

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

**HANDS ON TRAINING OF REMOTE SENSING AND GIS  
USING QGIS**

**(21 Sep -11 Oct 2021)**



**Centre for Advanced Agricultural Sciences and Technology**



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

**Project website: [www.nahep-jnkvv.org](http://www.nahep-jnkvv.org)**

## **Chief Patron**

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**Dr. R. K. Nema**

PI, NAHEP CAAST

## **Program Organizer**

**Dr. M. K. Awasthi**

Co-PI NAHEP (Skill Development)

## **Program Coordinator**

**Dr. S. K. Sharma**

Co-PI NAHEP (Research)

## **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 Online Hands on Training of Remote Sensing and GIS Using QGIS

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

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### Participants

Teachers/KVK Scientists and Technical staff of JNKVV Jabalpur & Other Agriculture Universities have been invited to participate in this online training program. This training program will help them to learn and apply RS and GIS techniques for their research application.

### Registration Details:

Please fill the Google registration form for registering on this training

<https://forms.gle/3DY7znLpCr8dU6AVA>

The registration link will be closed by 3.00 pm at 20.09.2021

### 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.
- 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.

# “Hands on Training on Remote Sensing and GIS Using QGIS”

(21 Sep 2021 – 11 Oct 2021)

Course Coordinator: Dr. R. K. Nema

Training Coordinator: Dr. S. K. Sharma

| Date       | Time              | Topic  | Faculty                                      |
|------------|-------------------|--|--|
| 21/09/2021 | 10.30AM-11.00 AM  | Inauguration   | Dr. R. K. Nema<br>Dr. M. K. Awasthi          |
|            | 11.00 AM-12.00PM  | Introduction to Remote Sensing and applications in Agriculture.  | Dr. Suresh (IIRS Dehradun)/ Dr. D Haldar     |
|            | 12.00 PM- 1.30 PM | Pre-Training Test  |  |
|            | 2.30 PM-5.30 PM   | Specialized learning   |  |
| 22/09/2021 | 10.30AM-1.30 PM   | Satellites, Sensors, and Resolution<br>Visual Interpretation of Satellite Imagery                      | Dr. Sourabh Nema.                            |
|            | 2.30 PM-5.30 PM   | Special Lecture  | Dr. P S Tiwari<br>(Scientist IIRS, Dehradun) |
| 23/09/2021 | 10.30AM-1.30 PM   | Different Geoportals (Earth explorer, Bhuvan, Copernicus ESA etc.). Introduction to GIS                | Dr. Sourabh Nema                             |
|            | 2.30 PM-5.30 PM   | Special Lecture  | Dr. D Haldar (IIRS Dehradun)                 |
| 24/09/2021 | 10.30AM-1.30 PM   | Introduction of QGIS open-source software.<br>Downloading & Installation of QGIS Software Overview     | Dr. P. S. Pawar                              |
|            | 2.30 PM-5.30 PM   | Practice Session   |  |
| 25/09/2021 | 10.30AM-1.30 PM   | Georeferencing of Map.<br>Generation of vector features such as Point, Line and Polygon.               | Dr. P. S. Pawar                              |
|            | 2.30 PM-5.30 PM   | Special lecture  | Dr. N.R. Patel (Scientist IIRS Dehradun)     |
| 27/09/2021 | 10.30AM-1.30 PM   | Features (Point, Line and Polygon) digitization, filling data in attribute table and area calculation. | Dr. P. S. Pawar                              |
|            | 2.30 PM-5.30 PM   | Practice Session   |  |
| 28/09/2021 | 10.30AM-1.30 PM   | Downloading of Landsat-8 satellite dataset and about bands information.                                | Dr. Devendra Vasht                           |
|            | 2.30 PM-5.30 PM   | Practice Session   |  |
| 29/09/2021 | 10.30AM-1.30 PM   | Layer stacking of different bands and clipping of Area of Interest (AOI) <b>Continue.....</b>          | Dr. Devendra Vasht                           |
|            | 2.30 PM-5.30 PM   | Practice Session   |  |
| 30/09/2021 | 10.30AM-1.30 PM   | Layer stacking of bands and clipping of Area of Interest (AOI).  | Dr. Devendra Vasht                           |
|            | 2.30 PM-5.30 PM   | Practice Session   |  |

|            |                 |  |   |
|------------|-----------------|--|---|
| 01/10/2021 | 10.30AM-1.30 PM | Band combinations for agriculture applications using False Colour Composite (FCC).         | Dr. Devendra Vasht  |
|            | 2.30 PM-5.30 PM | Practice Session   |   |
| 04/10/2021 | 10.30AM-1.30 PM | Introduction in QGIS and Pre-Processing of Landsat 8 using SCP                             | Dr. Devendra Vasht  |
|            | 2.30 PM-5.30 PM | Practice Session   |   |
| 05/10/2021 | 10.30AM-1.30 PM | Region of Interest (ROI) and Creating Training Dataset                                     | Dr Umakant Rawat  |
|            | 2.30 PM-5.30 PM | Practice Session   |   |
| 06/10/2021 | 10.30AM-1.30 PM | Introduction of Classification, Supervised classification using Minimum distance algorithm | Dr Umakant Rawat  |
|            | 2.30 PM-5.30 PM | Practice Session   |   |
| 07/10/2021 | 10.30AM-1.30 PM | Supervised classification using Minimum distance algorithm                                 | Dr Umakant Rawat  |
|            | 2.30 PM-5.30 PM | Practice Session   |   |
| 08/10/2021 | 10.30AM-1.30 PM | Area Calculation of LU/LC classified data  | Dr Umakant Rawat  |
|            | 2.30 PM-5.30 PM | Practice Session   |   |
| 09/10/2021 | 10.30AM-1.30 PM | Map Layout Creation  | Dr. Umakant Rawat<br>Dr. N.R. Patel (Scientist IIRS Dehradun)   |
|            | 2.30 PM-5.30 PM | Special lecture  |   |
| 11/10/2021 | 10.30AM-1.30 PM | Presentation by Participants on LU/LC (as prepared during exercise)                        | Dr Umakant Rawat<br>Dr. P. S. Pawar<br>Dr. Devendra Vasht<br>Dr. R. K. Nema<br>Dr. M. K. Awasthi<br>Dr. S. K. Sharma<br>Dr Umakant Rawat<br>Dr. P. S. Pawar<br>Dr. Devendra Vasht |
|            | 2.30 PM-5.30 PM | Post Training Assessment & Valedictory Function  |   |