

SKILL DEVELOPMENT TO USE SPATIAL DATA FOR NATURAL RESOURCES MANAGEMENT IN AGRICULTURE

Basic fundamental applications of Remote Sensing and GIS

(16 Dec 2021 -13 Jan 2022)



Centre for Advanced Agricultural Sciences and Technology



**NATIONAL AGRICULTURAL HIGHER EDUCATION PROJECT
COLLEGE OF AGRICULTURAL ENGINEERING, JAWAHARLAL NEHRU
KRISHIVISHWA VIDYALAYA JABALPUR, MP, 482004**

Project website: www.nahep-jnkvv.org

Chief Patron

Dr. P.K. Bisen

Honorable Vice-Chancellor, JNKVV, Jabalpur

Patrons

Dr. R.C. Agrawal

National Director, NAHEP, ICAR, New Delhi

Dr. Prabhat Kumar

National coordinator, NAHEP, ICAR, New Delhi

Dr. Dhirendra Khare

Dean Faculty of Agriculture

Dr. G. K. Kautu

Director Research Services

Dr. D. P. Sharma

Director Extension Services

Dr. Abhishek Shukla

Director Instructions

Dr. Atul Kumar Shrivastava

Dean Faculty of Agricultural Engineering

Convener & Course Director

Dr. R. K. Nema

PI, NAHEP CAAST

Program Organizer & Training Coordinator

Dr. M. K. Awasthi

Co-PI NAHEP (Skill Development)

About Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur

Jawaharlal Nehru Krishi Vishwavidyalaya established on October 2, 1964, is a forerunner university located in Jabalpur, Madhya Pradesh. The university is awarded Sardar Ballabh Bhai Patel Outstanding University Award for the year 2018 by the Indian Council of Agricultural Research, New Delhi. The university has various constituent colleges, Agricultural Research Stations, and Krishi Vigyan Kendra's. The University offers Bachelor's, Master's, and Doctoral degrees in the Faculty of Agriculture and the Faculty of Agricultural Engineering. The University also offers diploma courses of two years in "Seed Production" and "Nursery Management" at Horticulture Vocational Education Institute, Garhakota, Sagar, MP.

About NAHEP

NAHEP is designed to strengthen the national agricultural education system in India with overall objective to provide more relevant and high-quality education to agricultural university students. This programme has been promoting efficiency and competitiveness through changes in working mechanism of agricultural universities, raising the teaching and research standards through improved research and teaching infrastructure and enhanced faculty competency and commitments, and making agricultural education more attractive to talented students. There are four key components under NAHEP, namely; Institutional Development Plan (IDP), Centers for Advanced Agricultural Sciences and Technology (CAAST), ICAR to support excellence in agricultural universities (AUs), and ICAR Innovation Grants to AUs

Skill Development to use Spatial Data for Natural Resource Management in Agriculture

- To build basic capacity for using RS & GIS techniques applied for betterment of Natural Resource Management particularly in Agriculture and allied sectors.
- To identify appropriate techniques for integration of spatial and ground data to realize problems related to land, water and vegetation.
- To develop user friendly spatial data products using identified technologies for policy makers, researchers, field workers and farmers.

About the Basic Fundamental Training of Remote Sensing and GIS

Online training on Hands on Training of Remote Sensing and GIS Using QGIS live mentorship and hands on from the subject matter expert having in-depth knowledge of the relevant field. Access to shared resources, helpful in learning and practicing remote sensing and GIS. Recording that can be viewed anytime.

Address for Correspondence

Dr. Sourabh Nema, Research Associate, NAHEP

Dr. Minakshi Meshram, Senior Research Fellow,

Er. Anjali Patel, Young Professional, NAHEP

NAHEP [Email: sdnahep@gmail.com](mailto:sdnahep@gmail.com)

Contact No: +91-9930081190/9755390422/8770189513

Participants

PG and PhD student of JNKVV Jabalpur & Other Agriculture Universities have been invited to participate in this on-line training program. This training program will help them to learn and apply basic RS and GIS application techniques for their research application.

Registration Details:

Please fill the Google registration form for registering on this training

<https://forms.gle/qkhqtfVqwdYVK6F28>

The registration link will be closed by 4.00 pm at 15.12.2021

Webex Meeting Details

Link will be shared to selected eligible & nominated participants as seats are limited

Please Note:

- All participants should take necessary permission from their employer/ Institutions/University
- Attendance of participants will be monitored for all the training sessions. 75% of the training attendance & 50% presence per attended session will be necessary for the eligibility of certificate.

**Training Title: “Basic Fundamental applications of Remote Sensing and GIS”
(16 Dec 2021 – 13 Jan 2022)**

Course Coordinator: Dr. R. K. Nema

Training Coordinator: Dr. M. K. Awasthi

Date	Time	Topic	Faculty
16/12/2021	2.45 pm to 3.00 pm	Inauguration	Dr. R. K. Nema Dr. M. K. Awasthi
	3.00 pm to 6.00 pm	Basics of Remote Sensing and its application in agriculture Pre-Training Test Interaction with participants	Dr. Suresh Kumar (Scientist, G IIRS Dehradun)
17/12/2021	3.00 pm to 6.00 pm	Satellites, Sensors, and Resolution & Visual Interpretation of Satellite Imagery	Dr. Arpna Bajpai Dr. Sourabh Nema
20/12/2021	3.00 pm to 4.30 pm	Different Geoportals (Earth explorer, Bhuvan, Copernicus ESA, etc.). Introduction to GIS	Dr. Sourabh Nema
	4.30 to 6.00 pm	Basics of Digital Image processing	Dr. Poonam Mahajan (Scientist F, IIRS Dehradun)
21/12/2021	3.00 pm to 5.00 pm	Introduction of QGIS ,Downloading & Installation of QGIS Software	Er. Krishna Singh
	5.00 to 6.00 pm	Fundamentals of RS application in vegetation	Dr. V. K.Sahgal, Professor, IARI, New Delhi
22/12/2021	3.00 pm to 4.30 pm	Introduction of QGIS open-source software & its overview	Er. Rachit Nema
	5.00 to 6.00 pm	Special Lecture	Dr. V. K.Sahgal, Professor, IARI, New Delhi
23/12/2021	3.00 pm to 6.00 pm	Georeferencing of Map. Generation of vector features such as Point, Line, and Polygon)	Dr. P S Pawar
24/12/2021	3.00 pm to 4.45 pm	Features (Point, Line, and Polygon) digitization, filling data in the attribute table and area calculation.	Dr. Devendra Vasht
	4.45 pm to 6.00 pm	Distinguished Scientist Lecture	
27/12/2021	3.00 pm to 6.00 pm	Downloading of Landsat-8 satellite dataset and about bands information.	Mr. Sumit Kakade
28/12/2021	3.00 pm to 4.45 pm	Layer stacking of different bands and clipping of Area of Interest (AOI) Continue.....	Dr. Minakshi Meshram
		Distinguished Scientist Lecture	

29/12/2021	3.00 pm to 6.00 pm	Band combinations for agriculture applications using False Colour Composite (FCC). Distinguished Scientist Lecture	Er. Anjali Patel
30/12/2021	3.00 pm to 6.00 pm	Introduction in QGIS and Pre-Processing of Landsat 8 using SCP	Er. Anjali Patel
31/12/2021	3.00 pm to 6.00 pm	Region of Interest (ROI) and Creating Training Dataset	Er. Anjali Patel
03/01/2022	3.00 pm to 6.00 pm	Introduction of Classification, Supervised classification using Minimum distance algorithm	Dr. Umakant Rawat
04/01/2022	3.00 pm to 6.00 pm	Introduction of Classification, Supervised classification using Minimum distance algorithm	Mr. O P Prajapati
05/01/2022	3.00 pm to 6.00 pm	Supervised classification using Minimum distance algorithm	Mr. O P Prajapati
06/01/2022	3.00 pm to 4.30 pm 4.30 to 6.00 pm	Area Calculation of LU/LC classified data Special Lecture	Mr. O P Prajapati Dr. V. K.Sahgal, Professor IARI, New Delhi
07/01/2022	3.00 pm to 4.30 pm 4.30 to 6.00 pm	Map Layout Creation Distinguished Scientist Lecture	Er. Alok Rajput
10/01/2022	3.00 pm to 6.00 pm	DEM data processing (Drainage/ Watershed Delineation)	Dr. Sourabh Nema
11/1/2022	3.00 pm to 4.30 pm 4.30 pm to 6.00 pm	DEM data processing (Drainage/ Watershed Delineation) Distinguished Scientist Lecture	Dr. Sourabh Nema
12/01/2022	3.00 pm to 6.00 pm	DEM data processing (Elevation, Slope, Aspect, contour map preparation) & external thematic maps using WMS layers	Aniket Rajput
13/01/2022	3.00 pm to 4.30 pm 4.45 pm – 6.00 pm	Distinguished Scientist Lecture Presentation by Participants on LU/LC & Thematic maps (as prepared during exercise) Post Training Assessment & Valedictory Function	Dr. R. K. Nema Dr. M. K. Awasthi