

## Background and Objectives

The Division of Agricultural Physics, Indian Agricultural Research Institute, New Delhi is organizing Seventeenth Winter School on “**Remote Sensing Applications in Agriculture with Special Emphasis on Management of Crop Physical Environment**” sponsored by Department of Space, Govt. of India, Bangalore from Mar 23- April 16, 2010 for the teachers / research workers of State Agricultural Universities, ICAR Institutes and Govt. / Semi Govt. Organizations.

The objective of this Winter School is to expose the scientists/teachers/young research workers to the emerged frontier technology of Remote Sensing (RS), Geographic Information System (GIS), Global Positioning System (GPS) and demonstrate thematic applications of these technologies particularly in using Remote Sensing for Managing Crop Physical Environment.

## Curriculum

A series of lectures and practicals will delivered cover principles and applications of Remote Sensing, GIS and GPS. The course will cover fundamentals of optical, thermal, active and passive microwave and hyperspectral remote sensing, sensors and platforms, Spectral response of natural objects, BRDF, Digital image processing, Vegetation Indices, Radiative Transfer Models, Parameter Retrieval of crops, soil and atmosphere. GIS data structures, operations, querying and mapping. GPS principles, space, ground and user segment, Standalone and Differential modes. Crop Simulation models, Linking RS derived

parameters in simulation models for yield prediction, Use of these tools for managing physical environment of crop and also case studies related to use of RS, GIS & GPS in different fields of agriculture.

Structured Hands on training in Digital Image processing and GIS and their use for different applications using commercial softwares and crop simulation models. Field demonstrations of GPS, IR Thermometer, Spectroradiometer.

An educational tour to institutions concerning remote sensing viz. Indian Institute of Remote Sensing / RRSSC / ISRO Centre, will be arranged.

## Faculty

Whereas, the majority of the faculty is in-house, drawn from the Division of Agricultural Physics and other Divisions of IARI, for delivering lectures and conducting practicals, Guest faculty comprising of experts from ISRO HQ, SAC, NRSA, RRSSCs, IIRS, IIT, JNU, DST, IMD and ICAR Institutes will also deliver lectures on their specific area of specialization and present thematic case studies.

## Facilities

The Division has separate RS & GIS laboratory equipped with State-of-the-Art HP Workstations, A0 Digitizer, Color & B/W Laser Printers and Scanner. The workstations are having multiple licenses of Digital Image Processing Software (ENVI, EASI/PACE, GEOMATICA, ERDAS-Imagine and IDRISI) and GIS software (ARC-View, Arc/Info, ARCGIS SPANS/ GEOMATICA, ARCPAD). The lab is also equipped with other computer

peripherals, soft wares (Surfer, Didger etc), utility software and a dedicated high speed internet connection. For conducting field experimentations, handheld GPS receiver, quantum sensor, canopy analyzer, infrared thermometer and Ground truth Spectroradiometer (350-2500nm), integrating sphere are also available. The division has also recently developed Hyperspectral Remote Sensing Laboratory.

## Eligibility

Teachers, Scientist, Research Workers of State Agricultural Universities, ICAR Institutes or Govt. / Semi Govt. Institutes are eligible for participation. The applicants should possess Masters or PhD degree in any branch of Agriculture or allied fields. **Working knowledge of computers is mandatory** as the course involves extensive use of computers for hands-on training. The applicant should be less than 45 years of age as on 1<sup>st</sup> March, 2010. The total number of participants shall be limited to a maximum of 25.

## Financial Support

It is preferred that all the selected participants be provided TA /DA by their parent Institute. However, outstation selected participants shall be provided at most AC III tier train or bus fare by shortest route and free moderate lodging and boarding as per ICAR norms at IARI Guest House / Trainee's Hostel. No registration fee will be charged for the course. The financial support for the Winter School is provided by Department of Space, Govt. of India under National Natural Management System (NNRMS).

## How to apply

The application for participation may be sent in prescribed proforma, duly forwarded by the competitive authority of the Institute / University where the candidate is employed. Applicants may send an Advance copy of their application but their selection will be subject to receiving their application along with recommendation from their employer. Completed applications in all respect should be sent to the Course Coordinator before **March 08, 2010** at the following address:

Dr. Ravender Singh / Dr. Rabi N. Sahoo  
Head & Course Director Course Coordinator

Division of Agricultural Physics,  
Indian Agricultural Research Institute,  
Pusa Campus, New Delhi – 110012

Phone: 011- 25841178, 25848853, 25843014 (O)  
Fax: 011-2584 2321, 2584 3014 (O)  
Email: [winterschool.iari@gmail.com](mailto:winterschool.iari@gmail.com)

Website: <http://www.iari.res.in>

## Important Dates

Announcement : February 15, 2010

Last date for receiving

application proforma : March 08, 2010

Intimation of selection : March 09, 2010

Commencement of course : March 23, 2010

## Application Proforma for Participation in 17<sup>th</sup> Winter School on Remote Sensing (March 23-April 16, 2010)

1. Full Name (block letters) :
2. Designation :
3. Basic Pay and Scale :
4. Date of Birth :
5. Sex (Male/Female) :
6. Affiliation :
7. Address for Correspondence :  
(including Phone, Fax & E-mail\*) Email must for  
intimation of selection
8. Educational Qualifications :

Degree	Major Subjects	Year	Division / Class	University / Institute
Bachelor				
Master				
PhD				
Other				

9. Professional Experience :
10. Trainings Attended :
11. Computer Proficiency :
12. Current area of Research / Project :
13. Does your current Research / Project needs Remote Sensing / GIS :
14. Is your organization likely to provide TA/DA :
15. Would you need guest house accommodation at IARI :

Signature of Applicant

Date:  
Place:

16. Certificate and Recommendation :  
by the forwarding authority

It is certified that the information provided above is verified from the records and found correct. The applicant is recommended & nominated for attending the 17<sup>th</sup> Winter School on Remote Sensing at IARI, New Delhi.

Signature with seal  
of the Authority

Date:  
Place:

## Announcement

SEVENTEENTH WINTER SCHOOL

ON

## REMOTE SENSING APPLICATIONS IN AGRICULTURE

With Special Emphasis on

## MANAGEMENT OF CROP PHYSICAL ENVIRONMENT

**March 23 – April 16, 2010**  
**New Delhi, India**

ORGANIZED BY



*DIVISION OF AGRICULTURAL PHYSICS,  
INDIAN AGRICULTURAL RESEARCH INSTITUTE,  
NEW DELHI – 110 012, INDIA*

SPONSORED BY



**DEPARTMENT OF SPACE,  
GOVERNMENT OF INDIA**