricardo M. Umali, and Ricardo T. Biña

Principal function(s) of institution: Research, development and training

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing

Summary of courses and research activities:

Courses: The NRMC Remote Sensing Manpower Development Programme involves the organization and conduct of remote sensing training courses, workshops, symposia, seminars applicable to various natural resources disciplines

Research: Applied research in visual and computerized processing and interpretation of remotely sensed data and research in resource information handling and processing

Duration/Frequency/Language(s) of instruction: 3 weeks-1 month/Depends on availability of funds and Center's workload/English

Facilities: Image-100 multispectral image analyser system and peripherals; UNIVAC System 80; IBM XT microcomputer, and other equipment

Number of trainees: Between 5 and 15

Entry requirements: Bachelor's degree or equivalent in their chosen fields of specialization

Degree/Diploma/Certificate awarded: Certificate of completion-professional

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Stipend: based on ESCAP approved funding for 3 weeks remote sensing training

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Research and development applications using remote sensing data in the fields of forestry, agriculture and land use, geology and aquatic/coastal resources

Geographical preference: Same climatic zones

B. PHILIPPINE ATMOSPHERIC, GEOPHYSICAL AND ASTRONOMICAL SERVICES ADMINISTRATION (PAGASA)

ATB Bldg., 1424 Quezon Avenue, Quezon City 3008, Philippines

Telex: 42021 PAGASA PM Tel.: 922-8401

Contact person:

Principal function(s) of institution: Provision of meteorological, hydrological and climatological services

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializatoin: satellite meteorology

Summary of courses and research activities: Application of remote sensing data to weather forecasting.

Duration/Frequency/Language(s) of instruction: --

Facilities: --

Number of trainees: --

Entry requirements: --

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Climate change

Geographical preference: Southeast Asia

C. PHILIPPINE COMMUNICATIONS SATELLITE CORPORATION

11th Flr., Telecoms Plaza, Sen. Gil J. Puyat Avenue, Makati, Metro Manila, Philippines

Telex: 63586 POTC PN Tel.: 815-8406

Contact person: Mr. G.T. Parazo, Asst. Station Manager

Principal function(s) of institution: Satellite communications service

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializatoin: satellite communications

Summary of courses and research activities: Operation and maintenance of an earth station for satellite communications

Duration/Frequency/Language(s) of instruction: 6 months/As needed/English

Facilities: Three standard "A" earth stations, one 12-meter antenna E/S with RF equipment and auxiliary equipment and one standard B TVRO E/S

Number of trainees: Up to 12

Entry requirements: Registered electronics and communications engineers or radio technicians with 1st class radio telephone or telegraph operators licence

Degree/Diploma/Certificate awarded: Certificate of completion

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: In 1985, P 7,000.00

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Technical exchange programme with ASEAN members with earth station and other communications facilities

Geographical preference: None

P O L A N D

INSTITUTE OF GEODESY AND CARTOGRAPHY

00-950 Warsaw, ul. Jasna 2/4 Poland

Tel.: 48-22-270328 Fax: 48-22-270328

Contact persons: Prof. Bogdan Ney, Prof. Jan Konieczny, Dr. Romuald Kaczynski, Prof. Adam Linsenbarth

Principal function(s) of institution: Research, development and training

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing

Summary of courses and research activities: Data acquisition, preprocessing and processing of data (photographic, electro-optical, and electronic), analysis of remotely sensed data (analog and digital), thematic applications of remotely sensed data in geology, vegetation monitoring, forestry, land use and thematic mapping

Duration/Frequency/Language(s) of instruction: 3-12 weeks/ Twice annually/ English, Russian

Facilities: Multispectral cameras, thermal scanner, additive colour viewers, analog and digital systems for data processing

Number of trainees: Between 1 and 15

Entry requirements: College/University degree

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: \$US 250-1,000, depending on the type of course

Monthly room and board and incidental expenses: Approx. \$US 300

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: 1-2 scholarships/fellowships are available

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Remote sensing experiments using new instruments and methods for acquisition, processing and interpretation of data. Remote sensing applications in forestry, land use monitoring, geology, environmental protection

Geographical preference: --

Q A T A R

UNIVERSITY OF QATAR, SCIENTIFIC AND APPLIED RESEARCH CENTER (SARC),
REMOTE SENSING UNIT (RSU)

P.O. Box 2713, Doha, QatarTelex: 4630 UNVSTY-DH

Tel.: (0974) 874961

Contact persons: Dr. Homaid Almadfs, Dr. Jaber Al-Noaimi

Principal function(s) of institution: Research and education

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing, satellite meteorology

Summary of courses and research activities: Application of remotely-sensed data from aircrafts and satellites to geological mapping, drainage basins, land-use pattern, coastal studies and other natural resource studies. Use of meteorological satellite data to monitor regional environmental phenomena, pollution and ground water studies

Duration/Frequency/Language(s) of instruction: --

Facilities: ERDAS System installed on a PC with the basic peripherals; NEC Color Data Analysis System.

Number of trainees: Between 2 and 5

Entry requirements: B.Sc. in Geology, Geography, Oceanography or Civil Engineering

Degree/Diploma/Certificate awarded: Professional

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Remote Sensing

Geographical preference: Arab countries of the Gulf Cooperative Council (GCC)

ROMANIA

A. ROMANIAN SPACE AGENCY

Str. Mendeleev nr. 21-25, 70168 Bucharest, Romania

Phone: +40-1-6504619 Fax: +40-1-6504222 E-mail: piso@roearn.ici.ro

Contact persons: Dr. Marius-Ioan Piso, Executive Secretary of ROSA; Astronaut Dumitru-Dorin Prunariu; Dr. Cornel Opreşiu

Principal functions of the institution: Coordination of national space activities, government representative, scientific and technical research in the fields of space exploration, consulting.

1. ACADEMIC AND SCIENTIFIC RESEARCH PROGRAMMES

Areas of specialization: basic space sciences, satellite communications, remote sensing.

Summary of courses and research activities: Basic, advanced and applied research in the areas of specialization developed in affiliated research and higher education centres and institutes. Master and PhD long-term training. Short term associated research programmes in some laboratories.

Duration/Frequency/Language(s) of instruction: 1-2 years for Masters, 3-5 years for PhD in Science & Engineering/--/Romanian, English and French

Facilities: Laboratory equipment, information technology, libraries in all centres and institutions.
Number of trainees: Approximately 35 Masters and PhD students in 1996 for the areas in the field.

Entry requirements: Graduate diploma for Masters in Science/Engineering, Masters diploma for PhD.

Degree/Diploma/Certificate awarded: Masters and PhD in Science/Engineering, none for associated researchers.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: According to the specific rules of the Universities for regular students. Particular agreements for associated researchers.

Monthly room and board and incidental expenses: Depending on the agreements. An amount of 300 to 500 USD monthly is in most cases sufficient for students without other support.

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: According to the governmental and/or institutional conventions and agreements.

Other financial support available for foreign participants: none

4. COLLABORATION WITH DEVELOPING COUNTRIES:

Specific areas of interest: All areas in space science, technology and applications.

Geographical preferences: none

B. NATIONAL INSTITUTE FOR AEROSPACE RESEARCHES "ELIE CARAFOLI"

Bd. Iuliu Măniu 220, 77538 Bucharest, Romania

Phone: +40-1-7452552 Fax: +40-1-3125341 E-mail: coprisiu@aero.incas.ro

Contact persons: Dr. Cornel Opreşiu

Principal functions of the institution: Coordination of national aerospace research and development programmes, scientific research and development in aerodynamics, flight dynamics, aerospace systems design.

1. ACADEMIC AND SCIENTIFIC RESEARCH PROGRAMMES

Areas of specialization: basic space sciences

Summary of courses and research activities: Basic, advanced and applied research in the areas of Aerodynamics, Flight Dynamics, Aircraft design and construction, Aerospace Propulsion and Thermodynamics, Aeroelasticity, Aerospace structures. Master and PhD long-term training together with the Aerospace Department of the University "Polytechnica" Bucharest. Short term associated research programmes.

Facilities: Trisonic wind tunnel, Transonic and subsonic wind tunnels, Ludwieg Tube. Structural and hydraulic testing laboratories. Information system and LAN. Library.

Number of trainees: Approximately 15 Masters and PhD students in 1996.

Entry requirements: Graduate diploma for Masters in Science/Engineering, Masters diploma for PhD.

Degree/Diploma/Certificate awarded: Masters and PhD in Science/Engineering, none for associated researchers.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: According to the specific rules of University "Polytechnica" Bucharest for regular students. Particular agreements for associated researchers.

Monthly room and board and incidental expenses: Depending on the agreements. An amount of 300 to 500 USD monthly is in most cases sufficient for students without other support.

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: According to the governmental and/or institutional conventions and agreements.

Other financial support available for foreign participants: none

4. COLLABORATION WITH DEVELOPING COUNTRIES:

Specific areas of interest: Aerospace science and technology, microsattellites design and construction, space information processing.

Geographical preferences: none

R U S S I A N F E D E R A T I O N

A. MOSCOW BAUMAN STATE TECHNICAL UNIVERSITY

No. 5, Baumanskaya str., 107005 Moscow, Russia
Tel.: 7-095-2614055, 7-095-2636541 Fax: 7-095-2679893
E-mail: RELCOM POSTMASTER@INTERD.BMGU.MSK.SU
Contact person: Foreign students department

Principal function(s) of institution: Training, education, research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences

Summary of courses and research activities:

Courses: Rocket engines; electric rocket engines and energy plants; spacecraft and boosters; flight dynamics and flight control; aviation and spacecraft heat engineering; preparatory language course.

Duration/Frequency/Language(s) of instruction: B. Sc. programme - 4 yrs, M.Sc. - 2 yrs, fellow - 3 yrs, doctoral student - 3 yrs/annually/Russian

Facilities: --

Number of trainees: --

Entry requirements: secondary education, knowledge of Russian (within the programme of the preparatory course)

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: between US\$ 2,800 and 4,800 depending on programme

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: --

Specific areas of interest: --

Geographical preference: --

B. MOSCOW STATE UNIVERSITY OF AVIATION TECHNOLOGY

No. 27, Petrovka str., K-21 Moscow, Russia
Tel.: 7-095-2006883
Contact person: Rector

Principal function(s) of institution: Training, education, research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences

Summary of courses and research activities:

Courses: Rocket engines; rocket design and building, preparatory language course.

Duration/Frequency/Language(s) of instruction: B.Sc. programme-4 yrs, M.Sc.-2 yrs, diploma specialist-1.5 yrs, fellow-3 yrs, preparatory course 3-12 month/annually/Russian

Facilities: --

Number of trainees: --

Entry requirements: secondary education, knowledge of Russian

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: between US\$ 2,500 and 3,500 depending on programme

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: --

Specific areas of interest: --

Geographical preference: --

C. MOSCOW STATE AVIATION INSTITUTE (TECHNICAL UNIVERSITY)

No. 4, Volokolamskoye Shausse, 125871 A80 Moscow, Russia

Tel.: 7-095-1584043, 1581373 E-mail: aet@tk.mainet.msk.su or alex@tk.mainet.msk.su

Contact person: foreign students department

Principal function(s) of institution: Training, education, research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences

Summary of courses and research activities:

Courses: Spacecraft and boosters, preparatory language course

Duration/Frequency/Language(s) of instruction: M.Sc. programme - 5.5 yrs, fellow - 4 yrs, doctoral student-3 yrs, training-up to 12 months, preparatory course 1 yr /annually/Russian

Facilities: --

Number of trainees: --

Entry requirements: secondary education, knowledge of Russian

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: between US\$ 600 and 6,000 depending on programme

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: --

Specific areas of interest: --

Geographical preference: --

D. MOSCOW PHYSICAL AND TECHNICAL INSTITUTE

No. 9, Institutsky per., 141700 Dolgoprudny, Moscovskaya oblast, Russia

Tel.: 7-095-4087563, 4985700 Fax: 7-095-4086869 E-mail: karlov@srdep.mirt.msk.su

Contact person: foreign students department

Principal function(s) of institution: Training, education, research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences

Summary of courses and research activities:

Courses: Flight dynamics and flight control, preparatory language course.

Duration/Frequency/Language(s) of instruction: B.Sc. programme - 4 yrs, M.Sc. - 2yrs, fellow - 3-4 yrs /annually/Russian

Facilities: --

Number of trainees: --

Entry requirements: secondary education, knowledge of Russian

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: between US\$ 600 and 6,000 depending on programme

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: --

Specific areas of interest: --

Geographical preference: --

E. MOSCOW ENERGY INSTITUTE (TECHNICAL UNIVERSITY)

No. 14, Krasnokazarmennaya str., 105835 Moscow, Russia

Tel.: 7-095-3625645, 3627560 Fax: 7-095-3628938

E-mail: RELCOM SMS@MEI.MSK.SU

Contact person: Foreign students department

Principal function(s) of institution: Training, education, research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences

Summary of courses and research activities:

Courses: Aviation and spacecraft heat engineering; preparatory language course.

Duration/Frequency/Language(s) of instruction: preparatory course - 1yr, B. Sc. programme - 4 yrs, M.Sc. - 2 yrs, fellow - 3 yrs, doctoral student - 2 yrs/annually/Russian

Facilities: --

Number of trainees: --

Entry requirements: secondary education, knowledge of Russian (within the programme of the preparatory course)

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: between US\$ 2,000 and 5,000 depending on programme

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: --

Specific areas of interest: --

Geographical preference: --

S A U D I A R A B I A

SAUDI CENTER FOR REMOTE SENSING

King Abdulaziz City for Science and Technology (KACST), Kingdom of Saudi Arabia

Tel.: (966 1) 481-1141

Fax: (966 1) 488-3756

Contact person: --

Principal function(s) of institution: Applied research, R & D

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing, satellite meteorology

Summary of courses and research activities: Remote sensing applications, supporting National Development Plans and academic research in education. Providing data from NOAA 9 and 10 for weather forecasting.

Duration/Frequency/Language(s) of instruction: --

Facilities: Image processing systems, receiving station

Number of trainees: --

Entry requirements: --

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Remote sensing

Geographical preference: Yes, due to availability of data in the Centre.

S I N G A P O R E

NATIONAL UNIVERSITY OF SINGAPORE

10 Kent Ridge Crescent, Singapore 0511, Republic of Singapore
Tel.: 65-7756666 Fax: 65-7757717 E-mail: crssec@leonis.nus.sg
Contact person: Dr. LIM, Hok (Tel.: 65-7723220)

Principal function(s) of institution: (i) to offer tertiary education leading to first degrees and post-graduate degrees; and (ii) to conduct research and development in various disciplines.

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing

Summary of courses and research activities: Remote sensing is one of the modules offered by the Department of Physics to fourth (Hon.) year students; students also may undertake research in remote sensing pursuing the M.Sc. or Ph.D. degree. A Centre for Remote Imaging, Sensing and Processing (CRISP) was established in 1992. Research activities undertaken at CRIPS focus on algorithms for focussing SAR data; interferometric SAR; applications of SAR data in forestry and oceanography; fusion of SAR and optical data.

Duration/Frequency/Language(s) of instruction: --/Every year/English

Facilities: complete satellite ground receiving station (SPOT and ERS data), CRAY supercomputer and other computers/workstations connected to the campus network.

Number of trainees: variable

Entry requirements: depends on programme

Degree/Diploma/Certificate awarded: B.Sc, M.Sc. or Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: variable, depends on programme

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Award of fellowship or scholarship is based on qualification of applicant

Other financial support available for foreign participants: teaching/lab assistanceship may be available

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: SAR data processing and applications, fusion of SAR and optical data, development of value-added remote sensing products

Geographical preference: none

SOUTH AFRICA

COUNCIL FOR SCIENTIFIC AND INDUSTRIAL RESEARCH (CSIR)

P.O. Box 395, Pretoria 0001, South Africa

Tel.: 27 12 841-9211 Fax: 27 12 86-2856

Contact persons: Prof. D.A. Scogings/Mr. S.E. Piper, Dept. of Surveying and Mapping, University of Natal, King George V Avenue, 4001, Durban; Dr. C.W. Louw, Foundation for Research Development, CSIR; Director, Division of Microelectronics and Communications Technology; Director, Division of Earth, Marine and Atmospheric Science and Technology (DEMAST).

Principal function(s) of institution: --

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing, satellite communications, satellite meteorology

Summary of courses and research activities:

Courses: An introductory course in remote sensing is offered annually, usually at the University of Natal or, alternatively, at the University of Cape Town. The course covers basic principles of remote sensing, with an emphasis on satellite data and digital image processing. No formal courses in satellite meteorology are offered. However, the South African Weather Bureau conducts in-house training on the applications of satellite meteorology.

Research: Remote sensing projects are funded in the following fields: agriculture, forestry, hydrology, land cover mapping, natural vegetation, geosciences, oceanography, data processing techniques and algorithm development. Research in radio-wave propagation and its effects, inter alia, on earth-satellite communications. Projects in satellite meteorology are carried out by the South African Weather Bureau and certain divisions of CSIR. Climate variability over Southern Africa and the behaviour of the Agulhas Current.

Duration/Frequency/Language(s) of instruction: variable/annually/English

Facilities: Direct reception of LANDSAT MSS data, image processing facilities available at various CSIR Institutes: Satellite Remote Sensing Centre, National Physical Research Laboratory, National Institute for Informatics and National Research Institute for Oceanology. The Division of Microelectronics and Communications Technology operates the Satellite Applications Centre. This facility receives, records and archives meteorological data from geostationary and polar orbiting meteorological spacecraft. Advanced image processing facilities are available for radiometric and geometric manipulation of meteorological data. In addition, image processing facilities exist in a number of other CSIR divisions.

Number of trainees: - depends on programme

Entry requirements: B.Sc, M.Sc. or appropriate experience

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: Funds are available to support visiting scientists to work in fields of mutual interest

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes
Specific areas of interest: Agriculture, forestry, natural vegetation, hydrology, land cover mapping, oceanography, geosciences, image processing techniques, monitoring programmes (e.g., drought, vegetation, degradation, urban growth)
Geographical preference: Southern Africa

B. SOUTH AFRICAN BROADCASTING CORPORATION

P.O. Box 8606, Johannesburg 2000, South Africa

Tel.: 714-3342

Contact person: Mr. H.J. Duncan, Director, Liaison and Research

Principal function(s) of institution: Research, development, establishment and operation

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: satellite communications

Summary of courses and research activities: Establishing a satellite distribution system throughout the Republic of South Africa; atmospheric attenuation (rain/dust); Earth station sizes; digital systems; enhanced coding systems (B-MAC etc.)

Duration/Frequency/Language(s) of instruction: --/--/--

Facilities: A major broadcasting organization with full training and research laboratory facilities

Number of trainees: Between 2 and 6

Entry requirements: Engineering diploma

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES

Specific areas of interest: --

Geographical preference: Neighbouring states (Lesotho, Swaziland, Botswana, Namibia, Zimbabwe and Zambia)

INSTITUTO NACIONAL DE METEOROLOGIA

Paseo de las Moreras s/n Ciudad Universitaria, Madrid, Spain

Telex No.22427 Teléfono: 2443500

Persona a contactar: --

Funciones principales de la institución: Desarrollo

1. PROGRAMAS ACADEMICOS Y CIENTIFICOS

Area(s) of specializaton: satellite meteorology

Lista de cursos y actividades de investigación: Está previsto en el Plan de Renovación Tecnológico del Instituto un gran desarrollo de la meteorología, adquiriendo estaciones receptoras, tanto primarias como secundarias, para la recepción de imágenes procedentes de satélites de finalidad meteorológica

Duración/Frecuencia/Idioma(s) de enseñanza: --/--/--

Tipo de servicios o instalaciones: --

Número de servicios o instalaciones: --

Calificaciones academicas (mínimas) requeridas: --

Certificados o diplomas extendidos por la institución: --

2. COSTO DE LOS PROGRAMAS

Costo de los cursos, de los libros de texto, y de los materiales de investigación afines: -

Gastos mensuales de alojamiento y manutención y gastos menudos: --

3. DISPONIBILIDAD DE ESTUDIO/BECAS

Disponibilidad de estudio/becas para participantes extranjeros: --

Otras posibilidades de ayuda financiera para participantes extranjeros: --

4. COLABORACION CON LOS PAISES EN DESARROLLO: Si

Esfera de interés: Meteorología mediante satélites

Region geográfica determinada: Ninguna

S R I L A N K A

ARTHUR C. CLARKE CENTRE FOR MODERN TECHNOLOGIES

Katubedda, Moratuwa, Sri Lanka

Tel.: 94-1-647678 Fax: 94-1-647462 E-mail: accmt@lanktap.tool.nl

Contact person: --

Principal function(s) of institution: To accelerate the process of introduction and development of modern technologies in the fields of communications, computers, space technologies and robotics through the provision of training, research and development facilities

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializatoin: remote sensing, satellite communications

Summary of courses and research activities: Applications of remote sensing data to ground water resources management, coastal monitoring, fishery and agriculture. Training in satellite communications.

Duration/Frequency/Language(s) of instruction: 2 weeks/Annually/English

Facilities: The Centre is making arrangements to set up a Space Applications Centre equipped with modern computer hardware and software. Joint programmes with Dept. of Surveys are under consideration.

Number of trainees: Around 20

Entry requirements: graduate level in science or engineering

Degree/Diploma/Certificate awarded: Certificate

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Remote sensing, GIS, space communications

Geographic preference: None

S W E D E N

A. SWEDISH NATIONAL SPACE BOARD

Box 4006, S-171 04 Solna, Sweden

Tel.: 46 8 627 64 80

Fax: 48 8 627 5014

Contact person: --

Principal function(s) of institution: Central planning and funding agency for Swedish space activities

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializatoin: basic space sciences, remote sensing, satellite communications

Summary of courses and research activities: The Swedish space science programme concentrates on four areas: magnetospheric and ionospheric physics, study of the upper atmosphere, astrophysics and material sciences, carried out at different institutes and university groups. Remote sensing programme also is carried out at different institutes and university groups. It concentrates on digital image processing and analysis, physical background of spectral and spatial signatures and microwave technique. Areas for remote sensing applications are: forestry, geology, meteorology, oceanography and hydrology, satellite data cartography, geographical information systems. Space communications, satellite and earth terminal systems, satellite control.

Duration/Frequency/Language(s) of instruction: --/--/--

Facilities: --

Number of trainees: --

Entry requirements: B.Sc., M.Sc. or Ph.D. depending on programme

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: Contact Swedish Institute, Box 7434, S-103 91, Stockholm or Swedish Embassy

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Contact Board for further information

Geographical preference: --

B. CHALMERS UNIVERSITY OF TECHNOLOGY, DEPARTMENT OF RADIO AND SPACE SCIENCE

S-412 96 Göteborg, Sweden

Tel.: 46-3-1810100

Contact person: Prof. J. Askne

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences, remote sensing, satellite communications

Summary of courses and research activities:

Courses: B.Sc. programme in space techniques. M.Sc. programme in remote sensing. M.Sc. programme in communications.

Research: Radioastronomical and geodetic applications. Microwave remote sensing applied to meteorology and oceanography.

Duration/Frequency/Language(s) of instruction: 4-6 hrs a week/Annually/Swedish, English

Facilities: Observatory with 20 and 25 m antennas equipped with receivers for 1-115 Ghz. Co-operating group for receiver developments, radiometer 52-58 GHz, computer facilities. Number of trainees: 1-2

Entry requirements: B.Sc.

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: No tuition, but the number of foreign students is limited

Monthly room and board and incidental expenses: \$US 350

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: Contact Swedish Institute, Box 434, S-103 91, Stockholm

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Related to ongoing research activities as stated above

Geographical preference: --

C. ROYAL INSTITUTE OF TECHNOLOGY, ALFVEN LABORATORY, DEPARTMENT OF PLASMA PHYSICS

S-100 44 Stockholm, Sweden

Tel.: 46 8 790 7685

Contact person: --

Principal function(s) of institution: Research and Education

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences

Summary of courses and research activities:

Courses: Space physics (Undergraduate course)

Research: Space plasma physics, especially auroral and magnetospheric physics

Duration/Frequency/Language(s) of instruction: 2 Weeks/Annually/English

Facilities: --

Number of trainees: --

Entry requirements: --

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: --

Geographical preference: --

D. SWEDISH INSTITUTE OF SPACE PHYSICS

Box 812, S-981 28 Kiruna, Sweden

Tel.: 46 980 79000

Contact person: Prof. B. Hultqvist

Principal function(s) of institution: Research and Education

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences

Summary of courses and research activities: Magnetospheric and ionospheric physics using satellite experiments for measurements of hot plasma and plasma waves, radar measurements of the ionosphere and optical measurements of upper atmosphere emissions, kinetic plasma theory

Duration/Frequency/Language(s) of instruction: --

Facilities: Technical departments for building satellite experiments; calibration facilities, space simulator chamber, etc.; Incoherent scatter radar; Fabry-Perot interferometers and many other kinds of optical instruments; Sounding rocket range (ESRANGE) at a short distance

Number of trainees: up to 4

Entry requirements: B.Sc. in physics

Degree/Diploma/Certificate awarded: Ph.D. degrees

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: No fees

Monthly room and board and incidental expenses: Room and board are not provided by the Institute

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Yes. One or two.

Other financial support available for foreign participants: Yes, 150,000 - 200,000 SEK/year

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: --

Geographical preference: --

E. SWEDISH SPACE CORPORATION

P.O. Box 4207, S-171 04 Solna, Sweden

Tel.: 46 8 627 6200 Fax: 46 8 987 069

Contact person: Hakan Hedberg

Principal function(s) of institution: From feasibility studies to the practical applications of space-related technologies

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializatoin: remote sensing, satellite communications

Summary of courses and research activities: Remote sensing - fundamentals of remote sensing (4 weeks summer school), remote sensing principles and techniques (1-5 weeks), satellites and sensors systems (1 week), ground receiving stations (6 weeks), photo lab practice (4 weeks), remote sensing applications (geology, forestry, water resources, etc.), digital image processing (3 days-2 weeks), image processing systems, geographical information systems, maritime surveillance systems. Space communications - communication systems design, satellite systems engineering, earth terminals systems engineering, satellite control, procurement and programme management of space and earth segments, zero-gravity processing, sounding rocket and balloon experiments, research satellites.

Duration/Frequency/Language(s) of instruction: 3 days-6 weeks/Annually/English

Facilities: Receiving station for LANDSAT and SPOT. Preprocessing systems. Image analysis systems. GIS-systems, photolabs. On-site and "hands-on" training can be provided for all aspects of a satellite communications system.

Number of trainees: Up to 30

Entry requirements: Depending on course. University degree, professional experience

Degree/Diploma/Certificate awarded: Certificates

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Separate quotations

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: To be decided on case by case basis

Other financial support available for foreign participants: To be decided on case by case basis

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: All practical aspects of remote sensing. Feasibility studies of regional and/or national satellite communications systems.

Geographical preference: None

F. STOCKHOLM UNIVERSITY, DEPARTMENT OF PHYSICAL GEOGRAPHY

S-106 91 Stockholm, Sweden
Tel.: 46 8 162000 Fax: 46 8 164818
Contact person: Mr. Dag Asvarn

Principal function(s) of institution: Education, training, R & D.

1. **ACADEMIC AND SCIENTIFIC PROGRAMMES**

Area(s) of specializaton: remote sensing

Summary of courses and research activities:

Courses: B.Sc. level: Yearly five-week full-time courses in air photo interpretation, satellite remote sensing (digital interpretation), GIS. Ph.D. level: Yearly five-week course in digital satellite remote sensing. All remote sensing courses are tailor-made to fit various student needs according to specialization, e.g. geology, vegetation mapping, etc. Also, yearly international five-week full time course in remote sensing, under the auspices of the United Nations Programme on Space Applications and the Government of Sweden. The course is organized for university and technical college teachers from Africa, South-East Asia and Latin America.

Research: Developing remote sensing methods for the inventory of natural resources and monitoring for environmental protection. Activities include: IR aerial photo interpretation, digital image analysis of TM, SPOT and other earth resources satellites, thermography from aircraft and satellites and studies of spectral and spatial signatures of various natural objects. Computer cartography and GIS development (R&D).

Duration/Frequency/Language(s) of instruction: Five weeks full time/Every year/Swedish (English - UN course)

Facilities: Ample equipment ranging from pocket stereoscopes to state-of-the-art GIS, image processing and analysis systems. Most equipment stationed in RS lab, but some equipment is mobile.

Number of trainees: Courses in Swedish: 16; international course: 24

Entry requirements: B.Sc. level: one-term full-time course in Earth Science or equivalent. Ph.D. and international course: B.Sc./M.Sc. or equivalent.

Degree/Diploma/Certificate awarded: International course: professional. All other courses: academic.

2. **COST OF PROGRAMMES**

Cost of tuition, texts and related research material: Free tuition; books, etc. at \$US 50.

Monthly room and board and incidental expenses: \$US 1,000

3. **SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES**

Scholarship/Fellowship opportunities for foreign participants: Yes.

Other financial support available for foreign participants: Yes. Varies. Generally fellowships, if at all given, will cover expenses for everything but tuition, which is free. A typical fellowship amount is up to \$US 1,000, which covers costs of living.

4. **COLLABORATION WITH DEVELOPING COUNTRIES**: Yes

Specific areas of interest: Remote sensing for natural resources management and monitoring for environmental protection

Geographical preference: Eastern and Southern Africa.

SYRIAN ARAB REPUBLIC

GENERAL ORGANIZATION OF REMOTE SENSING (GORS)

P.O. Box 12586, Damascus, Syrian Arab Republic
Tel.: 963-11-2218765, 2218764 Fax: 963-11-3910700
Contact person: Dr. Eng. Hussein Ibrahim, Director General

Principal function(s) of institution: Research, development, training and applications

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializatoin: remote sensing, satellite meteorology

Summary of courses and research activities:

Courses: Short-term training courses on remote sensing techniques and their applications at national, regional and international levels

Research: Remote sensing applications to survey, meteorology, agriculture, geology, hydrology, agriculture, mineral deposits, oil and gas, urban planning, regional planning and environment.

Duration/Frequency/Language(s) of instruction: 4-8 weeks/Annually/Arabic, English

Facilities: GORS is designed to offer facilities required for training, scientific research, living and recreational purposes. Equipment includes digital processing systems, photo labs, visual interpretation facilities, library, ground truth facilities.

Number of trainees: Between 20 and 30

Entry requirements: Undergraduate

Degree/Diploma/Certificate awarded: Professional degree certificate

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: US\$ 500 - 1,000

Monthly room and board and incidental expenses: US\$ 500 - 1,000

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Training specialists from Arab developing countries in implementing national projects

Geographical preference: Countries of the Arab League

T H A I L A N D

A. NATIONAL RESEARCH COUNCIL

196 Phahonyothin Road, Chatuchak, Bangkok 10900, Thailand
Tel.: 662-561-0619 Fax: 662-561-3035
Contact person: Dr. Suvit Vibulsresth, Deputy Secretary-General

Principal function(s) of institution: Training and research, satellite data reception and distribution

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializatoin: remote sensing

Summary of courses and research activities:

Courses: Hands-on training in remote sensing and GIS; hands-on training in digital image processing; training course/workshop on specific theme related to satellite application

Research: Application of remotely sensed data to various disciplines, such as forestry, land use, water resources, mapping, geology, oceanography and environmental monitoring

Duration/Frequency/Language(s) of instruction: 2-3 weeks/Annually/Thai; training courses/workshops - from 1-2 week to 1-2 months/Occasionally/English or Thai

Facilities: Conference/training rooms with capacity to accommodate up to 100 participants; MERIDIAN/MIPS image analysis system, SPANS GIS system, Procom 2 reflector; satellite ground receiving stations

Number of trainees: Between 10 and 40

Entry requirements: First degree in Basic or Earth Sciences

Degree/Diploma/Certificate awarded: Professional certificate

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Joint research, share research facilities, host training courses, seminars, conferences and symposiums with external financial support

Geographical preference: none

B. KASETSART UNIVERSITY, FACULTY OF FORESTRY

Bangkhen, Bangkok 10900, Thailand
Tel.: 579-0170 Fax: 561-4761
Contact person: Dr. Niwat Ruangpanit

Principal function(s) of institution: Education, research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing

Summary of courses and research activities: Application of remote sensing in forestry and land use studies

Duration/Frequency/Language(s) of instruction: 4 months/1 semester a year/Thai

Facilities: Up-to-date LANDSAT imageries and equipment for both visual interpretation and digital image processing

Number of trainees: Between 10 and 15

Entry requirements: B.Sc. (in forestry)

Degree/Diploma/Certificate awarded: M.Sc.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: \$US 250 a semester

Monthly room and board and incidental expenses: \$US 400

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: United Nations/ESCAP, FAO, UNDP and UNFP

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Application of remote sensing for national and regional vegetation mapping

Geographical preference: Asia and the Pacific region

C. CHULALONGKORN UNIVERSITY, DEPARTMENT OF ELECTRICAL ENGINEERING

Phya-thai Rd., Bangkok 10500, Thailand

Tel.: 2525001, ext. 183

Contact person: --

Principal function(s) of institution: Education, research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: satellite communications

Summary of courses and research activities: Development of communication satellites; frequencies and satellite orbit; multiple access; analog and digital satellite systems; characteristics of satellite transponder; intermodulation and AM/FM conversion; interference problems; earth station and system design considerations

Duration/Frequency/Language(s) of instruction: 12 weeks/3 hours per week/Thai

Facilities: IBM 3031

Number of trainees: Between 6 and 15

Entry requirements: Certificate

Degree/Diploma/Certificate awarded: Academic certificate

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: \$US 500 per course

Monthly room and board and incidental expenses: \$US 2,000

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: The UNESCO ASTINFONET Pilot project

Geographical preference: None

TRINIDAD AND TOBAGO

A. INSTITUTE OF MARINE AFFAIRS

P.O. Box 3160, Carenage Post Office, Trinidad and Tobago

Tel.: 809-634-4291/4 Fax: 809-634-4433

Contact person: Alan Duncan, Chief Information Officer

Principal function(s) of institution: Marine research (fundamental and applied), education, training

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing

Summary of courses and research activities: Processing, analysis and interpretation of data supplied on computer compatible tapes (CCTs) for geographical areas of interest to Trinidad and Tobago. The RS facility is expected to become operational early in 1992. In due course training will be provided for suitably qualified participants from the English-speaking Caribbean countries.

Duration/Frequency/Language(s) of instruction: --

Facilities: The basic computer hardware/software and CCTs have been ordered and are in varying stages of delivery.

Number of trainees: To be determined.

Entry requirements: An undergraduate degree in the natural sciences or mathematics

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Remote sensing applications and training

Geographical preference: --

B. METEOROLOGICAL SERVICE

Piarco International Airport, Piarco, Trinidad and Tobago

Tel.: 809-664-5465 Fax: 809-664-4009

Contact person: Mr. Steve Pollonais

Principal function(s) of institution: Meteorological, climatological and agrometeorological activities for national development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: satellite meteorology

Summary of courses and research activities: N/A

Duration/Frequency/Language(s) of instruction: No instructional programme-operational use only

Facilities: --

Number of trainees: --

Entry requirements: N/A

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: N/A

Monthly room and board and incidental expenses: N/A

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: N/A

Other financial support available for foreign participants: N/A

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Meteorological services/warning and alerting services for severe weather occurrences

Geographical preference: Caribbean Basin and Tropical zone of Atlantic Ocean

TURKEY

MARMARA RESEARCH CENTER, SPACE TECHNOLOGIES DEPARTMENT

P.O. Box 21, Gebze-Kocaeli, Turkey

Tel.: 90-262-6412300 Fax: 90-262-6412309 E-mail: ozel@yunus.tubitak.mam.gov.tr

Contact person: Prof. Dr. M.E. Ozel

Principal function(s) of institution: Research, development and training

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializatoin: basic space sciences, remote sensing

Summary of courses and research activities: Millimeter wave radio astronomy, spectroscopy, astrophysics. Remote sensing, image processing, GIS, microwave remote sensing instrumentation

Duration/Frequency/Language(s) of instruction: 2 weeks/--/English, Turkish

Facilities: 2m-size millimeter radio telescope, microwave and antenna laboratory, image processing/GIS laboratory

Number of trainees: aroud 10

Entry requirements: B.Sc., M.Sc. in physics, astronomy, engineering

Degree/Diploma/Certificate awarded: course diploma

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: US\$ 500/course

Monthly room and board and incidental expenses: approx. US\$ 500

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: remote sensing, GIS, radio astronomy, astrophysics, radio/radar instrumentation

Geographical preference: None

U G A N D A

A. DEPARTMENT OF METEOROLOGY

P.O. Box 7025, Kampala, Uganda
Tel.: 256-41-258537 Fax: 256-41-256166
Contact person: Mr. S.A.K. Magezi

Principal function(s) of institution: research and training)

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: satellite meteorology

Summary of courses and research activities: Basic and radar meteorology, cloud search, climate change studies

Duration/Frequency/Language(s) of instruction: 3 months/Annual/English

Facilities: Meteorological training school and satellite receiver equipment

Number of trainees: up to 20

Entry requirements: Higher school certificate (Physics and Math)

Degree/Diploma/Certificate awarded: Professional

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Variable

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Study tours and research information exchange

Geographical preference: --

B. SURVEY TRAINING SCHOOL

P.O. Box 89, Entebbe, Uganda
Tel.: 20842
Contact person: Commissioner, Dept. of S & M

Principal function(s) of institution: Training

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing

Summary of courses and research activities: astronomy and photogrammetry.(at diploma language), remote sensing

Duration/Frequency/Language(s) of instruction: 2 year/Annually/English

Facilities: --

Number of trainees: between 15 and 20

Entry requirements: Credit passes in English, Math, Geography and Phys/Physical Science

Degree/Diploma/Certificate awarded: Diploma

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: \$US 1,000 per student per year

Monthly room and board and incidental expenses: \$US 1,000

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Remote sensing

Geographical preference: RCSSMRS, Kenya

U K R A I N E

A. KIEV UNIVERSITY, DEPARTMENT OF ASTRONOMY

Glushkov prospect 6, 252022, Kiev, Ukraine

Tel.: 44-2664507

Contact person: Prof. N. Ya. Kotsarenko

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences

Summary of courses and research activities: Active experiments in the ionosphere and magnetosphere with electron and plasma beams, Ba clouds, Optical observations and simulations. Space Physics course for students.

Duration/Frequency/Language(s) of instruction: Year/Permanent/Russian

Facilities: Theoretical support of active space experiments. Optical observations of phenomena related to the experiments.

Number of trainees: --

Entry requirements: Higher education

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Active space experiments

Geographical preference: None

B. N. G. KHOLODNY INSTITUTE OF BOTANY OF THE ACADEMY OF SCIENCES OF UKRAINE

Repin Str. 2, 252601 Kiev-4, Ukraine

Tel.: 44-2244041, 44-2123236

Contact persons: Elizabeth L. Kordyum, Alexander I. Vasilenko

Principal function(s) of institution: Research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences

Summary of courses and research activities: Space biology, gravitational biology, cell biology, space radiobiology - cell effects of High-LET particles

Duration/Frequency/Language(s) of instruction: --

Facilities: Modern equipment and methods for studying plant cell biology and for simulating microgravity

Number of trainees: between 2 and 5

Entry requirements: --

Degree/Diploma/Certificate awarded: Yes

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Yes, 2 available.

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Gravitational biology and space radiobiology. Investigations into cell, subcellular and molecular levels.

Geographical preference: --

UNITED KINGDOM OF GREAT BRITAIN
AND NORTHERN IRELAND

A. DUNDEE UNIVERSITY

Dundee DD1 4HN, Scotland, United Kingdom

Tel.: 382 23181 Fax: 382-202830

Contact person: Dr. R.A. Vaughan, Department of Applied Physics and Electronic and Manufacturing Engineering

Principal function(s) of institution: Training and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences, remote sensing, satellite communications, satellite meteorology

Summary of courses and research activities: Physics, electronics and electrica engineering first degree courses. Postgraduate courses in remote sensing. Research in remote sensing, surface physics, electronics. M.Sc. course in remote sensing, image processing and applications; Dip. Sc. course in digital mapping and remote sensing.

Duration/Frequency/Language(s) of instruction: 4 years; 1 year M.Sc.; 9 months Dip. Sc./Annually/English

Facilities: Fully equipped teaching laboratories, computing facilities, image display system

Number of trainees: Between 5 and 80

Entry requirements: High school qualifications or degree depending on programme

Degree/Diploma/Certificate awarded: B.Sc., M.Sc., Dip. Sc., Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: B.Sc. - 2,500 British Pounds (home and EEC), 6,630 British Pounds (overseas); Dip.Sc. and M.Sc. - 2,104 British Pounds (home and EEC), 6,630 British Pounds (overseas) (1991-92 figures)

Monthly room and board and incidental expenses: 500 British Pounds

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Yes

Other financial support available for foreign participants: ODA/British Council; must be applied for in foreign applicant's own country

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Atmospheric effects, bathymetry, underground coal fires, geological studies, sea surface temperatures, software development, environmental monitoring, mapping, education and training

Geographical preference: None

B. IMPERIAL COLLEGE, SPACE AND ATMOSPHERIC PHYSICS GROUP

Blackett Laboratory, Imperial College, London SW7 2BZ, United Kingdom

Tel.: (071) 589 5111 Ext. 6752 Fax: (071) 823 8250

Contact person: Prof. S.W.H. Cowley

Principal function(s) of institution: Education, research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences

Summary of courses and research activities: Research in space plasma physics, atmospheric physics and oceanography

Duration/Frequency/Language(s) of instruction: 3 years/Annually/English

Facilities: In-house microVAX cluster, workstations, personal computers; Laboratory for space instrumentation

Number of trainees: 3 for overseas students

Entry requirements: B.Sc. (Hons.)

Degree/Diploma/Certificate awarded: M.Phil., Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Full time Postgraduate research - 2,000 British Pounds per annum (UK/EEC students), 6,300 British Pounds per annum (overseas students)

Monthly room and board and incidental expenses: 500 British Pounds (approx.)

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: ORS scheme reduces fees for selected overseas students to UK/EEC level; British Council scholarships

Other financial support available for foreign participants: Teaching assistantship

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Atmospheric physics; remote sensing; oceanography; climate change

Geographical preference: None

C. SILSOE COLLEGE

Silsoe Bedford MK 45 4DT, United Kingdom

Tel.: (0) 525-60428 Fax: (0) 525-61527

Contact person: M.A. Keech, Dr. J.C. Taylor

Principal function(s) of institution: Training, education, research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences, remote sensing

Summary of courses and research activities:

Courses: A review of the basic science and related remote sensing is provided in all land resource planning and applied remote sensing courses. Radiometric data is collected using an advanced hand held radiometer and related to satellite data

Research: Use of aerial photography, microwave and multispectral data applied to agriculture, forestry and urban development. 12 to 14 M.Sc. theses are produced on various aspects of the subjects each year

Duration/Frequency/Language(s) of instruction: Short courses 1 to 12 weeks; Diploma-9 months; Ph.D.-3 years. English with possibility of instructions in Portuguese

Facilities: Mirror stereoscope Interpretoscope, CP1 plotter, radial line plotter, 2 GEMS image analyzers and vast resources of photographic and satellite hard copy, maps - through the Regional Centre of the National Remote Sensing Centre - CCT's of Landsat data. Many desktop image analyzers. 3 Tydac-SPAN GIS system.

Number of trainees: 60

Entry requirements: For Diploma - a 2ii hons., a lower qualification is acceptable for strongly motivated students; for M.Sc. - a 1st or 2nd class hons.

Degree/Diploma/Certificate awarded: Yes

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Diploma - about 8,000 British Pounds per year, M.Sc. - about 11,000 000 British Pounds per year (excluding accommodation for non-EEC students).

Monthly room and board and incidental expenses: 240 British Pounds per month; British Council award

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Usually British Council funds overseas students

Other financial support available for foreign participants: FAO, BC, ADB awards, Ford Foundation, etc.

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Range recording, vegetation discrimination, crop survey, archaeological investigation.

Geographical preference: Niger, Brazil, Kenya, Nigeria, Saudi Arabia, Zimbabwe, Ethiopia, India, Pakistan, Sudan

D. UNIVERSITY OF LEICESTER, DEPARTMENT OF PHYSICS AND ASTRONOMY

Dept. of Physics and Astronomy, University, Leicester, LE 1 7 RH, United Kingdom

Tel.: (0) 533-523509 Fax: (0) 533 550182

Contact person: Prof. K.A. Pounds, FRS

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializatoin: basic space sciences

Summary of courses and research activities: Research in X-ray astronomy, earth observation, solar system

Duration/Frequency/Language(s) of instruction: 3 terms/1 or 2 years/English

Facilities: Wide range of experimental equipment, test facilities, computing and expertise, built up over 25 years as an active Space Science Group

Number of trainees: Between 8 and 10 per year

Entry requirements: Degree (1st and 2nd class hons.) in Physics, Maths or Engineering

Degree/Diploma/Certificate awarded: Ph.D., M.Phil

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: 8,000 British pounds per year

Monthly room and board and incidental expenses: 300 British Pounds

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Research in X-ray astronomy, earth observation, solar system

Geographical preference: None

E. UNIVERSITY OF SURREY, CENTRE FOR SATELLITE ENGINEERING RESEARCH

Guildford GU 25XH, United Kingdom

Tel.: 483-509131 Fax: 483-34139

Contact person: Prof. B.G. Evans

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializatou: basic space sciences, satellite communications

Summary of courses and research activities: M.Sc. programmes in satellite engineering, telematics, satellite communications engineering. Research in satellite communications and spacecraft engineering, including on-board processing; satellite communications studies and networks; satellite engineering/communications; antennas and propagation; coding and satellite engineering/communication; modulation; command and checkout; reduced bit rate speech; access schemes. Also one week courses on satellite communications, spacecraft engineering, introduction to advanced networks.

Duration/Frequency/Language(s) of instruction: 1 year/Annually/English (M.Sc.)

Facilities: Satellite integration and testing facility; checkout and command system. Labs in DSP, speech processing, simulation, RF and digital processing.

Number of trainees: Up to 40 (M.Sc. course), up to 10 (research). Special training schemes can be organized outside the M.Sc. course and possibly in collaboration with industry

Entry requirements: M.Sc., 2 (i) B.Sc. or equivalent

Degree/Diploma/Certificate awarded: M.Sc., Ph.D. and Diploma

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Fees (overseas) 6,500 British Pounds per year; maintenance 4,000 British Pounds per year. One week course -750 British Pounds

Monthly room and board and incidental expenses: 400 British Pounds

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: British Council; ITU fellowships; Commonwealth scholarships; University scholarships for research

Other financial support available for foreign participants: Various

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes
Specific areas of interest: Low cost satellites; applications of LEO satellites; domestic and regional systems; spacecraft engineering; on-board processing, speech processing.
Geographical preference: None

F. ABERDEEN UNIVERSITY

Bedford Road, Aberdeen, AB9 2VE, United Kingdom
Tel.: 44-224-272778 Fax: 44-224-491179
Contact person: C.T. Spracklen

Principal function(s) of institution: Education, Research and Development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences, satellite communications

Summary of courses and research activities: --

Duration/Frequency/Language(s) of instruction: 1 semester/Yearly/English

Facilities: Workstations; satcom, simulation and experimental facilities

Number of trainees: up to 30

Entry requirements: appropriate first degree

Degree/Diploma/Certificate awarded: M.Sc., Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: 6,000 British Pounds per year

Monthly room and board and incidental expenses: 300 British Pounds per month

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Yes, 10 available.

Other financial support available for foreign participants: Yes. Full cost of tuition and living expenses

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Satellite communications

Geographical preference: None

G. UNIVERSITY OF BRISTOL

University Of Bristol, Bristol BS 8 1SS, United Kingdom

Contact persons: Mark Hemsell, Department Of Aerospace Engineering, Tel.: 44-272-303264, Fax: 44-272-251154; Dr. E.C. Barrett, Director, Remote Sensing Unit, Tel.: 44-272-303745, Fax: 44-272-732657; Professor J.P. McGeeham, Centre for Communications Research, Tel.: 44-272-303259, Fax: 44-272-255265.

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences, remote sensing, satellite communications, satellite meteorology

Summary of courses and research activities: Space Technology Module on B. Eng. Course. Research in small satellite production, space station architecture, space infrastructures; rocket engine nozzles, materials for advanced launchers, space station habitability, hypersonic aerodynamics (including CFD); hybrid rocket engines. Electric propulsion, spacecraft attitude sensors, spacecraft structures. M.Sc. and Ph.D. degree programmes (both by research) in remote sensing and satellite meteorology and climatology. Final year undergraduate degree course option in satellite communications. R&D activities in satellite communications technique and satellite navigation systems.

Duration/Frequency/Language(s) of instruction: 1- 3years/Annually/English

Facilities: Numerous lecture theatres and well founded research laboratories and support staff. Super computing network. Network of SUNs equipped with ERDAS, LUCID, GRAS, ARC-INFO and other RS and GIS software packages; TDS HR-48/OPUS PC digitizing system and supporting; peripheral and additional equipment: Joyce Loeb1 scanning microdensitometer; analytical 16-MM projector, etc.; access to University Optronics Protoscan and Magiscan systems. Meteosat PDUS, DMSP-SSM/IPB2 systems

Number of trainees: Up to 85 (depending on programme)

Entry requirements: Matriculation (undergraduate); good honours Bachelor's degree (postgraduate)

Degree/Diploma/Certificate awarded: B.Eng., M.Sc., Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Varies

Monthly room and board and incidental expenses: Varies

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Some fellowships may be available (should be negotiated with University of Bristol). There also are opportunities for normal ORS scholarships for non-EEC students.

Other financial support available for foreign participants: Details available from British Council; World University Service, etc.

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Space technology. Satellite communications. Development of integrated algorithms for operational use to solve atmosphere-related problems at the Earth's surface with applications in meteorology, climatology, hydrology, oceanography, land use, agriculture and geology.

Geographical preference: None

H. UNIVERSITY OF KENT, PHYSICS LABORATORY

Physics Laboratory, University of Kent, Canterhury, Kent, CT27NR, England

Tel.: (0)227-764000 Fax: (0)227-762616

Contact person: Dr. J.C. Zarnecki

Principal function(s) of institution: Education and Research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences, satellite communications

Summary of courses and research activities:

Courses: Undergraduate degree course "Physics with Space Science and Systems" leading to the B.Sc. degree. Some coverage of satellite communications is included within the undergraduate teaching of the Electronic Engineering Laboratories.

Research: Cosmic dust and space debris; planetary bodies; participation in Giotto, LDEF, Cassini, Ulysses, Galileo, CRAF, MARS '94, EURECA, etc. missions.

Duration/Frequency/Language(s) of instruction: 3 year degree course/every year/English

Facilities: Hypervelocity Dust Impact Facility; normal laboratory support (electronic and mechanical engineering); extensive computing, networking and library facilities

Number of trainees: up to 30

Entry requirements: For undergraduate entry, the equivalent of UK A level passes (2 minimum); for Postgraduate study a good first degree at a recognized University.

Degree/Diploma/Certificate awarded: B.Sc., M.Sc., M. Phil, Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Undergraduate: UK and EEC - 2,783 p.a., Overseas - 6,253 p.a.; Postgraduate: UK and EEC - 1,985 p.a., Overseas - 6,730 p.a.

Monthly room and board and incidental expenses: 816 - 1,040 British pounds per academic year

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Yes. One fellowship.

Other financial support available for foreign participants: Yes. The above refers to a specific University of Kent fellowship/scholarship. There are many other scholarships available nationally, through a large number of organizations (e.g. Royal Society, British Council, etc.)

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes.

Specific areas of interest:

Geographical preference: None

I. UNIVERSITY OF MANCHESTER, NUFFIELD RADIO ASTRONOMY LABORATORIES

Jodrell Bank, Macclesfield, Cheshire, SK11 9DL, United Kingdom

Tel.: (0)-477-71321

Fax: (0)-477-71618

Contact person: Dr. R. J. Cohen

Principal function(s) of institution: Research and education

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences

Summary of courses and research activities:

Courses: M.Sc. course in Radio Astronomy (1 year) (also registration for 3 year Ph.D. course in Radioastronomy)

Research: Radio astronomical studies of stars, pulsars, the galaxy, AGN, Radio galaxies, Quasars,

Cosmology and the cosmic microwave background. High angular resolution studies using MERLIN and VLBI (including planning for space VLBI), the development of low noise RF receivers.

Duration/Frequency/Language(s) of instruction: 12 months/Annually/English

Facilities: 76m Lovell telescope; Merlin Array; European VLBI Network (EVN); Data processing and image analysis facilities

Number of trainees: between 4 and 10

Entry requirements: Equivalent of UK second class honours Bachelor of Science Degree in Physics or related discipline

Degree/Diploma/Certificate awarded: M.Sc.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: EC students - 2,500 British Pounds; Others, 6,500 British Pounds

Monthly room and board and incidental expenses: Approx. 4,500 British Pounds/year

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: A small number of Research Studentships are available from the University of Manchester. They cover fees plus a living allowance. Competition is high.

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Radio Astronomical research

Geographical preference: None

J. UNIVERSITY OF NOTTINGHAM, INSTITUTE OF ENGINEERING, SURVEYING AND SPACE GEODESY

University Park, Nottingham, NG7 2RD, United Kingdom

Tel.: (0)-602-484848

Contact person: Dr. M.J. Smith, Admission Coordinator

Principal function(s) of institution: Education and Research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializatoin: basic space sciences, remote sensing

Summary of courses and research activities:

Courses: M.Sc. courses (full time-1 year, part time-2 years) in Engineering, surveying and geodesy; navigation studies; geographic information systems; International GPS seminar (annual). One week specialized courses on satellite navigation, engineering, surveying and geodesy.

Research: Satellite navigation and positioning systems; GPS; laser ranging to satellites; satellite orbit determination. Remote sensing, image processing, environmental impact assessment, artificial intelligence. Land use planning, coastal and marine applications

Duration/Frequency/Language(s) of instruction: --/yearly/English

Facilities: GPS receivers (Geodetic), computer facilities and software (in-house)

Number of trainees: Between 4 and 10

Entry requirements: MSc courses - first degree (BSc) or equivalent; Research - good first degree
Degree/Diploma/Certificate awarded: M.Sc., M.Phil. or Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: M.Sc. and research programmes: 2,104 British Pounds for home and EC students, and 6,630 British Pounds for overseas students; short courses - approx. 100 British Pounds per day.

Monthly room and board and incidental expenses:

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: Yes

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: --

Geographical preference: --

K. SOUTHAMPTON UNIVERSITY

Highfield, Southampton, United Kingdom

Tel.: (0)-703-593516

Contact person: Dr. A. R. L. Tatnall

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences

Summary of courses and research activities: Space system and technology - 2 or 1 week course for representatives of industry. It gives a broad view of the spacecraft as a system made up of a number of subsystems working in harmony. Lectures on all aspect of spacecraft are given by University staff and outside speakers. A project is a major element of the 2 weeks course.

Duration/Frequency/Language(s) of instruction: 2 weeks/2 courses every year/English

Facilities: --

Number of trainees: between 15 and 45

Entry requirements: Graduates

Degree/Diploma/Certificate awarded: Certificate

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Varies on response/course type

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: --

Geographical preference: --

L. BRITISH GEOLOGICAL SURVEY

Nicker Hill, Keyworth, Nottingham NG 12 5 GG, United Kingdom

Tel.: (0)-6077-6111 Fax: (0)-6077-2193/6602

Contact person: Dr. D. Greenbaum

Principal function(s) of institution: Geological surveying and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing

Summary of courses and research activities:

Duration/Frequency/Language(s) of instruction: 3 to 6 weeks/2 per year (according to demand).

Longer, individual training/research by arrangement/English

Facilities: I2S and ERDAS interactive image processing systems; photogeological instruments

Number of trainees: Between 6 and 12

Entry requirements: Degree in geology

Degree/Diploma/Certificate awarded: Professional

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Dependent on numbers. Course texts provided.

Monthly room and board and incidental expenses: Does not usually arise as courses are given in the developing country

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: Funding may be available via ODA and British Council.

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: All aspects of geological remote sensing (including photogeology)

Geographical preference: All regions.

M. INSTITUTE OF OCEANOGRAPHIC SCIENCES

Wormley, Godalming, Surrey GU8 5UB, United Kingdom

Tel.: (0)-42-879-4141

Contact person: Dr. T.D. Allan

Principal function(s) of institution: Research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing

Summary of courses and research activities: No formal teaching. Research scientists or post-graduates can be accommodated at the Institute for short stays

Duration/Frequency/Language(s) of instruction: --/--/--

Facilities: Image processors, computer programmes, plotters, etc.

Number of trainees: Between 1 and 2

Entry requirements: Prefer Ph.D. in physics, geology and oceanography

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: None

Monthly room and board and incidental expenses: 100 British Pounds per week

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Remote sensing, especially over the North Atlantic and/or Mediterranean Sea

Geographical preference: North Atlantic, Mediterranean Sea

N. NATIONAL REMOTE SENSING CENTRE LTD

North Gate Road, Farnborough, Hampshire, GU14 6TW, United Kingdom

Tel.: (0)-252-541464

Contact person: Mr. Neil Pattie

Principal function(s) of institution: Supply of products and services based on information derived from data acquired by earth observation satellites and sensors.

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing

Summary of courses and research activities: Research and development in all aspects of remote sensing of the Earth, including image processing, image classification techniques and applications of all types of satellite remote sensing data. Research into applications of GIS and integration of remotely sensed data into GIS.

Duration/Frequency/Language(s) of instruction: --/--/--

Facilities: Data archives, image processing equipment, computer systems

Number of trainees: --

Entry requirements: --

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Possible

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: No

Specific areas of interest: --

Geographical preference: --

0. NATURAL ENVIRONMENT RESEARCH COUNCIL, INSTITUTE OF TERRESTRIAL ECOLOGY

Environmental Information Centre, Monks Wood Experimental Station, Abbots Ripton, Huntingdon, Cambs PE17 2LS, United Kingdom

Tel.: (0)-48-73-381

Contact person: Dr. B.K. Wyatt

Principal function(s) of institution: Research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing

Summary of courses and research activities: Use of remote sensing for land-cover mapping and monitoring; vegetation community mapping and habitat studies; biomass estimation; grassland ecosystem studies; rangeland management

Duration/Frequency/Language(s) of instruction: --/--/--

Facilities: Image analysis equipment (I2S Model 75); local area network based on micro VAX processors, with network connection to various mainframes; photographic processing facilities; access to United Kingdom Image Archives; photointerpretation facilities; ecological research laboratories; arrangements for joint training with Silsoe College and with Department of Geography at Cambridge University

Number of trainees: Between 1 and 3

Entry requirements: First degree in an environmental science

Degree/Diploma/Certificate awarded: M.Sc. or Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Between 1,600 British Pounds and 4,000 British Pounds per year

Monthly room and board and incidental expenses: Between 3,000 British Pounds and 3,500 British Pounds per year

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Variable (British Council)

Other financial support available for foreign participants: Various aid agencies

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: See above

Geographical preference: Africa

P. UNIVERSITY COLLEGE LONDON, DEPARTMENT OF PHOTOGRAMMETRY AND SURVEYING

Gower Street, London WC1E 6BT, United Kingdom

Tel.: 01-387-7050

Contact person: Prof. I.J. Dowman

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializatou: remote sensing

Summary of courses and research activities: M.Sc. in remote sensing; M.Sc. in photogrammetry; M.Sc. in Geodesy; M.Sc. in geographical and geodetic information systems.

Duration/Frequency/Language(s) of instruction: 1 year/Annually/English

Facilities: Image processing (I2S); photogrammetric equipment; SUN work-stations; VAX II GPX; image processing and GIS software packages.

Number of trainees: Remote sensing - between 10 and 20; Photogrammetry - between 3 and 12; Geodesy - 4-8; GGIS - 5-15.

Entry requirements: 1st degree Iiii class

Degree/Diploma/Certificate awarded: M.Sc. and diploma (Academic)

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: 2,104 British Pounds (home students); 7,775 British Pounds (overseas)

Monthly room and board and incidental expenses: Between 400 and 500 British Pounds

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Mapping

Geographical preference: Egypt, Middle East, Malaysia

Q. UNIVERSITY OF ASTON, REMOTE SENSING UNIT

Dept. of Civil Engineering, Aston University, Birmingham B4 7ET, United Kingdom

Tel.: (0)-21-359-3611 Fax: (0)-21-333-3389

Contact person: Dr. W. Gordon Collins

Principal function(s) of institution: Research, education, training, consultancy

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing

Summary of courses and research activities:

Courses: (i) specialized training in remote sensing, 1 month to 1 year; (ii) post graduate research for higher degrees

Research: Remote sensing applications to land and water resources, natural resources

Duration/Frequency/Language(s) of instruction: Training: 1-12 months/on demand /English; Research: 2-4 years/every year/English

Facilities: Adequate equipment for using aerial photographs and digital satellite images, for Earth and environmental sciences and GIS.

Number of trainees: Between 1 and 10

Entry requirements: Training - none; Research - first degree in relevant subject

Degree/Diploma/Certificate awarded: M. Phil. or Ph.D. degree

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Training - 1,200 British Pounds per month; Research - 650 British Pounds per month

Monthly room and board and incidental expenses: British Pounds 300

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Land and water resources, forestry, agriculture

Geographical preference: Tropical countries.

R. UNIVERSITY OF LONDON, SCHOOL OF ORIENTAL AND AFRICAN STUDIES

Thornhaugh St., London WC1H 0XG, United Kingdom

Tel.: 01-6372388 Fax: 071-4363844

Contact person: Dr. J.A. Allan

Principal function(s) of institution: Education, research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing

Summary of courses and research activities:

Courses: Undergraduate course in remote sensing; M.Sc. programmes in remote sensing and GIS.

Research: Remote sensing applied to land and water inventory and monitoring especially in the Middle East and North Africa; data capture, data processing, terrain modelling, RS data applications.

Duration/Frequency/Language(s) of instruction: 9 months/Annually/English; M.Sc. programmes: 12 months/annually/English

Facilities: Equipment for photo-interpretation, stereoscopes; access to I2S digital image processing equipment; SUN workstations; IBM and Apple PCs.

Number of trainees: Between 10 and 25

Entry requirements: Must be a member of a second or third course in London University; M.Sc. programme - good first degree in science or environmental sciences

Degree/Diploma/Certificate awarded: The course is a unit (Approx. 1/10) of a London degree; M.Sc.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Part of fees, approx. 300 British Pounds; M.Sc. programmes - 6,500 British Pounds (1991)

Monthly room and board and incidental expenses: M.Sc. - 500 British Pounds

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Through British Council

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES

Specific areas of interest: Renewable resource monitoring in Asia and Africa

Geographical preference: Middle East and North Africa

S. UNIVERSITY OF BRADFORD

University of Bradford, BD7 1DP, United Kingdom

Contact persons: Prof. J. Stephenson, Department Of Computing, Tel.: 44-274-383951, Fax: 44-274-383920; Dr. P.S. Excell, Prof. S.K. Barton, Department Of Electrical Engineering, Tel.: 44-274-733466

Principal function(s) of institution: Education, research, development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing, satellite communications, satellite meteorology

Summary of courses and research activities:

Courses: PC-based low cost reception systems for METEOSAT/GOES/NOAA-AVARR, etc. Real time capture and image processing. Rainfall estimation from METEOSAT, MDD/DCP. Remote sensing is also included in Senior year undergraduate courses on Imaging Radar. Satellite communications is a part of an M.Sc. course in RF Communication Systems.

Research: Image processing tools; reliable fault tolerant capture software; automatic alarm software from series of images (storms, fires) from Meteosat/NOAA; database systems (temporal) for images. Detection and quantification of sand and dust storms using LANDSAT/ERS-1, etc. Research in basic scattering properties (microwave to optical) of atmospheric particulates. Research in design of receivers and image segmentation algorithms for NOAA/AVHRR and METEOSAT/GOES. Research in slant-path propagation for Fixed and Land mobile Satellite Services; in modulation, coding and access techniques for satellite communications.

Duration/Frequency/Language(s) of instruction: 1-2 weeks/yearly/English

Facilities: Real time capture of Meteosat/NOAA digital data. Also of DCP/MDD data from Meteosat. Extensive PC based image processing systems. Many SUN-UNIX systems. Archive of LANDSAT images. Optical propagation software. Airborne transmitter, vehicle equipped as receiver. Microwave laboratories. Anechoic chambers. Simulation software. Oxenhope Moor Experimental Station. Satellite receivers.

Number of trainees: Variable

Entry requirements: B.Sc.

Degree/Diploma/Certificate awarded: M.Sc., M.Phil., Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: approx. 6,500 British Pounds per annum for non-EC students

Monthly room and board and incidental expenses: approx. 1,000 British Pounds

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Yes

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: --

Geographical preference: None

T. UNIVERSITY OF EDINBURGH, DEPARTMENT OF METEOROLOGY

King's Buildings, Edinburgh, United Kingdom

Tel.: (0)-31-650-5101

Contact person: Head of Department

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing, satellite meteorology

Summary of courses and research activities:

Courses: M.Sc. in Remote Sensing and Image Processing Technology

Research: Research into (i) stratospheric compositions and dynamics using satellites, (ii) radiative transfer in the atmosphere, (iii) strategies for using satellite data in ocean models, and (iv) cloud classification by textural and spectral techniques.

Duration/Frequency/Language(s) of instruction: 12 months/every year/English

Facilities: Computer hardware, data links, image processing systems, Meteosat receiver

Number of trainees: up to 5

Entry requirements: Honours degree in Physical Science or Mathematics

Degree/Diploma/Certificate awarded: M.Sc. or diploma for taught programme; Ph.D. or M.Phil. for research.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: 7,000 British Pounds for non-EC participants

Monthly room and board and incidental expenses: 330 British Pounds

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES
Scholarship/Fellowship opportunities for foreign participants: None
Other financial support available for foreign participants: Yes. ORS (difference between overseas and home fees); British Council (full costs)
4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes
Specific areas of interest: Could be negotiated
Geographical preference: --

U. UNIVERSITY OF GLASGOW, DEPARTMENT OF GEOGRAPHY & TOPOGRAPHIC SCIENCE

Glasgow G12 8QQ, United Kingdom

Tel.: 44-41-339-8855

Contact persons: David A. Tout (undergraduate programme); John W. Shearer (postgraduate programme)

Principal function(s) of institution: Education

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing

Summary of courses and research activities:

Courses: Part of undergraduate Degree in Topographic Science; Postgraduate diploma in Photogrammetry and Remote Sensing

Research: Use of Remote Sensing in Topographic mapping, especially in developing countries

Duration/Frequency/Language(s) of instruction: UG-4 year degree/Annual/English; PG-1 year Diploma/Annual/English

Facilities: Photogrammetric plotting instruments, Image Processing, extensive computing equipment

Number of trainees: --

Entry requirements: University Entrance or Previous Degree

Degree/Diploma/Certificate awarded:

2. COST OF PROGRAMMES
Cost of tuition, texts and related research material: Variable
Monthly room and board and incidental expenses: Variable
3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES
Scholarship/Fellowship opportunities for foreign participants: Yes
Other financial support available for foreign participants: Yes. Variable
4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes
Specific areas of interest: Remote Sensing
Geographical preference: --

V. KEELE UNIVERSITY

Keele, Staffordshire, United Kingdom

Tel.: (0)-782-621111

Contact person: Dr. A.J. Parsons

Principal function(s) of institution: Education and Research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing

Summary of courses and research activities: Remote sensing is taught within Geography course in 2nd and 3rd years for Post Graduate Students. Research in applications of remote sensing to urban land-use studies, archaeological studies, agricultural studies

Duration/Frequency/Language(s) of instruction: 12-18 weeks/yearly/English

Facilities: Image Processing Software

Number of trainees: Up to 10

Entry requirements: Matriculation

Degree/Diploma/Certificate awarded: Bachelor's, Master's & Doctoral Degrees

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material:

Monthly room and board and incidental expenses: 300 British Pounds

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Urban land-use and archaeological studies, agricultural studies

Geographical preference: None

W. UNIVERSITY OF READING, DEPARTMENT OF METEOROLOGY

2 Earley Gate. Reading RG6 2AU, United Kingdom

Tel.: (0)-734-875123

Contact person: Mr. G. Dugdale, Dr. J.R. Milford

Principal function(s) of institution: Education and Research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing, satellite meteorology

Summary of courses and research activities: Short lecture courses within B.Sc. and M.Sc programmes in meteorology. Research on applications of METEOSAT data in African tropical meteorology, particularly with regard to rainfall. Short courses for training in operational rainfall estimation. Research on storm climatology, modelling and forecasting in Africa.

Duration/Frequency/Language(s) of instruction: 20-30 hours/annually/English; training courses:
2 weeks - 3 months/occasional/English
Facilities: Meteosat & NOAA AVHRR receivers; GEMSOFT and SUN workstation
Number of trainees: Up to 12
Entry requirements: B.Sc.
Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Satellite meteorology training - 1,000 British Pounds per month per person
Monthly room and board and incidental expenses:

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants:
Other financial support available for foreign participants:

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest:
Geographical preference: None

X. UNIVERSITY OF SHEFFIELD, DEPARTMENT OF GEOGRAPHY

University of Sheffield, 510 2TN U.K.
Tel.: (0)-742-768555 Fax.: (0)-742-722199
Contact person: Dr. C.D. Clark

Principal function(s) of institution: Education and Research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing

Summary of courses and research activities: Two taught courses, aimed at 2nd and 3rd year undergraduates, but also available as a diploma course. Research activity in a large-scale geography, particularly glacial, and in marine applications. Any research activity considered.

Duration/Frequency/Language(s) of instruction: 6 months/every year/English
Facilities: Remote Sensing/GIS laboratory including Sun workstations running ERDAS and ARC/INFO. Two teaching/ research staff.
Number of trainees: Up to 20
Entry requirements: Degree in Science, Earth Science or similar.
Degree/Diploma/Certificate awarded: Diploma, M.Phil, Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Costs available upon application.
Monthly room and board and incidental expenses:

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --
Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes
Specific areas of interest: --
Geographical preference: --

Y. BRITISH TELECOM INTERNATIONAL TRAINING COLLEGE

Leafield, Oxford, England OX 8 5PB, United Kingdom
Tel.: (0)-993-87261
Contact person: --

Principal function(s) of institution: Vocational training/education

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializatoin: satellite communications

Summary of courses and research activities: Satellite earth station principle and practice.
Supplementary courses: principles of digital logic; digital transmission techniques; microwave link analyzer; microwave theory and measurements; Satstream training.

Duration/Frequency/Language(s) of instruction: 6 weeks/On demand/English, supplementary courses between 1 and 3 weeks duration

Facilities: Fully equipped lecture rooms and practical facilities

Number of trainees: Between 6 and 12

Entry requirements: Diploma in communication studies

Degree/Diploma/Certificate awarded: Certificate of attendance

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: 2,418 British Pounds; supplementary courses between 360 British Pounds and 1,365 British Pounds

Monthly room and board and incidental expenses: 10 British Pounds + VAT weekly

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Operation and maintenance of satellite earth stations

Geographical preference: None

Z. UNIVERSITY OF ESSEX, DEPARTMENT OF MATHEMATICS

Wivenhoe Park, Colchester C043SQ, United Kingdom
Tel.: 44-206-873040 Fax: 44-206-873598
Contact person: Professor A.R. Holt

Principal function(s) of institution: Education and Research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: satellite communications, satellite meteorology

Summary of courses and research activities: Modelling of attenuation and depolarisation on earth-satellite links; modelling of rainscatter interference between terrestrial and satellite microwave links. Analysis of propagation data from satellite experiments. Modelling of scattering from precipitation and ice particles across the microwave/millimetre wave frequency range.

Duration/Frequency/Language(s) of instruction:

Facilities: excellent library facilities; access to colour graphics workstations. Software for calculation, scattering from hydrometers and various propagation parameters.

Number of trainees: 1

Entry requirements: Good first degree qualification in applied maths, or in electrical engineering or physics with good mathematical content.

Degree/Diploma/Certificate awarded: MSc by dissertation or Ph.D

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: 6,630 British Pounds (2,104 (for EC students) (1991/92)

Monthly room and board and incidental expenses: Approx. 370 British Pounds for first year; 450 British Pounds subsequently (1st year normally given university accommodation).

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: This University has no fellowships or scholarships available to persons from outside (occasionally scholarship is available to graduates of this university). There are awards available through the ORS scheme which reduces the fee from 6,630 British Pounds to 2,104 British Pounds. Such awards are available through national competition.

Other financial support available for foreign participants:

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: --

Geographical preference:

UNITED STATES OF AMERICA

A. NATIONAL AERONAUTICS AND SPACE ADMINISTRATION (NASA)

Washington, DC 20546, USA

Tel.: 202-453-1000 Internet: <http://www.nasa.gov/>

Contact person: Director, Associateship and Fellowship Programs, National Research Council (NRC), 2101 Constitution Avenue, Washington, DC 20418

Principal function(s) of institution: Scientific and technical research in the fields of aeronautics and space exploration

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences, remote sensing, satellite communications, satellite meteorology

Summary of courses and research activities: Resident Research Associateships (RRA) as guest investigators in laboratories at seven NASA Research Centers and the Jet Propulsion Laboratory. Advanced basic research is in all areas of space science and technology, with particular topics identified in yearly brochures published by and available from the NRC

Duration/Frequency/Language(s) of instruction: 1 year/Continuous/English

Facilities: Full range of laboratory, field and space equipment

Number of trainees: Approximately 200 U.S. and foreign trainees per year for all areas of aeronautical and space research

Entry requirement: Ph.D. or equivalent

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: None

Monthly room and board and incidental expenses: Stipend for self support paid to cover all living expenses

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Available through NRC. Number varies, but approximately 80 per year in last few years

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: All areas of space science

Geographical preference: None

B. COLUMBIA UNIVERSITY, GODDARD INSTITUTE FOR SPACE STUDIES

Institute for Space Studies, 2880 Broadway, N.Y., N.Y. 10025, United States of America

Tel.: (212) 678-5500

Contact person:

Principal function(s) of institution: Education and academic research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences, satellite meteorology

Summary of courses and research activities:

Courses: Graduate programme in atmospheric and planetary science leading to the Ph.D. degree

Research: Broad studies of global climate and climate changes, biogeo-chemical cycles, planetary atmospheres, Earth observations including Global Processing Center for the International Satellite Cloud Climatology Project, instruments on planetary and Earth-orbiting spacecraft

Duration/Frequency/Language(s) of instruction: 4-6 years/--/English

Facilities: Computer facilities (Amdahl 470/V6, IBM 4341 computers, IBM RISC 6000 workstations, IBM 7350 image display system); library of visible/infra-red imagery from geostationary and polar-orbiting satellites, library of Pioneer Venus, Voyager Jupiter tapes, data from other planetary and Earth-orbiting spacecraft

Number of trainees: Up to 2

Entry requirements: Background in physics and mathematics (advanced)

Degree/Diploma/Certificate awarded: M.Sc.; Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: Graduate research assistantships

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: --

Geographical preference: None

C. UNIVERSITY OF WASHINGTON

Seattle, WA 98195, United States

Contact persons: Prof. A. Hertzberg, Aeronautics and Astronautics Research Laboratory FL-10, Tel.:(206)543-1950; Dr. Thomas A. Seliga, Professor and Chair, Department Of Electrical Engineering, Tel.: (206) 543-2150, Fax: (206) 543-3842

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences, remote sensing, satellite communications

Summary of courses and research activities:

Courses: Undergraduate courses (towards BSSA): orbit mechanics, gas physics, space system design, control theory, propulsion. Graduate courses (towards Master of Science, Master of Engineering, Ph.D.) radiation gas dynamics, space manufacturing, energy conversion, space propulsion, composite materials, gas lasers. Courses on Electronic and Computers; Control Systems & Circuits; Electric Energy; Electromagnetics, Optics & Acoustics; Materials and

Devices; Signal Processing & Communications.

Research: Sponsored research: energy conversion systems in space (NASA), solar pumped lasers (NASA), ultra high speed projectiles (USAF), free electron lasers (ONR). Wave propagation and scattering; remote sensing; acoustics; photonics and fiber optics; signal, speech and image processing; computer vision; communications and information theory; automatic control systems; robotics; electronic materials, devices and sensors; microelectronics processing and fabrication; electronic systems; VLSI design; simulation and testing; computer networks; multiprocessor systems; computer engineering; power and energy system dynamics and control; power electronics; electric drives; artificial neural networks; expert systems.

Duration/Frequency/Language(s) of instruction: 1-5 years/Annually/English

Facilities: Well-equipped laboratories including state-of-the-art computer facilities, anechoic chamber, radar systems, test instrumentation, robotic systems, microelectronics facilities, electro-optic facilities, microsensor laboratory, etc.

Number of trainees: between 6 and 12

Entry requirements: Engineering/Science degree

Degree/Diploma/Certificate awarded: B.Sc. in Aeronautics and Astronautics; M.Sc. in Aeronautics and Astronautics; Master of Engineering; Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: University of Washington tuition varies with residency status and level of study

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Very few besides teaching and research assistantships

Other financial support available for foreign participants: Teaching assistantships, research assistantships

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Same areas as listed above

Geographical preference: None

D. UNIVERSITY OF ALASKA, GEOPHYSICAL INSTITUTE AND PHYSICS DEPARTMENT

University of Alaska, Fairbanks, Alaska 99775-0800, United States

Tel.: (907) 474-7282

Contact person: Director, Geophysical Institute

Principal function(s) of institution: Research and education

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specialization: basic space sciences, remote sensing

Summary of courses and research activities: Magnetospheric physics; atmospheric dynamics; space physics; methods of numerical simulation; plasma physics; auroral physics; aeronomy. Courses and research pertaining to remote sensing in geology, geologic mapping, radiometric analysis, natural resources, glaciology, sea ice, etc.

Duration/Frequency/Language(s) of instruction: One semester/Annually/English

Facilities: --

Number of trainees: up to 5

Entry requirements: B.S. in Physics, Space Physics, Atmospheric Sciences, Geology or Geophysics, depending on programme

Degree/Diploma/Certificate awarded: M.Sc. and Ph.D. degrees

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: \$US 1,300 per semester

Monthly room and board and incidental expenses: \$US 1,200 per semester

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: Research and teaching assistantship

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: All aspects of space physics, atmospheric sciences and remote sensing

Geographical preference: Most aspects of interest deal with high-latitude problems (Arctica and Antarctica)

E. UNIVERSITY OF IOWA, DEPARTMENT OF PHYSICS AND ASTRONOMY

Iowa City, Iowa 52242, United States

Tel.: (319) 335-1689 Fax: (319) 335-1753

Contact person: Dwight Nicholson

Principal function(s) of institution: Education and basic research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: basic space sciences

Summary of courses and research activities: Magnetospheric physics of the Earth and other planets, space plasma physics, cosmic rays and solar energetic particles, interplanetary medium, ionosphere of the Earth

Duration/Frequency/Language(s) of instruction: 2 semesters/Alternate years/English

Facilities: Extensive facilities (a) for design, construction, and testing of space qualified scientific instruments and complete satellites; and (b) for computer processing, analysis and display of space data, including national computer network

Number of trainees: Up to 20

Entry requirements: B.S. or B.A. in physics, astronomy, mathematics and personal references

Degree/Diploma/Certificate awarded: M.Sc. or Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: 20 research assistantships available at \$US 12,000 per academic year.

Other financial support available for foreign participants: Foreign student scholarships at about \$US 2,000 a year in addition to research assistantship

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Same areas mentioned as in summary of courses and research activities

Geographical preference: --

F. CITY UNIVERSITY OF NEW YORK (CUNY), HUNTER COLLEGE, GEOLOGY AND GEOGRAPHY DEPARTMENT

695 Park Avenue, New York, N.Y. 10021, United States

Tel.: (212) 772-5265 Fax: (212) 772-5268

Contact person: Graduate advisor

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializatoin: remote sensing

Summary of courses and research activities:

Courses: Photogrammetry and air photo-interpretation, principles of remote sensing, digital image processing, spatial modelling and geographic information systems

Research: Geometric-optical modelling, information storage and retrieval systems; digital terrain data; economic , physical and regional geography; environmental issues.

Duration/Frequency/Languages) of instruction: 14 weeks/Annually/English

Facilities: The Department has access to the CUNY Computing Center IBM mainframe computers via direct link and dial-up lines along with its own minicomputer, SUN Network, ERDAS work stations, large co-ordinate digitizer and assortment of microcomputers with a variety of functions. Computers at all levels are networked together, thus providing great flexibility to the computing environment. The Remote Sensing and Spatial Analysis Laboratory is fully equipped with terminals, plotters and printers; it also has a number of optical remote sensing and surveying instruments. Many software packages are supported, as is a library of image and cartographic data

Number of trainees: Between 1 and 5

Entry requirements: Equivalent to United States B.A. in Geography, related fields, college physics, mathematics, calculus, statistics and TOEFL examination

Degree/Diploma/Certificate awarded: Master degree

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: New York State residents: per credit -\$US 112; per excess contact hour \$US 37; Maximum per term - \$US 1,302; out-of-state residents: per credit - US\$ 215, per excess contact hour US\$52.00; Maximum for term -\$US 2,550; Estimated cost of textbooks: \$US 200 per semester

Monthly room and board and incidental expenses: Variable \$US 1,500-2,500

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: The Dept. has 2-5 teaching/research assistantships awarded for all applicants

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: All research areas mentioned above

Geographical preference: None

G. UNIVERSITY OF ARIZONA, ARIZONA REMOTE SENSING CENTER

Office of Arid Lands Studies, 845 N. Park Ave., Tucson, Arizona 85719, United States

Tel.: (602) 621-7896 Fax: (602) 621-3816

Contact person: Director

Principal function(s) of institution: Education, research and training

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specialization: remote sensing, satellite meteorology

Summary of courses and research activities: The Arizona Remote Sensing Center (ARSC) is the central applied remote sensing facility for the University of Arizona. Activities center around research for applications, particularly dealing with agriculture and natural resources management; systems evaluations; resource map production; and training in remote sensing through formal university course instruction and customized management workshops. The Center also employs meteorological satellite data for multi-temporal evaluation of land resources and study of precipitation/runoff relationships in arid/semi-arid watersheds

Duration/Frequency/Language(s) of instruction: Semester/Every semester/English

Facilities: Mainframe, mini- and microcomputer-based image processing and geographic information system hardware; photographic laboratory; aerial video camera and processing system; archive of selected high-altitude and global-coverage photographic LANDSAT imagery

Number of trainees: Between 1 and 30

Entry requirements: Prefer currently-enrolled university-level students or graduates

Degree/Diploma/Certificate awarded: University of Arizona offers a doctoral minor in remote sensing. Certificate of completion of workshop attendees

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Course work \$US 3,500 per semester/workshop: \$US 500 per person per week

Monthly room and board and incidental expenses: \$US 350-500

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Resource mapping/desertification monitoring using integrated satellite and aerial systems to accompany ground sampling methodology; agricultural potential assessment;

agricultural yield/yield production; integrations of small image processing facilities to resource management

Geographical preference: Arid/semi-arid lands preferred

H. ENVIRONMENTAL RESEARCH INSTITUTE OF MICHIGAN (ERIM)

P.O. Box 134001, Ann Arbor, Michigan 48113-4001, United States

Tel.: (313) 994-1200 Fax: (313) 994-0944 E-Mail: roller @vaxb. erim. org.

Contact person: Norman E.G. Roller

Principal function(s) of institution: Research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing, satellite meteorology

Summary of courses and research activities:

Courses: Training and symposia on remote sensing

Research: Sensors, data processing, data development/analysis, systems development, software development. Artificial intelligence/expert systems, applications. GIS.

Duration/Frequency/Language(s) of instruction: Variable/Contract basis/English, French, Spanish

Facilities: Sensors, data processing facilities, technical staff, classrooms, field measurement equipment, publications department

Number of trainees: Between 1 and 12

Entry requirements: Basic mathematics and science

Degree/Diploma/Certificate awarded: Certificates of participation

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Variable, depends on scope of training

Monthly room and board and incidental expenses: Variable, depending on trainee's budget and preference

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: FAO, Bilateral, USAID, etc.

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Application projects, training, symposia

Geographical preference: None

I. NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA), NATIONAL ENVIRONMENTAL SATELLITE, DATA AND INFORMATION SERVICE (NESDIS)

Washington DC 20233

Tel.: 301-763-4586

Contact person: International and Interagency Affairs Office, Code E/IA

Principal function(s) of institution: NESDIS administers an integrated program for the development and use of operational civilian satellite-based environmental remote sensing systems, as well as the acquisition, processing, archiving, analysis, and dissemination of environmental data from satellites and other services.

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing, satellite meteorology

Summary of courses and research activities:

Training NESDIS provides meteorological satellite and data information training opportunities to scientists and other trained practitioners in the interest of fostering international cooperation in weather data exchanges and in promoting similar programs in developing countries. The training form varies and is provided according to the availability of NESDIS personnel and resources. Much of its international training activity is conducted in collaboration with the World Meteorological Organization and the National Weather Service. Several regional courses have been conducted, with the objective of training operational meteorologists in basic and advanced techniques of using satellite imagery for forecasting purposes. In addition, NESDIS periodically participates in United Nations and other training programs, with scientists studying at NESDIS facilities and training courses. In cooperation with the U.S. Agency for International Development and the UN Economic and Social Commission for Asia and the Pacific (ESCAP), NESDIS has conducted training courses on satellite crop monitoring and drought early warning. In 1991, a training course on remote sensing applications for environmental assessment and monitoring organized in cooperation with the UN Space Applications Programme was held at the EROS Data Center in Sioux Falls, South Dakota.

Research: The Resident Research Associateships (RRA) Program is administered by the National Research Council and sponsors selected scientists and engineers for tenure as guest investigators in NESDIS laboratories, among others. Research opportunities are offered in NOAA activities as they relate to the oceans, atmosphere, and in some areas, the solid earth, with specific projects identified in yearly brochures published by and available from the NRC

Duration/Frequency/Language(s) of instruction: Varies/Varies/English

Facilities: Full range of laboratory, field and space equipment

Number of trainees: Training number/courses vary from year to year. The NOAA Resident Research Associateship Program usually accommodates 1-3 fellowships a year at NESDIS, depending on funding availability.

Entry requirement: Training - variable; NOAA Resident Research Associateship Program - Ph.D.
Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: None

Monthly room and board and incidental expenses: Varies with location

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Available through National Research Council.

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific area of interest: Meteorological satellite and data information training as shown above

Geographical preference: None

J. UNITED STATES GEOLOGICAL SURVEY (USGS)

104 National Center, Reston, VA 22092

Tel.: 703-648-6064

Contact persons: General Remote Sensing Applications: Chief, Science and Applications Branch, U.S. Geological Survey, EROS Data Center, Sioux Falls, SD 57198; Water Resources: Water Resources Division, U.S. Geological Survey, 436 National Center, Reston, VA 22092; Mineral Resources: Office of International Geology, U.S. Geological Survey, 917 National Center, Reston, VA 22092

Principal function(s) of institution: Earth science research and education

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializatoin: remote sensing, satellite meteorology

Summary of courses and research activities: The USGS offers a number of training courses. Specific offerings include:

- The USGS and the University of Hawaii, in cooperation with the United Nations Development Programme, are offering training in marine geology that will be helpful to maritime countries in training personnel in the assessment, exploration and management of their offshore resources.
- The USGS and the University of Hawaii's Center for the Study of Volcanoes are offering training in volcano monitoring.
- The USGS and the University of Idaho, in cooperation with the Foundation for Glacier and Environmental Research, are presenting a training program in Polar and Alpine Geosciences.
- The USGS offers an 8 week course in hydrologic data collection and interpretation to prepare participants to evaluate the water resources of an area or region.
- The National Earthquake Information Center of the USGS is presenting a program on understanding earthquakes and mitigating their effects.
- Postgraduate, on-the-job training opportunities are available through the USGS. International participants work with the USGS hydrologists, geologists, geochemists, geophysicists, and other scientists to learn current technologies to help scientists from overseas become better qualified to assist their countries in establishing or improving their own Earth-science programs.

Duration/Frequency/Language(s) of instruction: 2-10 weeks/Annually/English

Facilities: Numerous photographic laboratories, computers, video displays, optical scanners, film recorders and paper printers/plotters

Number of trainees: Between 8 and 30

Entry requirement: Knowledge of fundamentals of remote sensing and knowledge of the English language

Degree/Diploma/Certificate awarded: Certificate of completion

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: varies

Monthly room and board and incidental expenses: US\$ 1,500 - 2,000

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Yes

Other financial support available for foreign participants: Assistance is sometimes available through cooperative programs with the U.S. Agency for International Development

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes
Specific areas of interest: Wide variety of topics related to Earth science studies
Geographical preference: None

K. ZONTA INTERNATIONAL (AMELIA EARHART FELLOWSHIPS)

557 W. Randolph St., Chicago IL 60661-2206
Tel.: (312) 930-5848 Fax: (312) 930-0951
Contact person: Bonnie Koenig, Exec. Dir.

Principal function(s) of institution: Zonta International is a world-wide classified service organization of over 40,000 executive women in business and the professions (in Zonta Clubs in 53 countries) with commitment to the development and training of women for leadership positions. In this connection, it grants annually ZONTA Amelia Earhart Fellowship Awards to women for graduate studies. Zonta International has consultative status with UNICEF, ECOSOC, UNESCO, ILO and the Council of Europe

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializatoin: basic space sciences

Summary of courses and research activities: The fellowships are awarded for graduate studies in aerospace related science and engineering including aspects of natural and physical sciences. The courses to be followed will depend on both the background and interest of fellow and available opportunities at the institution accepting fellow

Duration/Frequency/Language(s) of instruction: Vary. This depends on the academic institution where the fellowship recipient will pursue her studies as well as the programme of studies

Facilities: --

Number of trainees: From 25 to 30 each year

Entry requirements: (a) Minimum of Bachelor's degree in a science (natural or physical) for advanced study and research as described under summary of courses etc. above. (b) A superior academic record and evidence of potential, and (c) An acceptance by an institution offering fully accredited courses and degrees in areas described under summary of courses etc. above

Degree/Diploma/Certificate awarded: --

2. COSTS OF PROGRAMMES

Costs of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Each of the fellowship awards amount to US\$6,000 for use for the recipients' studies

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: --

Geographical preference: Applications for the fellowship awards for graduate studies may be made by women world-wide and must be completed and submitted with requested materials before 1 January of any year. Fellowships may be used at any institution offering accredited courses in the applicant's area of study in the following year's term

Z I M B A B W E

A. NATIONAL REMOTE SENSING FACILITY

P.O. Box 8039, Causeway, Zimbabwe

Tel.: 790701

Contact person: A.B. Made, Box 8039, Causeway, Harare, Zimbabwe

Principal function(s) of institution: Education, research, development, teaching and project execution

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: remote sensing, satellite meteorology

Summary of courses and research activities:

Courses: Basic remote sensing courses for agriculture, vegetation and mineral exploration using satellite data

Research: Crop monitoring, environmental monitoring and mineral exploration using satellite data. Geographic information systems applications

Duration/Frequency/Language(s) of instruction: 2 semesters/Annually/English

Facilities: Mirror stereoscopes, ERDAS digital image processing system, Zoom transferscope (Baush & Lomb), Wild/LEITZ Aviopret, fully equipped photolaboratory, specialized printing press, PROCOM-2 overhead projectors, slide projectors

Number of trainees: 15 - 25

Entry requirements: 1st year University

Degree/Diploma/Certificate awarded: Degrees

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: By State

Monthly room and board and incidental expenses: Provided by State

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: State fellowships are available

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Application of remote sensing to crop monitoring and mineral exploration

Geographical preference: SADCC

B. UNIVERSITY OF ZIMBABWE

M.P. 167, Mount Pleasant, Harare, Zimbabwe

Tel.: 303211

Contact person: Dr. M. Zinyowera, Box BE150, Belvedere, Harare

Principal function(s) of institution: Education, research, development and teaching

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specializaton: satellite communications

Summary of courses and research activities: Satellite communications at the Post and Telecommunications Cooperation

Duration/Frequency/Language(s) of instruction: In service/Annually/ English

Facilities: Earth satellite station

Number of trainees: Between 4 and 10

Entry requirements: General certificate of education - advanced level

Degree/Diploma/Certificate awarded: Degree, certificate

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Funded by the State

Monthly room and board and incidental expenses: Provided

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: State fellowships are available

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: --

Geographical preference: None

INTERNATIONAL AND REGIONAL INSTITUTIONS

EUROPEAN SPACE AGENCY (ESA)

8-10, rue Mario Nikis, 75738 Paris Cedex 15, France
Tel.: (33-1) 53697459 Fax: (33-1) 53697627
Contact person: Head, International Affairs

Principal function(s) of institution: Research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specialization: basic space sciences, remote sensing, satellite communications

Summary of courses and research activities:

Courses: international training courses mainly cosponsored by ESA with the UN, FAO, E.C., CNES, DLR. Asia: AIT, Asian Development Bank, ESCAP; Africa: RCCMRS. Latin America: INPE, CONAE, UNAM, CLIRSEN, Augustin Codazzi.

Research: space science, Earth observation

Duration/Frequency/Language(s) of instruction: 1-3 weeks training courses/--/English, French, Spanish; 6-12 months fellowships

Facilities: Broad range of facilities is available

Number of trainees: 20-25 participants for each training course; 2-3 participants for each fellowship programme

Entry requirement: Postdoctoral - experienced scientists, engineers, technicians

Degree/Diploma/Certificate awarded: Certificate of attendance

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: None

Monthly room and board and incidental expenses: None

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: 10 - 12 per year. 5 fellowships are offered through the United Nations Space Applications Programme. The others are on a bilateral basis through government request.

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: space sciences, remote sensing, satellite communications

Geographical preference: None

FOOD AND AGRICULTURE ORGANIZATION
OF THE UNITED NATIONS (FAO)

REMOTE SENSING CENTRE (AGRT)

Via delle Terme di Caracalla, 00100 Rome, Italy
Tel.: 57975583 Fax: 57826101, 57973152
Contact person: Chief, Remote Sensing Centre

Principal function(s) of institution: Remote sensing technology transfer; Environmental monitoring by satellites; Agricultural, forestry and fisheries applications of remote sensing; Remote sensing inputs to global (FAO), regional and national early warning systems on food security; Technical backstopping of remote sensing components of FAO executed field projects; Information and advisory services on remote sensing applications to development and management of renewable natural resources.

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specialization: remote sensing, satellite meteorology

Summary of courses and research activities:

Short courses: (2-4 weeks duration) on remote sensing applications at inter-regional, regional/sub-regional and national level in co-operation with UN(OOSA), WMO, UNDRO, UNESCO, UNEP, ESCAP, ECA, WHO, ESA, Member States (e.g. Italy, Federal Republic of Germany, France) and Regional Remote Sensing Centres; workshop for decision makers (1 week duration) to provide appraisal of the state-of-the-art of remote sensing inputs to development and management of renewable natural resources, including briefings on appropriate institutional infrastructures, projects development, cost/benefit analysis, educational and training opportunities

Specialized on-the-job training: Analog and digital image analysis techniques; land-use mapping based on remote sensing data; environmental monitoring by satellite.

Development and testing of appropriate remote sensing techniques for application in developing countries (pilot action studies)

Duration/Frequency/Language(s) of instruction: 2-4 weeks/4-5 courses per year/English, French, Spanish; 1 week/1-2 workshops for decision makers per year/English, French

Facilities: Comprehensive range of equipment for analog and digital analysis of remote sensing data, reproduction of imagery and thematic mapping; complete training facilities for 24 participants. Primary data use station for Meteosat.

Number of trainees: Between 15 and 24

Entry requirements: University degree in relevant discipline, present work responsibilities relevant to the theme of the training course. In case of workshops for decision makers, the only entry requirement is a senior government position with responsibilities including renewable natural resources.

Degree/Diploma/Certificate awarded: Attendance certificate

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Free (no stipend paid)

Monthly room and board and incidental expenses: Provided unless in host country

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Several a year. FAO provides fellowships under its executed field projects in developing countries

Other financial support available for foreign participants: Return travel covered for selected participants

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific area of interest: Since 1972, the FAO Remote Sensing Centre has been assisting developing countries in establishing or strengthening their remote sensing institutional infrastructures and in developing indigenous capacities for operational applications of remote sensing in agriculture, forestry and fisheries sectors.

Geographical preference: Developing countries with priorities assigned according to their needs

UNITED NATIONS EDUCATIONAL,
SCIENTIFIC AND CULTURAL
ORGANIZATION (UNESCO)

7, Place de Fontenoy, 75700 Paris, France
Tel.: (33.1) 4568 1000 Fax: (33)(1)46031122

Contact person: Robert Missotten, Division of Earth Sciences

Principal function(s) of institution: --

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specialization: remote sensig

Summary of courses and research activities:

Courses: The following post-graduate training courses sponsored by UNESCO and dealing with the application of remote sensing to integrated natural resources research, management and development will continue for the next few years:

- (i) Post-graduate courses in integrated study and rational use of natural resources at the universities of Paris, Montpellier and Toulouse, France;
- (ii) International post-graduate training courses on remote sensing applications, digital image processing and aerospace surveys for applied geomorphology and engineering geology at the International Institute for Aerial Survey and Earth Sciences (ITC), Enschede, The Netherlands;
- (iii) International post-graduate training course on photo-interpretation applied to civil engineering and geology at the Intituto Geografica Agusten Codazzi (IGAC), Bogota, Colombia.

In cooperation with FAO, UNESCO organizes post-graduate training on the use of remote sensing images in water resources studies.

The Intergovernmental Oceanographic Commission (IOC) of UNESCO is planning to continue s series of regional training courses on the application of satellite remote sensing to marine studies, making use of the aforementioned computer-based learning modules.

Research:

- a) In the framework of the UNESCO/International Union of Geological Sciences (IUGS) programme "Geological Applications of Remote Sensing" (GARS), two research projects are being implemented in Africa and in Latin America. The first focuses on the comparative use of remote sensing data from different sensors in the geological mapping of the Kibaran terranes in East and Central Africa, whereas the second consists of evaluating the use of airborne and spaceborne remote sensing data for monitoring of landslides in the Andean region.
- b) An Intergovernmental Oceanographic Commission (IOC)/World Meteorological Organisation (WMO) ad hoc Group on Ocean Satellites and Remote Sensing has been established to analyze the requirements of marine meteorology and operational physical oceanography for remote sensing data, related to (i) polar-orbiting earth observation satellites; (ii) geostationary satellites; (iii) ground-based HF and radar systems; (iv) data access to the systems.
- c) The IOC/WMO Committee for Integrated Global Ocean Services Systems (IGOSS) is presently studying the operational exchange of remotely sensed oceanographic data as part of the IGOSS data processing and services system.
- d) Archiving and the exchange of non-operational remotely sensed oceanographic data are being studied by the IOC Commission on International Oceanographic Data and Information Exchange (IODE). At the same time, they are trying to find an answer to such problems as the absence of standard format for oceanographic satellite data products, the lack of compatibility between the

satellite data products from different centres, etc.

e) Within the framework of the IOC Global Investigation of Pollution in the Marine Environment (GIPME), the possibility of using remotely sensed data to monitor marine pollution, i.e. applications of remote sensing in coastal zone and shelf seas dynamic, is being studied.

f) UNESCO assists in UNEP's Earthwatch activity, and the Swiss Federal Institute of Technology in a World Glacier Inventory. Reports have been published in 1991 and will continue to 1993 and beyond.

Duration/Frequency/Language(s) of instruction: The UNESCO National Commissions are provided annually with detailed information on the above-mentioned courses

Facilities: Assistance to facilitate the exchange of scientists and information, and limited assistance for the development of the scientific infrastructure

Number of trainees: Number varies, but usually not more than 25

Entry requirement: In general, BSc in geology, hydrology or marine sciences is required, unless other requirements are given in the information/application sheets.

Degree/Diploma/Certificate awarded: Certificates are issued upon successful completion of the short courses. Diplomas are awarded at the end of the long-term programmes

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Normally, tuition fees or textbook costs are borne by UNESCO or cooperating host organization.

Monthly room and board and incidental expenses: Vary according to the programme. More details can be obtained from cooperating institutes via the UNESCO National Commissions.

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Fellowships are available for training programmes listed above.

Other financial support available for foreign participants: Further information may be found in the course information notes available at UNESCO National Commissions.

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: The above activities are oriented towards strengthening the use of remote sensing in developing countries.

Geographical preference: --

UNITED NATIONS ECONOMIC COMMISSION
FOR AFRICA (ECA)

A. CENTRE REGIONAL DE TELEDETECTION DE OUAGADOUGOU, BURKINA FASO

B.P. 1762, Place du Centre, OUAGADOUGOU-01, Burkina Faso

Tel.: 30 01 99, 30 06 35, 30 03 96

Responsable: Chef de Service Formation

Vocation(s) principale(s) de votre Etablissement: Formation/assistance aux Utilisateurs/Gestion-Diffusion et Promotion des données

I. PROGRAMMES DE CULTURE GENERALE ET SCIENTIFIQUES

Area(s) of specialization: remote sensig

Description des cours et activités de recherche:

Cours: Cycle Régulier de Télédétection (CYRETEL), Cycle Post-Universitaire DESS/DEA:

I. Bases et méthodes; bases physiques de la Télédétection, Capteurs/Vecteurs, restitution de l'information;

II. Traitement de données; traitements photographiques et numériques, méthodes d'analyses, statistiques, informatique;

III. Applicatons; exposés de méthodes dans divers domaines d'application des sciences de la terre, étude de cas, Travaux Pratiques et Travaux Dirigés de traitement d'image et Système d'Information Géographique. (TI/SIG) - Stage terrain.

Activites recherche: Divers thèmes sont couverts: Evolution de la réponse spectrale des végétaux, Statistiques agricole, Mobilisation des ressources en eau, pâturages, cartographie de précision.

Durée/Fréquence/Langue(s) d'enseignement: 10 mois/2 fois par an/Anglais, Français

Moyens dont dispose l'établissement pour exécuter les programmes: Laboratoire photographique; documentations, cartes, images, archives, une unité de traitement et bientôt intégrtion du SIG

Nombre de participants: Entre 10 à 20

Critères régissant l'admission: Pour le CYRETEL (cycle long): Diplome d'Ingénieur/Maitrise; pour les stages courts: Techniciens supérieurs et/ou Techniciens selon les stages

Certificats ou diplômes obtenus: Cycle Post-Universitaire : DESS/DEA; Attestation de stage pour les stages de courte durée

2. COUT DES PROGRAMMES

Frais de scolarité, manuels et autres matériaux de recherche: CYRETEL: 1.800.000 FCFA (membres), 2.700.000 (non membres); Stage spécialisés: 1.500.000 FCFA (membres), 2.500.000 (non membres); Stage court: 250.000 à 500.000 FCFA/mois selon le type de stage (membres), 700.000 à 1.000.000 FCFA/mois (non-membres); Stage à la carte (2 à 3 semaines): 250.000 FCFA (membres), à étudier selon les cas (non membres)

Frais mensuels de logement et de subsistance et faux frais: Selon les Institutions de financement de 75.000 à 175.000 francs FCFA/mois

3. POSSIBILITES DE BOURSES D'ETUDES OU DE PERFECTIONNEMENT

Possibilités de bourses d'études ou de perfectionnement pour des participants étrangers: Non

Existence d'autres possibilités d'octroi d'une aide financière pour participants étrangers: Oui. Agences de cooperation multilaterales et/ou bilaterales selon les projects.

4. COLLABORATION AVEC PAYS EN DEVELOPPEMENT: Oui
Domaines qui vous intéressent: Technologie spatiale et ses applications
Préférence géographique: Afrique de l'Est, Asie, Amérique (Brésil/Argentine)

B. REGIONAL CENTRE FOR SERVICES IN SURVEYING, MAPPING AND REMOTE SENSING, KENYA

P.O. Box 18118, Nairobi, Kenya
Tel.: 803320 Fax: 802767
Contact person: Director of Remote Sensing

Principal function(s) of institution: Training, research, development and technical services

I. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specialization: remote sensig

Summary of courses and research activities:

Training: Applications of remote sensing to agriculture, forestry, hydrology, geology and minerals, oceanography, cartography, highway road construction, soils environmental monitoring, natural and man-made disasters, pests; teaching with remote sensing; consultancy services and project design, GIS

Research: Use of geographical information; system of land use in East and Southern Africa; photo-mapping techniques; digital techniques and analysis; food yield prediction techniques

Duration/Frequency/Language(s) of instruction: 3-6 weeks/6 times a year/English; 3-6 weeks/2 times a year/French

Facilities: Photo laboratory for colour and B&W imagery processing; continuous processor; digital image processing; servicing and repairing of survey equipment

Number of trainees: Between 15 and 25

Entry requirement: 1st or 2nd degree in natural resources sciences

Degree/Diploma/Certificate awarded: Certificate of attendance.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Approximately US\$ 3,500 per participant per course

Monthly room and board and incidental expenses: Included above

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: UN agencies, international donor agencies (e.g. USAID, SIDA, NORAD)

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Natural resources, GIS, aerial photography, geodesy, cartography, digital electronics, remote sensing.

Geographical preference: East and Southern Africa subregion

C. REGIONAL CENTRE FOR TRAINING IN AEROSPACE SURVEYS (RECTAS)

O.A.U. Campus, ILE-IFE, Nigeria

Tel.: 036-230-225, 036-320-050

Contact person: Director

Principal function(s) of institution: Training, research and consultancy

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specialization: remote sensig

Summary of courses and research activities:

Training: (i) Technicians Course (9-12 months) in Image Interpretations; (ii) Technologist Course (12 months) in Image Processing (digital and analogue images); (iii) Postgraduate course (12 months) in Remote Sensing Applications.

Research: Remote sensing application to natural resources surveys, and environmental monitoring; space maps; applications in Photogrammetry; Methodology in Remote Sensing Education.

Duration/Frequency/Language(s) of instruction: --/--/English, French

Facilities: Micro computers for image and word processing; print-out peripherals; Digital Images in CCTs; Analog interpretation equipment; mirror and pocket stereoscopes, optical transfer devices such as zoom, stereosketch, stereopret, optical sketchmaster, etc.; photographic processing laboratory; photogrammetric equipment; library and documentation; GIS system (APY System for map revision); Near future availability of ARC INFO and ILWIS.

Number of trainees: Technicians: 10 per year; Technologists: 10 per year; Postgraduates: 10 per year.

Entry requirement: --

Degree/Diploma/Certificate awarded: Technician's Certificate or Diploma; Technologists Diploma; Postgraduate Diploma; Workshop Certificate of Attendance.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Costs of tuition, text and related materials to be obtained by writing to the Director of Centre

Monthly room and board and incidental expenses: As per stipulation by the Obafemi Awolowo University, other accredited hotels in town and RECTAS hostel.

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Yes, for nationals of Member States of RECTAS and ECA

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: (i) As indicated in the summary above; (ii) Professional and Technical training in Remote Sensing.

Geographical preference: (i) Member States of RECTAS (At the moment 8 West/Central African States); (ii) Member States of Economic Commission for Africa

ASIAN INSTITUTE OF TECHNOLOGY

NATURAL RESOURCES PROGRAMME

P.O. Box 2754, Bangkok 10501, Thailand
Tel.: 66-2-524-5577 Fax: 66-2-524-5597
Contact person: Co-ordinator

Principal function(s) of institution: Training and education

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Area(s) of specialization: remote sensig

Summary of courses and research activities:

Courses:

(a) 13 week training course: basic electromagnetic theory, visual and digital airphoto and satellite data interpretation, field work for verification of maps produced using remote sensing data. Team projects focus on use of remote sensing for mapping natural and cultural resources in rural areas of the region.

(b) 13 week training course: geographic data: spatial and thematic characteristics, structures, and processing; data bases: information sources, integrity and accuracy; construction of landscape models; current GIS descriptions and evaluation. Team projects focus on uses of GIS for development and management of natural resources in the region.

(c) 13-week training course in Environmental Planning: communications & team planning, project planning & management, photo-interpretation, terrain analysis, GIS basics, bio-physical suitability analysis, socio-economic suitability analysis, and EIA basics. Team projects use the "Project CaseWork" approach to focus on comprehensive action plan for development within the region.

(d) Workshop in remote sensing image processing using micro-computers: stresses practical (laboratory) work

(e) Workshop in GIS using micro-computers: stresses practical (laboratory) work

Research: Integration of systems dynamics modelling with GIS static spatial models for spatial analysis of statistical output from dynamic simulations

Duration/Frequency/Language(s) of instruction: Certificate: 3-1/2 months/one per year/English; Workshops: 3 weeks/1 per year/English (for remote sensing and GIS each)

Facilities: A number of workstations with a wide array of input-output devices (including tape and disk drives, digitizing tables, printers and ink-jet plotters, and a stand-alone Optronics scanner-plotter system). In addition, PAMAP (GIS), ARC/INFO(GIS), IDRISI(GIS) and DRAGON (IPS), plus GIS and IPS tutorial systems developed at AIT are installed on the eight NEC APC-IV Powermate I (80287 math coprocessor) workstations in the INRDM/RSL microcomputer classroom. The workstations use VGA graphics cards with NEC Multisync RGB monitors

Number of trainees: Between 10 and 30 in each Certificate Course or Workshop (for remote sensing and GIS)

Entry requirements: Undergraduate degree or diploma

Degree/Diploma/Certificate awarded: Certificate of Attendance (3-1/2 month programme and workshop)

2. COST OF PROGRAMMES

Cost of tuition, texts, field work and related research material: Certificate programme -\$US 3,600; Workshop - \$US 2,000

Monthly room, board and incidental expenses: Certificate programme - \$US 383 (\$US 1,530 per programme); Workshop: N.A. (included in tuition)

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for participants: Up to 6 per year for remote sensing and GIS courses; 20 per year for Environmental Planning course. More for workshop.

Other financial support available for participants: Some travel scholarships may also be available

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Remote sensing, geographic information systems, digital cartography, and DEM

Geographical preference: Asia and the Pacific

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