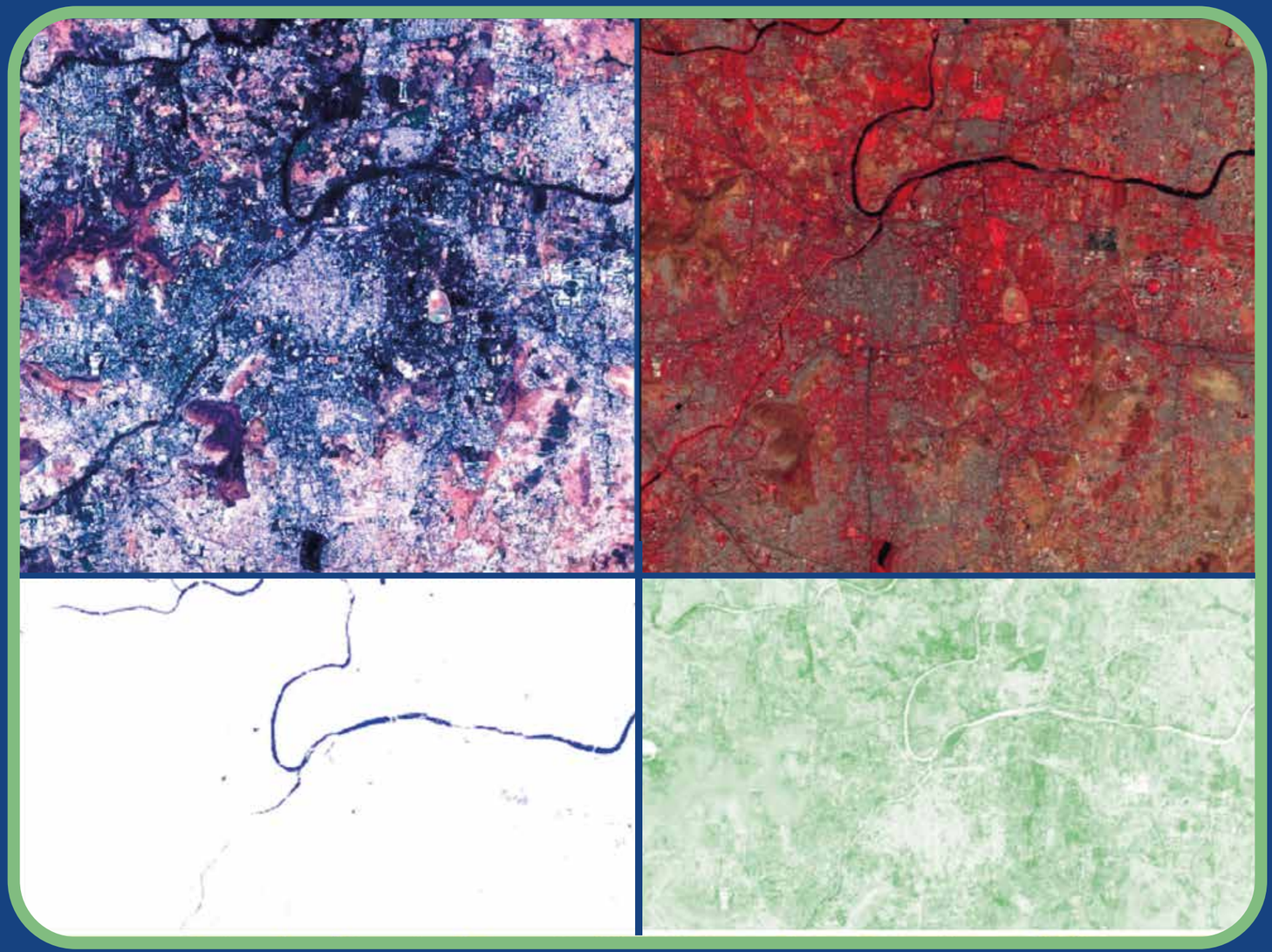
continuing education programme

Nov 21 – 25, 2022

@Wipro Learning Centre, Wipro, Sarjapur, Doddakannelli, Sarjapur Road, Bangalore – 560035

Azim Premji University



Introduction to Remote Sensing using Quantum GIS

Five day course for practitioners from development, conservation, sustainability, public health and related sectors

Apply before Oct 30, 2022

Why this Course?

The use of state-of-the-art remote sensing has gained momentum in the past few decades with the increase in freely available datasets and advancement in technology. It is widely used in development, conservation, sustainability and public health domains, among others.
This course aims to provide a basic understanding of remote sensing and digital image processing, along with hands-on training on using this technology to investigate changes in the biophysical characteristics and land cover on the Earth Surface using open-source software.

What will you learn?

- On successful completion of the course, participants will have:
  Understanding of basic principles of remote sensing
- Ability to apply remote sensing to characterize different features of the land surface.
- Capability to generate a map with relevant land cover statistics

Who should attend?

Practitioners, teachers, early career researchers and PhD scholars working in the field of development, conservation, sustainability, public health and related sectors.

Pedagogy

The course is intended to be delivered through theory and hands-on sessions. Theory will assist in enhancing the knowledge of the basics of remote sensing and its rationale, while hands-on tutorial will give exposure to how to use the technology. Questions which address “Why” (e.g. why we perform certain steps, or why are we getting certain outputs) can be answered through a basic understanding of the science behind remote sensing. Questions related to “How” (e.g., how to analyse remotely sensed datasets) can be understood using hands-on tutorials.

Certificate of Participation

The participants will be awarded a certificate of participation after successful completion of the 5 day training.

Session Details (All sessions will start at 9:00 AM and end at 4:30 PM)

Day	Content
Day 1	**Lecture:** Introduction to Remote Sensing Different satellite/sensor Optical remote sensing Resolutions **Hands-on Session:** Installation of QGIS, displaying vector and raster files. Exploring QGIS software for RS, subsetting datasets

Day	Content
Day 2	**Lecture:** Colour composites, elements of visual interpretation **Hands-on Session:** Downloading RS data (reflectance data), processing and generating different 3-band composites to view and visually interpret images (TCC, SFCC, FCC). Identifying different features of terrain and land cover.
Day 3	**Lecture:** Spectral reflectance curve, point based image enhancement, image transformation (indices to map water, vegetation, urban cover etc) **Hands-on Session:** Contrast enhancement of images, generation of vegetation, moisture, urban and other related indices. Downloading datasets of earlier time periods, generating FCCs and identifying features.
Day 4	**Lecture:** Image histogram, image thresholding (bands/indices) **Hands-on Session:** Performing thresholding on datasets from different time periods. Generating area statistics: vegetation, water, urban and so on. Computation of area lost/gained.
Day 5	Presentation by participants on utility of remote sensing for their own work followed by group discussion. • Closing session. • Wrap-up, followed by group reflection, written feedback, and presentation of certificates.

Course Directors

Neeti

Neeti is a geospatial scientist with experience of more than 15 years in the field. Her research focuses on using geospatial science and technology in the field of forestry,agriculture and disaster management. Prior to joining Azim Premji University, she has worked at Indian Space Research Organization, Clark University, Goddard Space Flight Center, Boston University, WoodsHole Research Center and TERISAS.

Harini Nagendra

Harini Nagendra teaches sustainability at Azim Premji University. She has over 30 years of experience working on remote sensing and GIS for research on ecology, conservation and urban sustainability. her research focuses on land cover change in forests and cities across South Asia as well as in other parts of the world. She has written over 150 research papers and supervised a number of phD students working on these topics.

Fee Structure

- General: Rs. 5900/-
- Field Partner organisations of University: Rs 1180/-
- Partial fee waivers available for deserving research scholars

Accommodation and other logistics

The course fee does not include accommodation. The university can arrange accommodation for 06 days for an additional payment of Rs 6000. All requests for accommodation must be made at the time of application – we are unable to entertain requests made at a later stage. Alternatively, participants can make their arrangements for stay.

All other costs, such as travel to and from Bangalore, local travel, stay, Breakfast, lunch and dinner, must be borne by participants.

Note: All the participants need to bring a working Windows/Mac laptop. The laptop needs to have minimum 8GB RAM and 20 GB physical space to install and run the software.

For more information,
email at rs_rc@apu.edu.in

About Azim Premji University

Azim Premji University was established as a not for- profit, private university under the Azim Premji University Act 2010. The University has a clear social purpose of working towards a just, equitable, humane and sustainable society. Azim Premji University plays a critical role in developing new talent, building capacity in existing functionaries and creating domain knowledge in the fields of education and in development. The Azim Premji Foundation is the sponsor of the University. The roots of Azim Premji University lie in the learning and experience of a decade of work in elementary education by Azim Premji Foundation. The University is one of the Foundation's key responses to the challenges confronting the education and development sectors in India. The University offers Bachelors' degrees in Physics, Biology, Maths, Economics and Humanities and Masters' degrees in Education, Development, Public Policy and Governance and LLM (Law and Development).

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