

## About Visva-Bharati

Founded by the first non-European Nobel Laureate Rabindranath Thākur (popularly known as Tagore) in 1921, Visva-Bharati was declared to be a central university and an institution of national importance by an Act of Parliament in 1951. The President of India is the Paridarsaka (Visitor) of the University, the Governor of West Bengal is the Pradhana (Rector), and the Prime Minister of India acts as the Acharya (Chancellor). The President of India appoints the Upacharya (Vice-chancellor) of the University. Department of Agricultural Engineering is established in the year 2016.

## About the Workshop

Application of Geoinformatics has been widely visible in the areas of agriculture, environment, forestry, urban planning, rural development, water supply and drainage system etc. There is huge demand of new technologies in Agriculture sector to risk and enhance profit margin to the farmers. It is high time for professional in agriculture to have basic and advanced knowledge of GIS, Remote sensing, precision agriculture technologies to attract educated mass towards agriculture. Understanding weather information, analyzing soil health card, protecting crops against emergent threats will be facilitated with knowledge of Geoinformatics. The weather prediction is gaining importance for developing short and long-term planning in agriculture. It is also required to analyze in a faster rate with greater accuracy. The application of Indian Knowledge System (IKS) will support in collecting and monitoring weather information which will in turn help in better crop production. The five-day programme will facilitate both the beginners and professionals. The use of opensource software such as QGIS, google earth engine, open access material & data sharing technique, IoT in agriculture etc. will be tremendously beneficial to the participants of the programme. This will also support students in their respective research work.

# 3<sup>rd</sup> One Week Workshop

On

## “Geo-informatics and IKS Techniques for Agriculture and Meteorological Applications”

16-20 February 2026



Organized by

Department of Agricultural Engineering,  
Palli Siksha Bhavana  
(Institute of Agriculture),  
Visva-Bharati (A Central University),  
Sriniketan, West Bengal, India

## Scope of the Course

### A. Basics of Geoinformatics

Understand Map concepts; how GIS works; Technical terms and common task in GIS; Types of data model and uses; Data type: vector and raster; consideration of scale and generalization; Explain types of coordinate system; projection and datum; Describe kinds of classification terms and data exploration terms; Map elements and map composition; Type of analysis in GIS, functions and their input, outputs.

### B. Geoinformatics application in Agriculture and Agro-Meteorology

Precision farming and application in Agriculture; Understand Digital Image Processing Techniques in Agriculture Resource Management; Understand Precision farming for Crop management; GIS and RS applications in Water management. Climate models, weather forecasting, Cases studies on agricultural issues using GIS/RS.

### C. Image processing with QGIS

Scope of QGIS; Different image file formats, Image input, Layout, True/ false color image, NDVI calculation, change detection, classification, mosaic, Geo-processing operation, basic digitization, Geometric transformations/Geo-referencing technique, Watershed model, Multispectral transforms: scatter plot; Limitations and future of Digital Image Processing Technique.

**D. Image processing Arc GIS/ ERDAS Imagine**  
Scope of Arc GIS/ ERDAS; Different image file formats, Image input, Layout, True/ false color image, NDVI calculation, Geo-processing operation, change detection.

### E. Application of AI tools

Scope of machine learning in agriculture, various machine learning models, Cloud computing, programming with R/GEE etc., introduction to deep learning

### F. IKS in Agriculture & Agro-Meteorology

Scope and importance of Indian Knowledge System (IKS), IKS techniques in agriculture, integration of IKS with modern agriculture technique, Traditional weather prediction techniques. Case studies of climate change models.

## Mode of Workshop

Offline mode (\*Note: Few lectures may be online mode)

## List of resource persons

- **Dr. Joydeep Mukherjee, Principal Scientist**  
Department of Agricultural Physics, IARI, New Delhi
- **Prof. Manoj Kumar Nanda, Professor**  
Department of Agricultural Meteorology & Physics, Faculty of Agriculture, BCKV, Mohanpur, West Bengal
- **Dr. Nimai Chand Saha**  
Librarian, Visva-Bharati, Santiniketan
- **Dr. Bikash Ranjan Parida, Associate Professor & Head,**  
Department of Geoinformatics, Central University of Jharkhand, Jharkhand
- **Ms. Malyn Hansepi, GIS, Trainer and analyst,**  
GIS Vision India, Guwahati, Assam
- **Dr. Sayan Choudhary, Assistant Professor,**  
Directorate of Open and Distance Learning (DODL), Kalyani University, Kalyani, West Bengal
- **Mr. Sk. Mithun, Assistant Professor**  
Department of Geography, Haldia Government College, Haldia, West Bengal
- **Mr. Ayan Ghosh, GIS Engineer**  
CSS GeoSpatial, Kolkata, West Bengal

## Organizing Committee

### **Patron**

**Dr. Prabir Kumar Ghosh, Hon'ble Vice-Chancellor**

**Visva-Bharati, Santiniketan**

### **Director**

**Professor Binoy Kumar Saren, Principal,**

**Palli Siksha Bhavan (Institute of Agriculture)**

**Visva-Bharati, Sriniketan**

### **Coordinator**

**Dr. Kishore Chandra Swain, Head**

**Department of Agricultural Engineering, Palli Siksha**

**Bhavan (Institute of Agriculture)**

**Visva-Bharati, Sriniketan**

### **Assistant coordinator**

**Prof. Pulak K. Patra, Professor,**

**Department of Environmental Studies, Siksha**

**Bhavana (Institute of Science), Visva-Bharati,**

**Santiniketan.**

### **Convenor**

**Dr. Shrulekha Das, Associate Professor,**

**Department of Agricultural Engineering, Palli Siksha**

**Bhavan (Institute of Agriculture)**

**Visva-Bharati, Sriniketan**

### **Treasurer**

**Dr. Lamneithem Hangshing, Assistant Professor**

**Department of Agricultural Engineering, Palli Siksha**

**Bhavan (Institute of Agriculture)**

**Visva-Bharati, Sriniketan**

## Contact

**Dr. Kishore Chandra Swain**

**Phone: 9800458469**

**Email: swainseminar@gmail.com**

## Participants:

Nearly 30-50 professionals, research scholars and students of relevant fields can participate in the Workshop programme. Selection will be first come first served basis.

## Workshop Proceedings

Workshop proceedings will include papers from the participants which will be published as edited volume with ISBN number. The full paper should be limited to 10-12 pages (Times new roman, 12 fonts).

## Registration fees:

Registration fee includes refreshment and workshop materials etc. Accommodation may be arranged on payment basis.

## Registration fee details:

<b>Faculty members/scientists</b>	<b>Rs. 3000.00</b>
<b>Students</b>	<b>Rs. 1500.00</b>

## Registration

<https://forms.gle/iroHzWXWxtJmWh5g6>

or email to: [swainseminar@gmail.com](mailto:swainseminar@gmail.com)

## Payment Details

**Account name: Visva-Bharati University Project**

**Project Account no.: 50100195564478**

**Bank name: HDFC Bank**

**Branch name: Shivam Complex,**

**1st Floor, Sriniketan Road, Bolpur, Birbhum, West Bengal**

## Weather at Visva-Bharati

The weather in February is comfortable compared to the peak winter season.

The average temperature in February is around 25°C with very little rainfall.