



RAJA SHRIPATRAO BHAGWANTRAO MAHAVIDYALAYA, AUNDH, SATARA

Indian Institute of Remote Sensing, ISRO, Dehradun
Department of Space, Government of India

SUMMARY REPORT OF PROGRAM

Date: 16/06/2018

To,
The Principal,
R.S.B. Mahavidyalaya, Aundh
Tal. Khatav, Dist. Satara

I am submitting summary report of Outreach Programme. Please accept it.

1. Name of Programme: RS & GIS applications in Water Resources

2. Duration: 16.4.2018 to 27.04.2018

Total Days: 43

3. Number of enrolled students: 01

4. Name of Coordinator: Dr. Telore Namdev Vasant

5. Name of Resource Persons: i) Dr. S.P. Aggarwal ii) Dr. Poonam S Tiwari
iii) Dr. Vaibhav Garg

6. Objectives of the Programme:

- i. To know concepts of Remote Sensing.
- ii. To know concepts of GIS.
- iii. To study applications of RS – GIS in water resources.

7. Outcome of the Programme:

- i. Participants become aware of basic concepts of Remote Sensing.
- ii. Participants become aware of GIS.
- iii. Participants become aware of applications of RS – GIS in water resources.

Centre Coordinator

(Dr. Namdev V. Telore)

Dr. Namdev V. Telore

Co-ordinator

IIRIG Outreach Programme, Dehradun

Centre: R.S.B. Mahavidyalaya, Aundh, Dist. Satara

Principal

PRINCIPAL

Raja Shripatrao Bhagwantrao
Mahavidyalaya, Aundh (Satara)

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अंतरिक्ष विभाग
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Government of India
Department of Space

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Dr. A. Senthil Kumar
Director

No.: IIRS/GIT&DL/EDUSAT/2018/31
Date: March 23, 2018

Sub: Announcement of 31st IIRS Outreach Program on "RS & GIS applications in Water Resources" commencing from April 16-27, 2018.

Dear Sir/ Madam,

पृथ्वी अवलोकन (ई ओ) भारतीय अन्तरिक्ष अनुसंधान संस्थान का एक महत्वपूर्ण कार्यक्रम है जिसके अंतर्गत पिछले पचास वर्षों में कई उपग्रहों को अन्तरिक्ष में प्रक्षेपण किया गया है। इन उपग्रहों से प्राप्त आकड़ों का उपयोग प्राकृतिक संसाधन व आपदा प्रबंधन में किया जाता है। भारतीय सुदूर संवेदन संस्थान (भा.सु.सं.सं.) भूस्थानिक प्रौद्योगिकी के अंतर्गत शिक्षण, प्रशिक्षण तथा क्षमता संवर्धन को समर्पित एक महत्वपूर्ण संस्थान है। इस संस्थान द्वारा अब तक 30 उपग्रह एवं इंटरनेट आधारित आउटरीच पाठ्यक्रम संचालित किए जा चुके हैं। इन पाठ्यक्रमों से लगभग 730 भारतीय विश्वविद्यालयों/ संस्थानों के करीब 62,000 से अधिक प्रतिभागी लाभान्वित हुए हैं। इस कार्यक्रम को आगे बढ़ाते हुए हम सहर्ष 31^व आई.आई.आर.एस. आउटरीच कार्यक्रम को प्रारंभ करने की घोषणा करते हैं। 16 अप्रैल, 2018 से प्रारंभ होने वाला यह कार्यक्रम "सुदूर संवेदन, भौगोलिक सूचना प्रणाली का जल संसाधन प्रबंधन में अनुप्रयोग" पर आधारित है। यह कार्यक्रम कार्यरत पेशेवर तथा छात्रों हेतु लक्षित है। यह कार्यक्रम प्रतिभागियों को अपने कार्यस्थल पर रहते हुये ज्ञान को समृद्ध करने का एक अनूठा अवसर प्रदान करेगा।

The Indian Space Research Organisation (ISRO) has a vibrant Earth Observation (EO) programme since last 50 years with launch of several satellite missions. The Indian Remote Sensing Satellite (IRS) series of satellites provide space based information for monitoring and management of natural resources and Disaster Management Support. The Indian Institute of Remote Sensing (IIRS) is a premier Institute under ISRO engaged in training, education and capacity building on use of geospatial technology for natural resources monitoring and disaster management since last five decades. The institute has so far conducted 30 Satellite and Internet based Outreach Programmes, benefitting more than 62000 participants from 730 Indian universities/ institutions/user Departments/user ministries in India. To promote the use of geospatial technology, IIRS announces the 31st IIRS Outreach programme on "RS & GIS applications in Water Resources" commencing on April 16, 2018. The course is targeted to working professionals and students and will provide a unique opportunity to the learners to enhance their knowledge by attending the course at their respective working places.

जल के विभिन्न संसाधन पृथ्वी पर जीवन हेतु अत्यंत महत्वपूर्ण हैं और मानव जाति द्वारा किए जाने वाले विकास कार्यों के प्रतिकूल प्रभावों के प्रति अति संवेदनशील हैं। हालांकि भारतवर्ष में जल प्रचुर मात्रा में उपलब्ध है, परंतु इसके वितरण में स्थानिक एवं अस्थायी विविधताएँ हैं। अतः जल संसाधन प्रबंधन हेतु सभी प्रकार के जल संसाधनों (हाईड्रोलॉजिकल चक्र के घटक) की लगातार निगरानी आवश्यक है। भूस्थानिक प्रौद्योगिकी हाईड्रोलॉजिकल चक्र के गतिशील घटकों जैसे वर्षा, मृदा नमी, अपवाह, बाष्पीकरण, बर्फ और पानी संबंधित आपदा के गुणात्मक और मात्रात्मक मानचित्रण एवं निगरानी हेतु अति उपयुक्त हैं। यह पाठ्यक्रम जल संसाधन प्रबंधन में हाईड्रोलॉजिकल चक्र के गतिशील घटकों के मात्रात्मक मूल्यांकन एवं निगरानी हेतु उपग्रह और स्थलीय आधारित सुदूर संवेदन एवं भौगोलिक सूचना प्रणाली प्रौद्योगिकी में नवीनतम प्रगति का एक सिंहावलोकन प्रदान करेगा। जल संसाधन प्रबंधन के संदर्भ में इन आधुनिक तकनीकों की उपयोगिता को सीखने हेतु इच्छुक पेशेवर/शोधकर्ता/एवं छात्रों के लिए यह पाठ्यक्रम अत्यधिक रुचिकर होगा।

All the sources of water are important for survival of life on this planet and are vulnerable to adverse impacts of anthropogenic activities. Though abundant water is available in our country, however there is large spatial, temporal variations in its distribution. Hence, continuous monitoring of all the sources of water (components of Hydrological cycle) becomes necessary for Water Resources Management. Geospatial technologies are particularly suited for qualitative and quantitative; mapping and monitoring of dynamic components of hydrological cycle like rainfall, soil moisture, runoff, evapotranspiration, snow cover, etc. along with water related disasters. This course will provide an overview of the latest advances in satellite and terrestrial based Remote Sensing and GIS technologies for quantitative assessment and monitoring of components of hydrological cycle and their use in Water Resources Management. The course is therefore

भारतीय अंतरिक्ष अनुसंधान संगठन ISRO Indian Space Research Organisation

Dr. Namdev V. Telore
Co-ordinator

IIRS Outreach Programme, Dehradun

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of special interest for the professionals, researchers and students interested in learning utility of these modern technologies in the context Water Resources Management.

अपने कार्यस्थल से प्रतिदिन डेढ़ घंटा समर्पित करके भूस्तरीय प्रौद्योगिक सीखने का यह एक अनोखा अवसर है। इस पाठ्यक्रम में निशुल्क भाग लिया जा सकता है। ए-व्यू सॉफ्टवेयर (www.aview.in) का प्रयोग करके इंटरनेट के जरिए कार्यक्रम स्वतंत्र रूप से उपलब्ध हो सकता है। यह कार्यक्रम एनएनआरएमएस, अंतरिक्ष विभाग, और क्षमता निर्माण के लिए भारत सरकार द्वारा प्रायोजित है। पाठ्यक्रम पूर्ण करने पर प्रतिभागियों को आईआईआरएस, इसरो से प्रमाण पत्र के साथ सम्मानित किया जाएगा। यह कार्यक्रम 16:00-17:30 बजे के दौरान प्रतिदिन प्रसारित किया जाएगा। इस कोर्स के घोषणा बोशर की एक प्रति आपके सहयोगियों और आपके विश्वविद्यालय / संस्थान / संगठन में परिसंचरण के लिए इसके साथ भेजी जा रही है। यह पाठ्यक्रम यूजी और पीजी छात्रों / शोधकर्ताओं / वैज्ञानिक / तकनीकी कर्मचारियों और इच्छुक व्यक्तियों के लिए उपलब्ध है। इसके व्यापक प्रचार और आपके विश्वविद्यालय / संस्थान / संगठन से अधिकतम भागीदारी के लिए आपके समर्थन की आवश्यकता है।

It is a unique opportunity for participants to learn directly from their place of working by devoting an hour and a half each day. The course can be attended with **no cost** to the participants. Programme can be received live through internet by utilizing A-VIEW software (www.aview.in) available freely or using live streaming from YouTube. This Programme is sponsored by NNRMS, Department of space, and Government of India for capacity building. The participants who successfully complete the course will be awarded a certificate from IIRS, ISRO. The programme is scheduled during 1600 Hrs.-1730 Hrs. every day for a week. A copy of the announcement brochure of this course is forwarded herewith for your kind perusal and for circulation in your university/institute/Organisation. The course is open to UG & PG students/researchers/scientific/technical staff and interested individuals. We need your support for wide publicity and maximum participation from your university/ institute/Organisation.

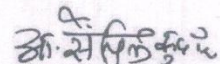
यदि आपको कार्यक्रम के बारे में और जानकारी की आवश्यकता है, तो कृपया संपर्क करने में संकोच न करें

- डॉ एस. पी. अग्रवाल, कोर्स डायरेक्टर, 31 वें आईआईआईआरएस आउटरीच प्रोग्राम
Ph.: 2524162 (Office), M: +91 9897677863 or email: spa@iirs.gov.in
- डॉ वैभव गर्ग, कोर्स कोर्डिनेटर, 31 वें आईआईआईआरएस आउटरीच प्रोग्राम
Ph.: 2524165 (Office), M: +91 9808939828 or email: vaibhav@iirs.gov.in
- डॉ हरिश कर्नाटक, हेड, जिओब सर्विसेज, आईटी और डिस्टेंस लर्निंग डिपार्टमेंट
Ph.: 0135-2524332 (Office), M: +91 9456565523 or email: harish@iirs.gov.in
- डॉ पूनम एस तिवारी, कार्यक्रम समन्वयक, आईआईआरएस आउटरीच प्रोग्राम
Ph. 0135-2524115 (Office), M: +91 9410924417 or email- poonam@iirs.gov.in
- एडीयूसैट स्टूडियो / कंट्रोल रूम [श्री जनार्दन विश्वकर्मा और श्री अशोक घिल्लियाल]
Ph.: 0135-2524130, email: dlp@iirs.gov.in


In case you need any further information about the programme, please feel free to contact:

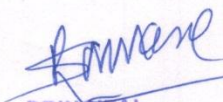
- **Dr. S.P. Aggarwal**, Course Director, 31st IIRS Outreach Programme
Ph: 0135-2524162 (Office), M: +91 9897677863 or email: vaibhav@iirs.gov.in
- **Dr. Vaibhav Garg**, Course Coordinator, 31st IIRS Outreach Programme
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- **Dr. Harish Karnatak**, Head, Geoweb Services, IT & Distance Learning Department
Ph.: 0135-2524332 (Office), M: +91 9456565523 or email: harish@iirs.gov.in
- **Dr. Poonam S. Tiwari**, Programme Coordinator, IIRS Outreach Programme
Ph. 0135-2524115 (Office), M: +91 9410924417 or email- poonam@iirs.gov.in
- **EDUSAT Studio/Control Room** [Shri Janardan Vishwakarma & Shri Ashok Ghildiyal]
Ph.: 0135-2524130, email: dlp@iirs.gov.in

You may also visit IIRS website <http://www.iirs.gov.in/Edusat-News> for further details.
With regards and best wishes,


(A. Senthil Kumar)

Encl: Course Schedule


Dr. Namdev V. Telore
Co-ordinator
IIRS Outreach Programme, Aundh, Satara
Centre: R.S.B. Mahavidyalaya, Aundh, Satara


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IIRS Outreach Programme

The IIRS outreach programme, which started in 2007 with 12 universities/ institutions has now grown substantially. Currently, about 730 universities/ institutions spread across India are networked with IIRS. The beneficiaries of the programme may include:

- Water Resource Professionals
- State Water Resources / Irrigation Departments / Training Academies
- Central/State/Private Universities & Academic Institutions
- Central & State Government Departments
- Research Institutes
- Geospatial Industries
- NGOs

Feedback Mechanism

IIRS has conducted workshops and sessions during IIRS User Interaction Meet to take feedback from participating institutions to improve the quality of future courses.



Feedback session during IIRS User Interaction Meet (IUM)-2018

Awards

IIRS has received national awards for excellence in training for outreach and e-learning programme during 1st National Symposium on Excellence in Training conducted during April 11-12, 2015 in New Delhi by Department of Personnel & Training (DoPT), Govt. of India in collaboration with United Nations Development Programme (UNDP).



Dr. Namdev V. Islore
Coordinator

IIRS Outreach Programme, Dehradun
R.S.B. Mahavidyalaya, Aundh (Satara)

About IIRS

Indian Institute of Remote Sensing (IIRS) under Indian Space Research Organisation (ISRO), Department of Space, Govt. of India is a premier Training and Educational Institute set up for developing trained professionals in the field of Remote Sensing, Geoinformatics and GNSS Technology for Natural Resources, Environmental and Disaster Management. Formerly known as Indian Photo-interpretation Institute (IPI), founded in 1966, the institute boasts to be the first of its kind in entire South-East Asia. While nurturing its primary endeavour to build capacity among the user community by training mid-career professionals, the Institute has enhanced its capability and evolved many training and education programmes that are tuned to meet the requirements of various target groups, ranging from fresh graduates to policy makers including academia.

IIRS also conducts e-learning programme on Remote Sensing and Geo-information Science (<http://elearning.iirs.gov.in>).

Contact Details

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Course Coordinator
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IIRS DLP Team

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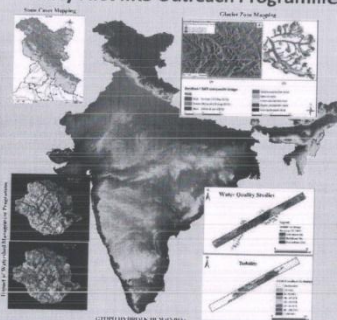
Dr. Poonam S Tiwari
Tel: 0135-2524334; email: poonam@iirs.gov.in

Mr. Janardan Vishwakarma
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Mr. Ashok Ghildiyal
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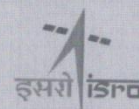
Indian Institute of Remote Sensing,
Indian Space Research Organisation
Department of Space, Govt. of India,
4-Kalidas Road, Dehradun
Email: dip@iirs.gov.in

Thirty First IIRS Outreach Programme



Remote Sensing and GIS Applications in Water Resource Management

April 16-27, 2018



Organised by

Indian Institute of Remote Sensing
Indian Space Research Organisation
Department of Space, Govt. of India
Dehradun
www.iirs.gov.in

PRINCIPAL

Raja Shripatrao Bhagwanrao
Mahavidyalaya, Aundh (Satara)

About the Course

About 71% of earth's surface is covered with water. Around 2.5% out of total water available on the earth is stored in the form of fresh water as ice caps, glaciers, Permanent Snow, Rivers and Lakes, Ground Water, Soil moisture, Atmospheric Water. All these sources of fresh water are important for survival of life on this planet and are vulnerable to adverse impacts of anthropogenic activities. Though abundant water is available in our country, however there is large spatial, temporal variations in its distribution. Hence, continuous monitoring of all the sources of water (components of Hydrological cycle) becomes necessary for Water Resources Management. Geospatial technologies are particularly suited for qualitative and quantitative mapping and monitoring of dynamic components of hydrological cycle like rainfall, soil moisture, runoff, evapotranspiration, snow cover, etc. along with water related disasters. This course will provide an overview on the latest advances in satellite and terrestrial based remote sensing and GIS technologies for quantitative assessment and monitoring of components of hydrological cycle and their applications in Water Resources Management. The course is therefore of special interest for the professionals, researchers and students interested in learning utility of these modern technologies in the context Water Resources Management.

Curriculum

- Overview of RS&GIS applications in Water Resources
- Rainfall data analysis and satellite based rainfall retrieval
- Surface water body and snow cover area mapping
- DEM applications in water resources
- Irrigation water management
- Watershed management
- Hydrological modelling in geospatial environment
- Flood mapping, monitoring and modelling
- Impact of climate change on water resources
- Ground Water Prospects Zonation

Dr. Namdev V. Islore
Coordinator

IIRS Outreach Programme, Dehradun
R.S.B. Mahavidyalaya, Aundh (Satara)

Target Participants

- The course is designed for professionals from Central / State Govt. / Private Organizations / NGO engaged in water resources management and planning, regional and national water resources projects; students and researchers aligned to research in water resources.
- The course participants have to be duly sponsored by their university / institution and application should be forwarded through coordinators from respective Organisations / centres. Users attending programmes under CEC-UGC / CIET / other networks can also participate. Institutions on high speed National Knowledge Network (NKN) can also participate using A-VIEW software.

Course Study Material

Course study materials like lecture slides, video recorded lectures, open source software & handouts of demonstrations, etc. will be made available through IIRS ftp link. Video lectures will also be uploaded on YouTube Channel:
(<http://www.youtube.com/user/edusat2004>).

Course Fee

There is no course fee.

Course Registration

- Course updates and other details will be available on URL- <http://www.iirs.gov.in/Edusat-News/>
- To participate in this programme the interested organizations/ universities/ departments/ Institutes has to identify a coordinator at their end. The identified coordinator will register online his/her Institute as nodal center in IIRS website.
- All the participants has to register online through registration page by selecting his/her organization as nodal center.



PRINCIPAL

Raja Shripatrao Bhagwanrao
Mahavidyalaya, Aundh (Satara)

Course Funding & Technical Support

The programme is sponsored by National Natural Resources Management System – Standing Committee on Training and Education (SC-T), Indian Space Research Organisation, Department of Space, Government of India and is conducted with due technical support from Amrita Virtual Interactive E-learning World (A-VIEW).

Programme Reception

Programme can be received through Internet connectivity of 2Mbps or better. Following hardware and software set-up is required at user end:

Hardware Requirements:

- High-end Computer/Laptop (Windows OS);
- Good quality web camera;
- Headphone with Microphone;
- Speakers;
- Large Display Screen (Projector or TV).

Software and Internet Requirements:

Desktop based: A-VIEW software (free to download from www.aview.in or IIRS ftp link: <ftp://ftp.iirs.gov.in>)
Online live access through <http://live.iirs.gov.in> with free registration.

Connectivity & Other configurations:

NKN or any other high speed internet facility (preferably without firewall, with minimum of 2 Mbps bandwidth)
Network requirements: Port 80 and RTMP (port 1935) protocol should be unblocked from user's computer and Firewall.

Note: Institutions/ universities have to bear total expenses for establishment of the classroom facility

Award of Certificate

Working Professionals: Based on 70% attendance and submission of assignments.

Students: Based on 70% attendance and an online examination.

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https://edclasscms.iirs.gov.in/past_course.php#

INDIAN INSTITUTE OF REMOTE SENSING
Indian Space Research Organisation
Department of Space, Govt. of India

PROGRAMME OVERVIEW REGISTER FOR PROGRAMME NCERT COURSES FAQ COURSE CALENDAR E-CLASS CONTACT LOGOUT

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ELECTRONIC COLLABORATIVE LEARNING
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31- IIRS Outreach Programme on RS & GIS applications in Water Resources

View Student attendance attendance status Study Material Download Certificates

| S.No. | RegNo. | Name | DOB | Mobile No. | Email | ID_Proof | Date | Status |
|-------|-------------|-------------------|-----------|------------|------------------------|----------|---------------------|----------|
| 1 | 20183141487 | Shaktisagar Dhole | 1-30-1988 | 9822515601 | midas.shakti@gmail.com | View | 2018-04-12 01:02:25 | Approved |

Dr. Namdev V. Telore
Co-ordinator
IIRS Outreach Programme, Dehradun
Centre: R.S.B. Mahavidyalaya, Aundh, Dist. Satara

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31- IIRS Outreach Programme on RS & GIS applications in Water Resources

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Dr. Namdev V. Telore
Co-ordinator
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31st IIRS Outreach Programme
on
“RS & GIS applications in Water Resources”
April 16-27, 2018

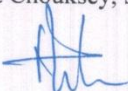



REVISED SCHEDULE

| Date | Lecture | Title | Faculty |
|----------------|---------|---|----------------|
| April 16, 2018 | L-1 | Overview of RS&GIS applications in Water Resources | SPA |
| April 17, 2018 | L-2 | DEM applications in water resources | AC |
| April 18, 2018 | L-3 | Surface water body and snow cover area mapping | VG |
| April 19, 2018 | L-4 | Rainfall data analysis and satellite based rainfall retrieval | PKT |
| April 20, 2018 | L-4 | Impact of climate change on water resources | SPA |
| April 23, 2018 | L-6 | Watershed management | BRN |
| April 24, 2018 | L-7 | Hydrological modelling in geospatial environment | VG |
| April 25, 2018 | L-8 | Flood mapping, monitoring and modelling | PKT |
| April 26, 2018 | L-9 | Irrigation water management | BRN |
| April 27, 2018 | L-10 | Ground Water Prospects Zonation | SKS |
| April 27, 2018 | | Panel Discussion | Course Faculty |

Faculty:

- SKS: Dr. S.K. Srivastav, Dean (A) & GD, GT&OPG
 SPA: Dr. S. P. Aggarwal, Head, WRD, IIRS
 PKT: Dr. Praveen Thakur, Sci./Eng. 'SF', WRD, IIRS
 BRN: Dr. Bhaskar R. Nikam, Sci./Eng. 'SE', WRD, IIRS
 VG: Dr. Vaibhav Garg, Sci./Eng. 'SE', WRD, IIRS
 AC: Mr. Arpit Chouksey, Sci./Eng. 'SD', WRD, IIRS


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सत्यमेव जयते

भारतीय सुदूर संवेदन संस्थान/ INDIAN INSTITUTE OF REMOTE SENSING
भारतीय अंतरिक्ष अनुसंधान संगठन/ INDIAN SPACE RESEARCH ORGANISATION
अंतरिक्ष विभाग, भारत सरकार/ DEPARTMENT OF SPACE, GOVERNMENT OF INDIA



बहिः परिसर संपर्क/ विस्तार कार्यक्रम प्रमाण पत्र
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यह प्रमाणित किया जाता है कि राजा श्रीपतराव भगवंतराव महाविद्यालय, औंध, महाराष्ट्र ने भारतीय सुदूर संवेदन संस्थान, इसरो देहरादून द्वारा संचालित ऑनलाइन प्रशिक्षण पाठ्यक्रम "सुदूर संवेदन, भौगोलिक सूचना प्रणाली का जल संसाधन प्रबंधन में अनुप्रयोग" में भाग लिया। इस ऑनलाइन पाठ्यक्रम का संचालन दिनांक 16-04-2018 से 27-04-2018 तक किया गया।

This is to certify that **Raja Shripatrao Bhagwantrao Mahavidyalaya, Aundh, Maharashtra**, has participated in online training programme conducted by Indian Institute of Remote Sensing, ISRO Dehradun on "**RS & GIS applications in Water Resources**". This online programme was conducted during April 16, 2018 to April 27, 2018.

दिनांक/ Date: 26-07-2018
देहरादून/ Dehradun

Dr. Namdev V. Telore
Co-ordinator

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Centre: P. S. B. Mahavidyalaya, Aundh, Dist. Satara

प्रमुख,
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