

About IIT Kharagpur



Kharagpur - a dusty town tucked away in the eastern corner of India, famous until 1950 as home to the longest railway platform in the world - became the nursery where the seed of the IIT system was planted in 1951. IIT Kharagpur started its journey in the old Hijli Detention Camp in Eastern India, where some of the country's great freedom fighters toiled and sacrificed their lives for India's independence. Spurred by the success of IIT Kharagpur, four younger IITs sprouted around the country in the two following decades, and from these five came thousands of IITians, the brand ambassadors of modern India. It was the success of this one institution at Kharagpur that wrote India's technological odyssey.

The Institute takes pride in its relentless effort to provide the best platform for both education as well as research in the areas of science and technology, infrastructure designs, entrepreneurship, law, management, and medical science and technology. IITKGP is not just the place to study technology, it is the place where students are taught to dream about the future of technology and beam across disciplines, making differences enough to change the world.

Program Features/ Structure

Classroom lectures – 50%
Hands-on with RS software and R programming – 25%
Database creation and model simulation for a case study – 25%

Program Schedule and Venue

1 week, 13 – 19 October
2019 (9:30 AM – 6 PM)

IIT Kharagpur – Centre for
Oceans, Rivers,
Atmosphere and Land
Science (CORAL)

Program Fee

Nil for AICTE-QIP
sponsored participants

For others - INR
20,000/- (Twenty
thousand) + GST @18%
per participant

Who will benefit (Eligibility)

Teacher/ Researcher in the
field of Earth Science,
Remote Sensing,
Geography, Planning, etc.

Last day of Registration

4

October 2019

Accommodation

Accommodation will be
provided to the AICTE-QIP
sponsored participants at
the campus Guesthouse.
For other participants, the
same will be provided on
chargeable basis as per
rule.

How to Apply

Use the link: <https://erp.iitkgp.ac.in/CEP/courses.htm> to apply
ONLINE.



Payment if applicable is to be done **ONLINE** after getting short listed for the program.

Contact Us

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AICTE QIP

QUALITY IMPROVEMENT PROGRAMME

Indian Institute of Technology Kharagpur
2019

Land Use Land Cover Modeling Using Open Source

1 Week

13 – 19 October 2019

Introduction / Overview

Land use and land cover (LULC) change has been recognized as a key driver of global climate change by influencing land surface processes. LULC is interlinked with environmental and socio-economic systems. The driver plays leading role in LULC changes, and are derived from the interrelationship of the various elements such as altitude, slope, aspect, soil type, precipitation etc. are grouped as environmental; and population, literacy rate, household, drinking water facility, medical facility, etc. Remote sensing with its synoptic view, fast data acquisition and digital format suitable for computer processing, is one of the most successful and reliable data source in last few decades in recording spatio-temporal LULC change. Modeling of potential future LULC assigning a set of defined conditions offers the opportunities to examine the probable spatiotemporal changes.

Program Objectives

The prime objective of this proposed course is to provide participants with both the theoretical and practical experiences in all aspects of remote sensing applications in studying land sciences. The course will mainly cover the particular fields on: use of open source multi-sensor satellite remote sensing data for automated land cover mapping; use of R programming for geostatistical analysis; and use of open-source modeling platform for simulating LULC scenarios. The outcomes of these models have prominent applications, e.g., in planning, managing, policy formulation, studying impact on climate and hydrological cycle, etc.

What you will learn

Program Content

Introduction to basics of Remote Sensing

Familiarization with various open source Remote Sensing and Geospatial data

Hands-on learning with image processing and GIS software

Statistical and machine learning approaches for LULC classification

Generation of landscape metrics for assessment of LULC dynamics

Sources and generation of various geospatial data for modeling

Hands on with R programming language

Geostatistical analysis to quantify and qualify the drivers of landscape changes

Introduction to open source models on LULC dynamics (Dyna-CLUE)

Case study with Dyna-CLUE model

Database generation, model simulation, calibration and validation

LULC Projection and Discussion

About the Faculty

Coordinator

Dr. Mukunda Dev Behera

Dr. Mukunda Dev Behera is Associate Professor in Centre for Oceans, Rivers, Atmosphere and Land Science (CORAL), Indian Institute of Technology Kharagpur. His major research areas include Terrestrial Remote Sensing, Spatial Biodiversity, Ecological Climatology, Biomass and Carbon Sequestration, Land Use and Land Cover (LULC) Dynamics. He has contributed in developing national database on decadal LULC and Vegetation type. His current research project include: Chlorophyll Concentration estimation and plant diversity assessment in Bhitarkanika Mangrove forests using Hyperspectral Data, Climate Change effects on Indian forest cover, Species level mapping & Above Ground Biomass estimation, Estimating forest productivity using LAI and Chlorophyll florescence, Ecological Niche Modeling of Primula and Rhododendron species. He has published more than 100 research papers in different peer-reviewed journals, scientific articles, conferences, books and book chapters.

External Faculty

Dr. Pulakesh Das

Dr. Pulakesh Das is Assistant Professor in the department of Remote Sensing and GIS, Vidyasagar University, Midnapore. His major research interest includes Geoinformatics, Land Use and Land Cover (LULC) Dynamics, Climate Change Impact on Forest, Hydrological Modeling. He has also contributed in developing national database on decadal LULC. He has published about 19 research papers in various peer-reviewed journals and conferences.