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**Revised on: September 06, 2022**

Govt. of India  
Department Space  
Indian Space Research Organization  
Indian Institute of Remote Sensing

**One Hundred Three IIRS Outreach Programme**  
On  
Basic of RS, GIS & GNSS

**Tentative Course Schedule**

S. No.	Course Name	Module Name	From	To
1.	Basic of RS, GIS & GNSS	Complete Basic Course	22-08-2022	25-11-2022
2.	Remote Sensing & Digital Image Analysis	Module-1	22-08-2022	16/09/2022
3.	Global Navigation Satellite System	Module-2	19-09-2022	30-09-2022
4.	Geographical Information System Module	Module-3	03-10-2022	28-10-2022
5.	Basics of Geocomputation and Geoweb Services	Module- 4	31-10-2022	04-11-2022
6.	RS & GIS Applications	Module-5	14-11-2022	25-11-2022

**Course Name:** Remote Sensing & Digital Image Analysis  
**Course Coordinator:** Mrs. Minakshi Kumar

**Duration of the Course: 22 August-16 September 2022**

Date	Day	Time	Topic	Speaker
22/08/2022	Monday	1600-1730 hrs	Basic Principles of Remote Sensing	Dr. Manu Mehta
23/08/2022	Tuesday	1600-1730 hrs	Earth Observation Sensors and Platforms	Mr. Vinay Kumar
24/08/2022	Wednesday	1600-1730 hrs	BREAK	
25/08/2022	Thursday	1600-1730 hrs	Spectral Signatures of Different Land cover Features and Visual Image interpretation	Dr. Hina Pande
26/08/2022	Friday	Offline	RS and Image Interpretation Practical	
<b>27/08/2022</b>			<b>SAT</b>	
<b>28/08/2022</b>			<b>SUN</b>	
29/08/2022	Monday	1600-1730 hrs	Digital Image Processing: Basic Concepts Rectification and Registration	Ms. Minakshi Kumar
30/08/2022	Tuesday	1600-1730 hrs	Image Enhancement techniques	Dr. Poonam S. Tiwari
<b>31/08/2022</b>	Wednesday		<b>Vinayaka Chaturthi /Ganesh Chaturthi</b>	
01/09/2022	Thursday	1600-1730 hrs	Image Classification Techniques	Dr. Anil Kumar
02/09/2022	Friday	1600-1730 hrs	Thermal Remote Sensing	Dr. Shashi Kumar
<b>03/09/2022</b>			<b>SAT</b>	
<b>04/09/2022</b>			<b>SUN</b>	
05/09/2022	Monday	1600-1730 hrs	Accuracy Assessment and Digital Change Detection	Ms. Minakshi Kumar
06/09/2022	Tuesday	1600-1730 hrs	Image Processing Hands-on Demo using QGIS	Mr. Prasun Kumar Gupta
07/09/2022	Wednesday	Offline	Image Processing QGIS- hand-n Self Practice	
08/09/2022	Thursday	1600-1730 hrs	BREAK	
09/09/2022	Friday	1600-1730 hrs	Hyperspectral Remote Sensing	Mr. Vinay Kumar
10/09/2022			<b>SAT</b>	
11/09/2022			<b>SUN</b>	
12/09/2022	Monday	1600-1730 hrs	Open Source Data and International Geoportals for Satellite data download	Dr. Harish Karnatak
13/09/2022	Tuesday	1600-1730 hrs	Basics of Microwave Remote Sensing	Dr. Shashi Kumar
14/09/2022	Wednesday	1600-1730 hrs	Basics of SAR Data Processing	Mr.Ashish Joshi
15/09/2022	Thursday	1600-1730 hrs	BREAK	
16/09/2022	Friday	1600-1730 hrs	Basics of UAV Remote Sensing	Mrs. Shefali Agrawal

**Module- 2: Global Navigation Satellite System**  
**Module/ Course Coordinator: Dr. Ashutosh Bhardwaj**

**Course Duration: 19 September-30 September 2022**

Date	Day	Time	Topic	Speaker
19/09/2022	Monday	1600-1700 hrs	Satellite Navigation*- I	Dr. Suresh Kannaujiya
		1700-1730 hrs	Interactive Session	
20/09/2022	Tuesday	1600-1700 hrs	Satellite Navigation*- II	Dr. Suresh Kannaujiya
		1700-1730 hrs	Interactive Session	
21/09/2022	Wednesday	1600-1700 hrs	GPS receivers, processing methods, errors and accuracy	Dr. Ashutosh Bhardwaj
		1700-1730 hrs	Interactive Session	
22/09/2022	Thursday	1600-1700 hrs	Satellites based Augmentation systems & GPS Aided and GEO Augmented Navigation (GAGAN)	Dr. Ashutosh Bhardwaj
		1700-1730 hrs	Interactive Session	
23/09/2022	Friday	1600-1700 hrs	GPS signal characteristics, Data formats (broadcast, precise ephemeris)	Dr. Ashutosh Bhardwaj & Shri Ashish Joshi
		1700-1730 hrs	Interactive Session	
26/09/2022	Monday	1600-1700 hrs	Indian Regional Navigation Satellite System (IRNSS)	Dr. Ashutosh Bhardwaj & Shri Kamal Pandey
		1700-1730 hrs	Interactive Session	
27/09/2022	Tuesday	1600-1700 hrs	DGPS demonstration (Pre-recorded followed by live query session)	Offline
		1700-1730 hrs	Interactive Session	Dr. Ashutosh Bhardwaj
28/09/2022	Wednesday			
29/09/2022	Thursday	1600-1700 hrs	Advance GNSS processing	Shri Suresh Kannaujiya
		1700-1730 hrs	Interactive Session	
30/09/2022	Friday		<b>Panel Discussion</b>	

\*Development of Satellite Navigation Technology, TRANSIT, TSKLON, GNSS: GPS, GLONASS, Galileo and Beidou, Principle of GNSS, Segments, Applications.

**Module- 3: Geographical Information System**  
**Module/ Course Module/Course Coordinator: Shri. Prabakar Alok Verma**

**03 October -28 October 2022**

Date	Day	Time	Topic	
3/10/2022	Monday	1600-1730 hrs	Introduction to GIS	Dr. Sameer Saran
4/10/2022	Tuesday	1600-1730 hrs	Geographic Phenomena, Concepts and examples	Shri Prasun Kumar Gupta
5/10/2022	Wednesday	HOLIDAY (Dussehra)		
6/10/2022	Thursday	1600-1730 hrs	GIS Data Models (Spatial and Non spatial)	Shri Ashutosh Kumar Jha
7/10/2022	Friday	1600-1730 hrs	Data Inputting and Editing in GIS	Shri K. Shiva Reddy
8/10/2022	Saturday			
9/10/2022	Sunday			
10/10/2022	Monday	1600-1730 hrs	Spatial Analysis – Introduction	Shri Prabhakar Alok Verma
11/10/2022	Tuesday	1600-1730 hrs		
12/10/2022	Wednesday	1600-1730 hrs	Map Projection Concepts & Use in RS & GIS	Dr. Ashutosh Srivastav
13/10/2022	Thursday	1600-1730 hrs	Spatial Analysis (Vector & Raster)	
14/10/2022	Friday	1600-1730 hrs	Open Source Software Technology & Tools	Shri Prasun Kumar Gupta
15/10/2022	Saturday			
16/10/2022	Sunday			
17/10/2022	Monday	1600-1730 hrs	Overview of Spatial Data Quality	
18/10/2022	Tuesday	1600-1730 hrs	Uncertainty in GIS and Error Propagation	Shri Prabhakar Alok Verma
19/10/2022	Wednesday	1600-1730 hrs	Map visualisation	
20/10/2022	Thursday	1600-1730 hrs	Demo visualisation	
21/10/2022	Friday	1600-1730 hrs	Network Analysis	
22/10/2022	Saturday			
23/10/2022	Sunday			
24/10/2022	Monday	HOLIDAY (Diwali)		
25/10/2022	Tuesday	1600-1730 hrs	Overview of Machine Learning for GIS	Shri Prabhakar Alok Verma
26/10/2022	Wednesday	1600-1730 hrs	Overview of Big Data Analytics	Shri Kapil Oberai
27/10/2022	Thursday	1600-1730 hrs	Recent Trends in Geoinformatics	Dr. Sameer Saran
28/10/2022	Friday			

**Module Name-** Basics of Geocomputation and Geoweb Services  
**Module/ Course Module/Course Coordinator:** Shri. Kamal Pandey  
**Course Duration:** 31 October -04 November 2022

<b>Date</b>	<b>Day</b>	<b>Topic</b>	<b>Speaker</b>
October 31, 2022	Monday	Introduction to Geocomputation, Online GIS and Geo-web services  Interactive Session	Dr. Harish Karnatak
November 01, 2022	Tuesday	Open Geodata Repositories & ISRO Geoweb Services for thematic applications  Interactive Session	Mr. Kamal Pandey
November 02, 2022	Wednesday	Programming concepts for Geo-computation - Introduction to Python and R  Interactive Session	Mr. Ravi Bhandari
November 03, 2022	Thursday	Overview of WebGIS and application development  Interactive Session	Mr. Kamal Pandey
November 04, 2022	Friday	Demonstration on Introduction to Cloud based geospatial data processing  Interactive Session	Mr. Ravi Bhandari

**Module/Course Name-** RS & GIS Applications  
**Module/ Course Coordinator:** Shri C.M. Bhatt  
**Course Duration:** 11 November- 25 November 2022

Date	Day	Time	Topic	Speaker
11/11/2022	Friday	1600-1730 hrs	Applications of Remote Sensing & other Geospatial Technologies in Natural Resources Management, Development & Governance	
14/11/2022	Monday	1600-1730 hrs	Remote Sensing and GIS applications for Crop Resource Assessment and Monitoring	Dr. N.R. Patel
15/11/2022	Tuesday	1600-1730 hrs	RS & GIS for Coastal Zone Management	Dr. D. Mitra
16/11/2022	Wednesday	1600-1730 hrs	Remote Sensing Applications for Geological studies	Dr. R.S. Chatterjee
17/11/2022	Thursday	1600-1730 hrs	RS & GIS Application in Urban & Regional Planning	Shri. Pramod Kumar
18/11/2022	Friday	1600-1730 hrs	Remote Sensing Application to Atmospheric & Marine Environment	Dr. A.K Mishra
<b>19/11/2022</b>	<b>SAT</b>			
<b>20/11/2022</b>	<b>SUN</b>			
21/11/2022	Monday	1600-1730 hrs	RS & GIS Applications in Forestry and Ecology	Dr. Hitendra Padalia
22/11/2022	Tuesday	1600-1730 hrs	RS & GIS Applications to Water Resources Management	Dr. Praveen Thakur
23/11/2022	Wednesday	1600-1730 hrs	Geospatial Technology for climate change studies	Dr. Arijit Roy
24/11/2022	Thursday	1600-1730 hrs	RS and GIS Applications in Soil Resource Management	Dr. Suresh Kumar
25/11/2022	Friday	1600-1730 hrs	Panel Discussion	All speakers

Note: Details about the course, examination and latest schedule will be updated on below link;

<https://www.iirs.gov.in/>

or

<https://www.iirs.gov.in/EDUSAT-News>