

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

Training Programme on NRM through RS and GIS Applications

(23rd March to 22nd April 2022)



Centre for Advanced Agricultural **S**ciences and **T**echnology



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

Project website: www.nahep-jnkvv.org

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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

Objectives:

- 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 policymakers, researchers, field workers and farmers.

About the Educative learning program of Agriculture Executives

Online training on intended to cover the basics of RS & GIS as well as empowering participants to efficiently read and use the information contained on various classified maps that are readily available or will become available in the future for various planning purposes.

Address for Correspondence

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Participants

University Teachers/Faculty Members/Scientists/Technical staff are invited to participate in this on-line training program. This training program will help them to apply basic RS and GIS application techniques in Agriculture.

Registration Details:

Please fill the Google registration form for registering on this training

<https://forms.gle/ihx6vnMASW3y7hyo7>

The registration link will be closed by 5.00 pm at 22.03.2022

Webex Meeting Details

Link will be shared to all the selected participants by NAHEP Project

Please Note:

- **Attendance of participants will be monitored for all the training sessions. 75% of the training attendance**

Training Title: “NRM through RS and GIS Applications” (23 March 2022 – 22 April 2022)

Date	Topics	Time	Resource Person
Basics of Soil and Water Engineering			
23/03/2022	Inauguration	10:45 to 11:00 AM	Dr. R. K. Nema Dr. M. L. Sahu Dr. M. K. Awasthi Dr. S. K. Sharma
	Common structures and load distributions and force analysis	11:00 to 12:00 PM	Dr. S. K. Pyasi Er. H.M.Vashik
	Analysis of soil sample – sand, silt, clay, sieve analysis, and Hydrometry	12:00 to 1:00 PM	
	Determination of soil mechanical properties	1:00 to 2:00 PM	
24/03/2022	Types of drippers, laterals and filters and their layout in drip design	11:00 to 12:00 PM	Dr. M. K. Awasthi Dr. Arpna Bajpai
	Design and layout of a sprinkler/drip Irrigation and its Maintenance	12:00 to 1:00 PM	
		1:00 to 2:00 PM	
25/03/2022	Basics of Remote sensing and its application in Agriculture	11:00 to 12:00 PM	Dr. S. K. Sharma Dr. Sourabh Nema Dr. Umakant Rawat
	Thematic maps its preparation and use	12:00 to 1:00 PM	
	Introduction to open source software and Useful apps prevailing in NRM domain.	1:00 to 2:00 PM	
28/03/2022	Working out area of an irregular field by using chainage and distance measurement, Setting out right angles, Offset taking, Measurement of the area and Use of compass	11:00 to 12:00 PM	Dr. M. L. Sahu
		12:00 to 1:00 PM	Er. Y.N.Shrivastava
	Levelling exercise	1:00 to 2:00 PM	
	Working and use of Total station		
29/03/2022	Measurement and estimation of quantities for common structure – 2 room building. • Foundations – open – pile – latest • Plinth and floors properties • Super structure • Slabing	11:00 to 12:30 PM	Dr. A. K. Bajpai Er. Y.N.Shrivastava
	Costing for quantities , SOR for PWD and SOR for WK	12:30 to 2:00	
Hands on			
30/03/2022	Satellites, Sensors, and Resolution & Visual Interpretation of Satellite Imagery	11:00 to 12:30 PM	Dr. Arpna Bajpai
	Different Geoportals (Earth explorer, Bhuvan, Copernicus ESA, etc.). Introduction to GIS	12:30 to 2:00	Dr. Sourabh Nema

31/03/2022	Introduction of QGIS, Downloading & Installation of QGIS Software	11:00 to 12:30 PM	Er. Krishna Singh
	Introduction of QGIS open-source software & its overview	12:30 to 2:00	Er. Rachit Nema
01/04/2022	Georeferencing of Map.	11:00 to 2:00 PM	Dr. P S Pawar
04/04/2022	Features (Point, Line, and Polygon) digitization, filling data in the attribute table and area calculation.	11:00 to 2:00 PM	Dr. Devendra Vasht
05/04/2022	Downloading of Landsat-8 satellite dataset and about bands information.	11:00 to 2:00 PM	Mr. Sumit Kakade
06/04/2022	Layer stacking of different bands and clipping of Area of Interest (AOI)	11:00 to 12:30 PM	Dr. Arpna Bajpai
	Band combinations for agriculture applications using False Colour Composite (FCC).	12:30 to 2:00	Er. Anjali Patel
07/04/2022	Pre Processing of Landsat 8 using SCP	11:00 to 2:00 PM	Er. Anjali Patel
08/04/2022	Region of Interest (ROI) and Creating Training Dataset	11:00 to 2:00 PM	Dr. Devendra Vast
	Introduction of Classification, Supervised classification using Minimum distance algorithm		
11/04/2022	Unsupervised Classification	11:00 to 2:00 PM	Mr. Om Prakash Prajapati
12/04/2022	Introduction of Classification, Supervised classification using Minimum distance algorithm	11:00 to 2:00 PM	Dr. Umakant Rawat
13/04/2022	Area Calculation of LU/LC classified data	11:00 to 1:00 PM	Mr. Om Prakash Prajapati
	Distinguished Scientist Lecture	1:00 to 2:00	Dr. R. N. Shrivastava
(18/04/2022)	Map Layout Creation	11:00 to 2:00 PM	Mr. Alok Rajpoot
(19/04/2022)	Installation of QuickOSM plugin and downloading of OSM data	11:00 to 2:00 PM	Dr. Umakant Rawat
20/04/2022	DEM data processing (Drainage/ Watershed Delineation)	11:00 to 1:00 PM	Aniket Rajpoot
	Distinguished Scientist Lecture	1:00 to 2:00 PM	Dr. R. K. Nema
21/04/2022	DEM data processing (Elevation, Slope, Aspect, contour map preparation) & external thematic maps using WMS layers Aniket	11:00 to 2:00 PM	Aniket Rajpoot
22/04/2022	Presentation by Participants on LU/LC & Thematic maps (as prepared during exercise)	11:00 to 12:30 PM	Dr. R. K. Nema Dr. M. K. Awasthi Dr. S. K. Sharma Dr. M. L. Sahu
	Post Training Assessment & Valedictory Function	12:30 to 1:00 PM	