

## How to Apply?

The applicants may see the guidelines available at the web site for the winter school at <https://cbp.icar.gov.in/ToDownload/Guidelines%20to%20participate%20in%20training%20program.pdf>. As per the ICAR instructions, the interested candidates should register and apply online through 'Capacity Building Programme' (CBP) Portal as follows:

1. Visit the website <https://cbp.icar.gov.in/> or click on Capacity Building Programme link under <http://www.icar.org.in/>
2. Login using your user ID and Password. To create user ID use "Create New Account" link.
3. After login, click on "Participate in Training" link and fill the proforma.
4. Take a printout and send duly signed copy through proper channel to The Course Director, Winter School 2023-24 on "Artificial Intelligence, Electronic Devices and IoT for Transforming Agriculture with Cutting-Edge Technologies" ICAR-Central Institute of Agricultural Engineering, Bhopal-462038 by post along with registration fee as per the address and contact details given overleaf. The advance scanned copy of the nomination may be sent by e-mail. Please feel free to contact the Course Director for any assistance.

**Note:** The participants are required to pay a sum of Rs. 50/- (Rupees Fifty only) as registration fee (Non-refundable) along with the completed application in the form of Demand Draft/ Indian Postal Order drawn in favour of 'ICAR UNIT-CIAE BHOPAL' payable at Bhopal.

## Important Dates

- Last date for receipt of applications : 15/12/2023
- Intimation to selected candidates : 18/12/2023
- Confirmation by selected candidates : 20/12/2023

## Contacts

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## ICAR Sponsored Winter School

Artificial Intelligence, Electronic Devices  
and IoT for Transforming Agriculture  
with Cutting-Edge Technologies

January 03-23, 2024



Organized by



ICAR-CENTRAL INSTITUTE OF AGRICULTURAL ENGINEERING  
Nabi Bagh, Berasia Road, Bhopal-462038 M.P. India



## Host Institute

The ICAR-Central Institute of Agricultural Engineering (CIAE) was established on February 15, 1976 at Bhopal (MP). The CIAE is a premier Institute in the country to conduct basic, applied and adaptive research in agricultural engineering. Human resource development by organizing specialized training courses is a major commitment of the Institute to upgrade the skills of engineers, scientists, subject matter specialists, farmers, manufacturers and planners engaged in the promotion of farm mechanization in the country. The Institute has the facilities to undertake R&D activities in the areas of farm mechanization, precision farming, conservation agriculture, irrigation and drainage engineering, ergonomics and safety in agriculture, energy management, agro- processing and food technology, soybean processing and utilization. The Institute farm (93 ha), workshop and library support research and development work of the institute. During January, the climate will be pleasant with some cold. Average maximum and minimum temperature range for the month of January shall be 10 and 25°C.

## Information on Winter School

Artificial Intelligence in Agriculture can be applied cross disciplinary and it can also bring a paradigm shift in how we see farming today. AI-powered solutions will not only enable farmers to do more with less, it will also improve quality and ensure faster go-to-market for crops. The AI system is used in agriculture for automatic data collection, analysis, decision making and controlling various tasks using different machine learning algorithms and mathematical models. AI can be used for real time monitoring of various soil and crop parameters by using IoT and then can be analyzed with accuracy to enable the farmers for addressing all the uncertain issues. This Winter School shall include techniques for sensing, processing and analysis of agricultural data using artificial intelligence, machine learning and other soft computing techniques.

## Objectives

The major objective of this course is to develop the competence of the scientists / researchers / subject matter specialists about the principles and basic concepts of electronic devices, artificial intelligence, machine learning, deep learning, algorithm development for analyzing images using MATLAB/Python and instrumentation and apprise the trainees about the applications of artificial intelligence in pre and post production agriculture.



## Subject Matter Covered

The training curriculum will largely be based on the training needs of the participants and include various aspects of sensors, instrumentation, micro controllers and artificial Intelligence. Some of the important areas are:

- Application of artificial intelligence in field of agriculture
- Deep learning for smart agriculture: Concepts, tools, applications, and opportunities
- Instrumentation, measurement and Decision Support System (DSS) for farm machinery management
- PLC and sensors interfacing for automation of agriculture
- Conceptual development of robotic machinery for agricultural applications, image processing tools and algorithms
- Image based sensing for fertilizer application
- Soft computing techniques and machine vision
- Hyperspectral imaging in agriculture

## Eligibility

- The training programme is open to Scientists/Subject Matter Specialists/Professionals of ICAR Institutes/CAU/SAUs/KVKs involved in research, development, training, testing and extension programmes.
- The applicant should be working in a position not below the rank of Scientist/Assistant Professor/Lecturer/Subject Matter Specialists or Equivalent.
- A maximum of 25 participants will be selected based on their qualification, experience and area of work.

## Boarding and Lodging

Free lodging and boarding will be provided to the participants as per the approved ICAR norms. The Institute has a well- furnished guest house with dining, recreation and medical facilities in the campus. Please be advised that accommodation in the guest house will not be available for the family members or guests of the participants.

## Travel

Participants will be paid travel fare to and fro through the shortest route from their respective institution to CIAE, Bhopal and back for journey by AC-II/III class train fare or bus as the case may be. TA to be paid on production of a certificate or tickets by the participant.

## How to Reach CIAE

Bhopal is well connected by rail and road. The Institute campus is situated on Berasia Road, 7 km from Bhopal railway station, and 8 km from the airport. Pre-paid auto-rickshaws and taxis can be availed at the railway station/bus stand to reach the Institute.

