iirs

Indian Institute of Remote Sensing

Announces

M. Tech. Course

in Remote Sensing and Geographic Information System

Training · Education · Research
1966 - 2016
iirs
INDIAN INSTITUTE OF REMOTE SENSING
GOLDEN JUBILEE
Capacity Building

Specializations

- Agriculture & Soils
- Forest Resources & Ecosystem Analysis
- Geosciences
- Marine & Atmospheric Sciences

- Urban & Regional Studies
- Water Resources
- Satellite Image Analysis & Photogrammetry
- Geoinformatics

1970

2000

2017
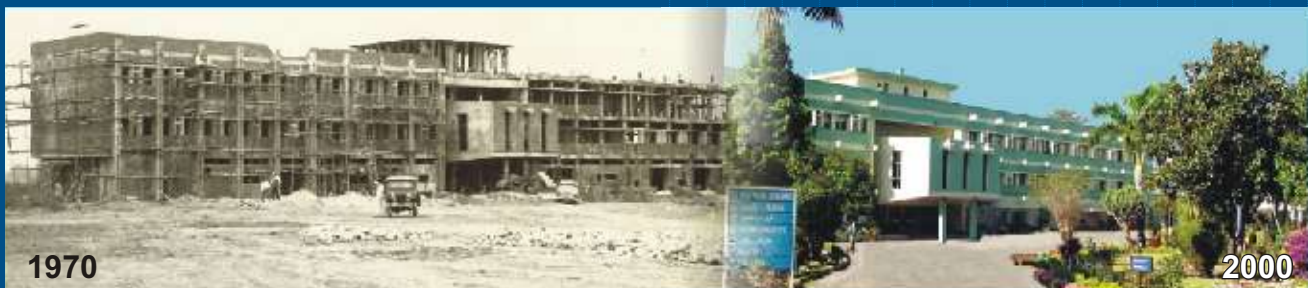
Aim of the Course

Recent development in space science, computer automation and information technology (IT), satellite and sensor technology, geospatial data handling, processing and modelling, new horizons are opened up in the areas of natural resources management and sustainable exploration, and natural hazard

PSLV C-32 Lift off for launching of IRNSS-1F satellite on Marh 10, 2016 towards India's self reliance in regional navigation (Source: isro.gov.in)

assessment and disaster management. Remote Sensing (RS) technology offers an important tool for earth and planetary observation, feature extraction, and monitoring of the surface processes in spatio-temporal domain. Advances in Remote Sensing, GIS, and allied technologies such as Global Navigation Satellite System (GNSS) and ground based observation techniques such as Hyperspectral Remote Sensing, Microwave Remote Sensing, LIDAR, Digital Terrain Analysis, Web GIS, Flux Tower Measurement, GB-SAR etc. facilitate efficient management and near real-time monitoring of the natural resources and hazards. Indian Institute of

Eos Chaos area, part of the gigantic Valles Marineris Canyon of Mars as seen by India's Mars Orbiter Spacecraft (MOM) (Source: isro.gov.in)

IIRS Students Lab with a capacity to cater to high-end digital image processing and GIS practical for more than 50 students

Remote Sensing (IIRS), Indian Space Research Organisation (ISRO) has made it a mandate to build capacity by the development of high quality scientific workforce in Remote Sensing, GIS and allied technologies for efficient geospatial data management and modelling of the Earth resources

IIRS Library: Storehouse of over14,600 books & monographs, 1568 e-books, 103 print journals, 434 online journals, 1450 technical reports & 142 multimedia CDs/DVDs in Remote Sensing, Geospatial Science & related areas

and earth surface processes respectively and to cater to high-end R&D activities in the country and neighbouring regions. IIRS has so far conducted 15 M.Tech. Courses with a total enrolment of 263 since the beginning of the course in 2002 including two ongoing courses (2015-17 and 2016-18 batches with a total number of candidates of 31 and 30 respectively). The M.Tech. Degree is awarded by Andhra University, Vishakhapatnam, India. The university (est. 1926) is accredited by NAAC with 'A' Grade. It has 10 university Colleges in Science & Technology, Engineering, Arts, Commerce, Law, Pharmacy, etc.

Eddy covariance tower in Haldwani (Uttarakhand) area for measuring CO_2 and water vapour exchange

The aim of the M.Tech. course is to provide in-depth understanding of remote sensing, satellite image analysis, geographic information system (GIS) and GNSS technologies and their applications in various fields such as agriculture and soils, forestry & ecology, geosciences, water resources, marine & atmospheric sciences, urban & regional studies, large scale mapping etc.

Target Groups

This course is targeted for those who are interested in remote sensing and GIS technologies and applications in the field of natural resource surveys, water resource management, agriculture and soil surveys, forestry, disaster management, marine and atmospheric sciences, urban planning, geological investigations, photogrammetric surveys and mapping. Candidates can opt for one of the specializations.

Former Late President of India Dr. A.P.J. Abdul Kalam during convocation

Eligibilty Criteria

The applicants are required to have passed (with atleast 55% marks at qualifying examinations) M.Sc. in Natural Sciences (Botany, Zoology, Agriculture, Soil Science, Wild Life, Environmental Science etc.)/ Physical sciences / Geo-exploration / Petroleum

Participants of UAV special course are engaged in field experiment

Engg. or equivalent/ Geoengineering/ Mining Engineering/ Environmental Sciences/ Natural Hazards/ Disaster Mangement/ Geography/ Geoinformatics or Geomatics/ B.E. or B.Tech. in Civil Engg./ Agricultural Engg./ Biotechnology/ Elec. & Electronics/ Geoinformatics or Geomatics/ Computer Engg./ IT/ Geosciences/ Petroleum Engg./ Mining Engg./ Mineral Processing/ B.Arch./ B. Planning/ MCA (with B.Sc. Degree) / B.Sc. (Forestry/ Agriculture, both with 4 years duration course).

> *For discipline wise detailed eligibility criteria and the syllabus for entrance examination, please refer to course calendar & syllabus on IIRS website.*
>
> *Website: www.iirs.gov.in*

Admission Process

The admission for M.Tech. Course is based on entrance test and interview. Candidates sponsored by govt. organisations are exempted from entrance test, however, they are required to appear in the interview. GATE qualified candidates should also write the entrance examination.

Course Duration

TYPE OF PROGRAM	DURATION	FROM	TO
M. Tech. in Remote Sensing and Geographic Information System	2 years	Aug 14 2017	Aug 16 2019

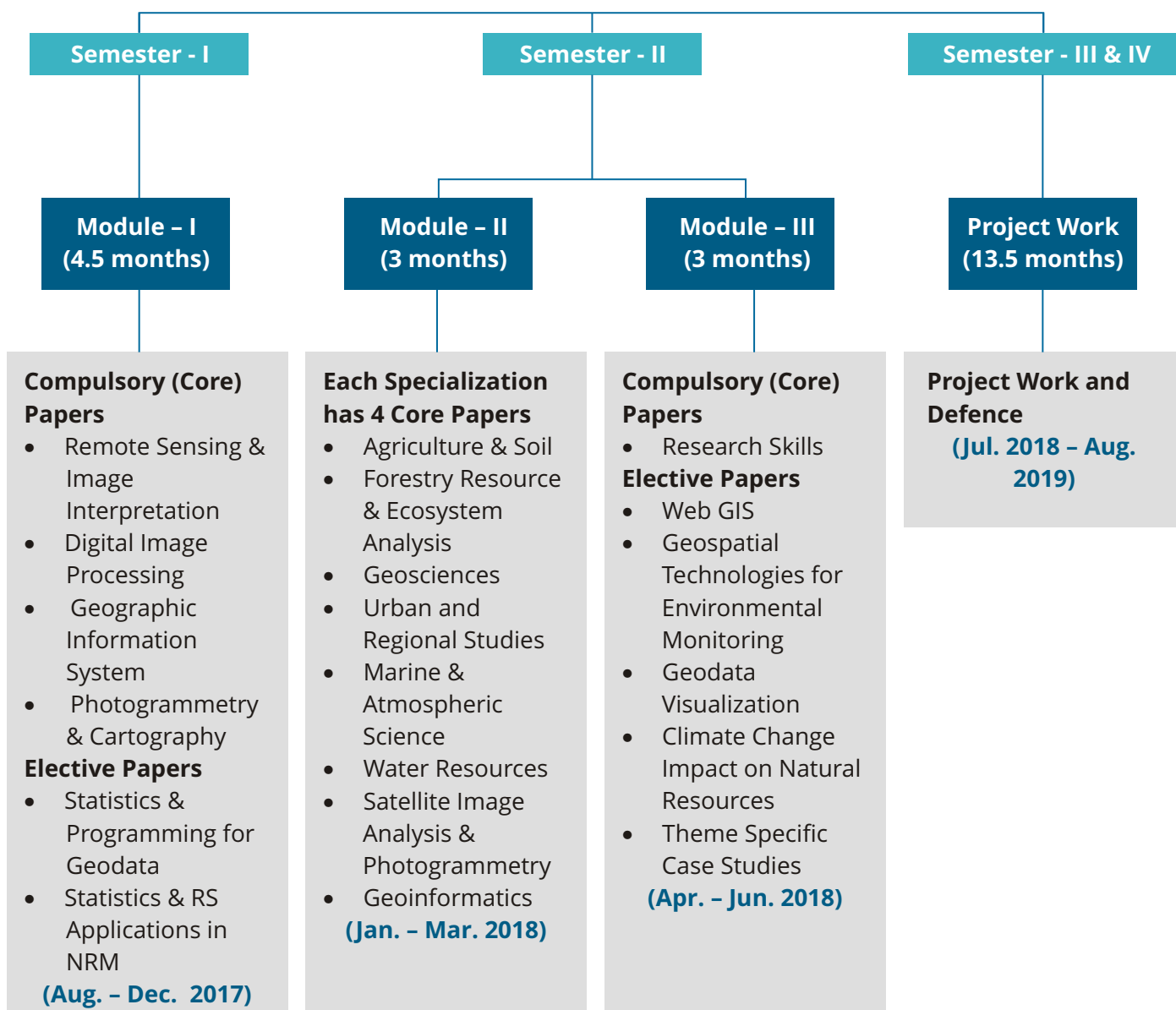** The degree will be awarded by Andhra University*

Course & Other Fees

Indian Government (Central/State/UT) Sponsored Candidates	: No tution fee; ₹ 20,000 to Andhra University for M.Tech. registration fee
Indian Self-Financed Candidates	: ₹ 1,44,000 + ₹ 20,000 to Andhra University for M.Tech. registration fee
Foreign Candidates	: US $14,400 + US $ 250 to Andhra University for M.Tech. registration fee

The candidates have to bear the expenses towards their boarding and lodging as per prevaling IIRS norms.

Note: *IIRS offers Golden Jubilee Fellowships to the topper of each of the specializations as per IIRS norms. Also, some of the meritorious students get financial assistance during project work, if they are selected for carrying out their M. Tech project in any of the IIRS research projects with funding support.*

M.Tech. Course Structure

Semester - I

Semester - II

Semester - III & IV

Module – I (4.5 months)

Module – II (3 months)

Module – III (3 months)

Project Work (13.5 months)

Compulsory (Core) Papers
- Remote Sensing & Image Interpretation
- Digital Image Processing
- Geographic Information System
- Photogrammetry & Cartography

Elective Papers
- Statistics & Programming for Geodata
- Statistics & RS Applications in NRM

(Aug. – Dec. 2017)

Each Specialization has 4 Core Papers
- Agriculture & Soil
- Forestry Resource & Ecosystem Analysis
- Geosciences
- Urban and Regional Studies
- Marine & Atmospheric Science
- Water Resources
- Satellite Image Analysis & Photogrammetry
- Geoinformatics

(Jan. – Mar. 2018)

Compulsory (Core) Papers
- Research Skills

Elective Papers
- Web GIS
- Geospatial Technologies for Environmental Monitoring
- Geodata Visualization
- Climate Change Impact on Natural Resources
- Theme Specific Case Studies

(Apr. – Jun. 2018)

Project Work and Defence

(Jul. 2018 – Aug. 2019)

Thematic Specialization	Subject
Agriculture & Soils	• Land Use and Soil Resource Assessment • Agri-informatics • Environmental Soil Science • Satellite Agro-meteorology
Forest Resources & Ecosystem Analysis	• Forest Mapping and Monitoring • Forest Inventory • Forest Informatics • Forest Ecosystem Analysis
Geosciences	• Earth Science and Planetary Geology • Data Processing and Analysis for Geosciences • Applied and Tectonic Geomorphology • Engineering Geology and Groundwater
Marine & Atmospheric Sciences	• Satellite Oceanography • Satellite Meteorology • Coastal Processes and Marine Ecology • Atmosphere and Ocean Dynamics
Urban & Regional Studies	• Fundamentals of Urban and Regional Planning • Geospatial Technologies for Urban and Regional Area Analysis • Urban Resources, Services and Facilities Analysis • Geo-Spatial Technologies for Urban and Regional Environment Studies
Water Resources	• Water Resources Assessment • Watershed Analysis and Planning • Water Resources Development • Water Resources Management
Satellite Image Analysis & Photogrammetry	• Emerging Sensors and their Processing • Image Processing Algorithms • Digital Photogrammetry and Mapping • Mathematical Computing for Geospatial data analysis
Geoinformatics	• Spatial Data Quality • Programming Skills Development for Geo-Processing • Spatial Database Handling, Modelling and GIS Implementing Architectures • Geo-Statistics

Hostels

The lodging and boarding facilities are provided to all students at IIRS in its five hostels. All hostel rooms are well furnished and are allotted on single / double occupancy basis. Indian cuisine is served in a common mess. Foreign students are provided accommodation with kitchenette facilities. The campus also has recreational facilities such as gymnasium, badminton, volleyball, table tennis, party hall, billiards, basketball, lawn tennis etc.

About Indian Institute of Remote Sensing (IIRS)

IIRS is a premier institute with a primary aim to build capacity in Remote Sensing and Geoinformatics and their applications through education and training programmes at post graduates level. It functions as a

Laying of Foundation Stone of IIRS Golden Jubilee Hostel by Dr. A. S. Kiran Kumar, Chairman ISRO in 2015

build capacity in the user community by training mid-career professionals, the Institute has enhanced its capability and evolved many training and education programmes that are tuned to meet the requirements of various target groups, ranging from fresh graduates to policy makers.

Former Dean IIRS welcoming The Ambassador of Netherlands during the initial days of IPI (IIRS)

unit of Indian Space Research Organization (ISRO), Department of Space, Government of India. Formerly known as Indian Photo-Interpretation Institute (IPI), founded in 1996 in collaboration with the Government of the Netherlands, on the pattern of Faculty of Geoinformations Science and Earth observation (ITC) , the institute is one of its kind in entire south-east Asia celebrated Golden Jubilee Year in 2016. While nurturing its primary endeavor to

Dr. A. Senthil Kumar, Director IIRS interacting with Prof. H. S. Dhami, Vice Chancellor, Kumaun University and Dr. Savita, Vice Chancellor, Forest Research Institute (D.U.) during IIRS User Interaction Meet 2016

How to Apply

The candidates must apply online. Online course application form-2017 is available at www.admission.iirs.gov.in

Important Dates

| Last date for registration and receipt of application : 30 April, 2017 |
| Entrance Examination   : 10th June 2017 |

For any query, please contact:

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