# M.Sc., GEOINFORMATICS
# PG Dip. SPATIAL TECHNOLOGIES

## INFORMATION BROCHURE


For further details
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**The Gandhigram Rural Institute**
**Deemed University**
Fully Funded by MHRD, New Delhi.
Gandhigram, Tamil Nadu

# CENTRE FOR GEOINFORMATICS

**The University**

The Gandhigram Rural Institute (GRI) was founded in 1956 by two disciples of Gandhiji, Dr.G.Ramachandran and Dr.T.S.Soundaram. The University Grants Commission (UGC), New Delhi, conferred on it the status of a Deemed University (GRI) in 1976. The National Assessment and Accreditation Council (NAAC), Bangalore, has accredited the Institute with 5 star status in 2002. The Institute offers Doctoral, Master's and Bachelor's Degree, Diploma and Certificate programmes. The academic programmes of the institute have attracted students from different parts of India and from other developing countries.

The Institute is situated on a 200 acre campus in a verdant valley wedged between the Western Ghats and the Sirumalai Hills. It currently houses 7 faculties, 23 Departments and 21 Extension Outfits implementing 59 variegated campus programmes Lying 55 kms. north of Madurai city, Gandhigram is easily accessible by rail and road. The nearest Railway Station is Ambathurai and the nearest Airport in Madurai.

The Centre for Geoinformatics GRI offers a two-year, four-semester M.Sc. programme in Geoinformatics as well as a one-year, two-semester PG Diploma programme in Spatial Technologies, with the aim of developing human resources in Geoinformatics for the emerging, high-tech enterprise scenario in India.



**Thane**
- Cyber Tech

**Chhattisgarh**
- National Informatics Centre

**Mumbai**
- Rolta India

**Cochin**
- Pragadigm IT Pvt Ltd.,

**Gurgaon**
- SGS Infotech Pvt. Ltd.,

**Kharagpur**
- Regional Remote Sensing Centre

**Coimbatore**
- Robert Boach
- Geoedge Technologies
- Redleaf Technology Pvt. Ltd.

**Trichy**
- DSM Soft

**Thiruvananthapuram**
- National Transportation Planning & Research Centre

**Kancheepuram**
- Hand in Hand India

**Guwahati**
- CGARD

**Placement Details**

The department arranges campus interviews / recruitment for the students of M.Sc Geoinformatics and PG Diploma in Spatial Technologies. The alumni of these programmes are employed in the following organizations:

**Hyderabad**

- NIRD, • Speck Infotech
- Remote Sensing Instruments
- National Remote Sensing Centre
- Advanced Data Processing Reasearch Institute

**New Delhi**

- Spatial Decisions

**Bangalore**

- Yahoo
- HCL Software Ltd
- Magnasoft
- Kavin Care
- Group SCE
- Navayuga Systems
- SECON Private Ltd.
- Lotus
- EGIS
- Genesys International Corporation Ltd.,
- SKY Group
- Layer Informatics
- SCE- Creocean (India) Pvt Ltd.
- Geo Spectrum
- IndiGeo Consultancy
- Data Collection Infotech Ltd.

**Chennai**

- TTK Maps
- InfoMaps
- GISBIZ
- NOKIA Maps
- Larson & Tubro
- Geofiny Technology
- Empower Consultancy
- EDR Conduce Pvt. Ltd.,
- Institute of Water Studies
- Institute of Remote Sensing
- National Information Centre
- EDGE Map Software Pvt. Ltd.
- Agricultural Engineering Dept.
- Apex Knowledge Technologies Pvt. Ltd.,
- Wipro
- Infinium Pvt. Ltd.,
- Prime Meridian
- Nav Tech India
- Navayuga Infotech
- Mail Soft Pvt. Ltd.
- GoSoft E Solutions
- Pushpam Data Centre Pvt. Ltd.,



**Eligibility**

- Any Graduates in Earth and Life Sciences.
- Any graduate who has studied Mathematics /Statistics/Business Mathematics / Computer Applications as one of the subjects at +2 level or at graduate level.
- Those who are awaiting final semester results can also apply. Admission to the program -mes is based purely on merit, i.e., on the basis of marks scored in an entrance test.

**Admission Procedure**

Students seeking admission to the programmes have to apply in the prescribed form issued every year during April / May. GRI releases an advertisement in leading national and regional dailies with details of the application fee and the last date for submission of filled in application form. These details can also be accessed from the Institute's Website, www.ruraluniv.ac.in

## M.Sc., GEOINFORMATICS

The courses of the programme are designed to provide adequate theoretical and practical knowledge about Geoinformatics and its applications. The programme is specifically designed for students who aspire for lucrative jobs as well as avenues of research/ advanced studies. The programme is offered on self-financing basis.

## Objectives of the Programme

**The objectives of the programme are:**

- Impart knowledge in digital cartography, Geographic Information System (GIS), remote sensing, watershed development, RDBMS, OOPS, DOT Net Frame work for GIS, Web Technology, Global Positioning System (GPS)

- Train students in the use of software in Computer Cartography, GIS, GPS and Remote Sensing.

## Programme Design and Curriculum

This multi-disciplinary programme offers students the opportunity to use a computer constantly, enabling them to master the latest software packages available in the fields of GIS, Digital Image Processing, GPS and Computer Science. The aim is to make the students master both theory and practice. The curriculum includes comprehensive and state-of-the-art courses in Geoinformatics.



## Internet Facility

The Institute has an Internet Browsing Centre with 100 mbps bandwith through OFC from BSNL and Railnet.

## Library

The Institute Library has a rich collection of reference books, back volumes, research periodicals, journals, magazines and project reports. It has INFLIBNET (INFormation LIBrary NETwork) connectivity with 100 mbps, which enable students to access thousands of e-journals. In addition, the Department Library has a good collection of books on Cartography, Remote Sensing, GIS, GPS, Computer Science, and Information Technology.

## Other Facilities

Separate hostels with adequate facilities are available for boys and girls. Cell for Culture and Art, Media Center, Yoga Center, Gym, Health Centre etc., are also available.

## Employment Potential

All our students trained in the use of various software packages related to Geoinformatics and are placed in government organisations and private companies even before the completion of their academic programme.

**Theory Courses**

- Introduction to Spatial Technologies
- Elements of Cartography
- IT for Spatial Technologies
- GIS
- Applications of Spatial Technologies
- Basics of Remote Sensing &
- Digital Image Processing
- GPS and its Applications
- Spatial Decision Support System

**Practical Courses**

- Digital Image Processing & GPS
- GIS
- Project Work

**Electives**

- Geography, Geology
- Regional Developments Planning
- Open Source Software
- Watershed Management

**Modular Courses**

- Spatial Modeling
- Introduction to Rural Development

## Project Work

During the second semester the students are required to do a project in any one of the fields of Spatial Technologies and submit a report. The Department helps in the selection of the topic of the project.

## Infrastructure Facilities

The department has two laboratories equipped with the hardware and the latest software required for the effective teaching and practice of these emerging technologies.

## Software available in the laboratory

GIS - Arc GIS, IDRISI
Digital Image Processing
ERDAS Imagine, Leica Photogrammetry suite
GPRS Software - Map Source
Programming Launguage
TURBO C++, VB Script , Visual Basic 6.0
& VB .net, Cold Fusion 6.0 & JAVA Script
Oracle 8i & HTML, Python.



**Theory Courses**

- Introduction to Geoinformatics
- Principles of Cartography
- IT for Geoinformatics
- Fundamentals of GIS
- Introduction to Rural Development
- Basics of Remote Sensing
- Object Oriented Programming Launguage
- Digital Image Processing for Geoinformatics
- Relational Database Management System
- Applications of Geoinformatics
- Research Methods and Statistics
- GPS and its Applications

**Practical Courses**

- Geographical Information System
- RS, DIP & Photogrammetry
- DOT NET Frame Work for GIS
- Customization of GIS Software
- Applications of Geoinformatics
- Case Study in GIS / RS / Web GIS

**Electives**

- Java Programming / Computer Graphics
- Watershed Management, RDP
- Web Technology for Geoinformatics
- Geography, Geology

**Modular Courses**

- Spatial Decision Support System
- Introduction to Rural Development
- Open Source Software

**Internship**
**Dissertation**

## Case Study

During the third semester, the students are required to do a Case Study in GIS, Image Processing or GPS in order to enable them to gain intensive practical knowledge. In addition, the students are required to do small projects in practical applications as part of the practical courses. They are encouraged to make presentations of seminar papers as part of theory courses. All this enables the students to realize their full potential.

### Dissertation

This programme has a dissertation component also. In this component, the students are required to select a suitable research topic in any field of Geoinformatics and submit a dissertation. The department guides them in finding suitable topics and institutions for their dissertation work. During the final semester they have to undergo internship in Geoinformatics Companies/ Institutions. This helps the students to learn the latest trends in the field of Geoinformatics.

## PG DIPLOMA IN SPATIAL TECHNOLOGIES

The courses of this programme are aimed at training students in the use of Spatial Technologies. The programme provides students practical training and field knowledge so as to give them sufficient industry orientation and practical skills. The programme is specifically designed for students who aspire to land lucrative jobs in a short period.

### Objectives of the Programme

The objectives of the programme are:

- Impart knowledge in GIS, Remote Sensing
- Train students in the use of software packages in Digital Cartography, GIS, and Remote Sensing.

### Programme Design and Curriculum

This multi-disciplinary programme is so designed that the students will have an opportunity to use a computer constantly, enabling them to master the latest software packages available in the field of Spatial Technologies. The programme is handled by a qualified team of dedicated faculty with all state-of-the-art facilities for achieving excellence in the subject. The curriculum is comprehensive and extensive. The practical classes include off-campus industry orientation programmes besides laboratory exercises and research sessions.