

**Report on**  
**74- IIRS ISRO Outreach Programme on**  
**“Satellite based Navigation: A Journey from GPS to Mobile phone Platform”**  
**(Human Resource Development Center, Integral University, Lucknow)**  
**01<sup>st</sup> March to 12<sup>th</sup> March, 2021**

Human Resource Development Centre (HRDC), Integral University Lucknow is one of the Remote Center of Indian Institute of Remote Sensing (IIRS), Indian Space Research Organization (ISRO), Department of Space, Govt. of India, Dehradun, India. Human Resource Development Centre, Integral University, Lucknow had successfully organized the 74, 2 Week IIRS ISRO Outreach Programme on “Satellite based Navigation: A Journey from GPS to Mobile phone” from March 01-11, 2021 for working professionals and students in association with Indian Institute of Remote Sensing, Indian Space Research Organization, Department of Space, Govt. of India, Dehradun.

Indian Institute of Remote Sensing (IIRS) under Indian Space Research Organization (ISRO) is a premier Training and Educational Institute set up for developing trained professionals in the field of Remote Sensing, Geo Informatics 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.

The technical sessions constituted of a wide variety of topics taken by a team of expert’s viz.:

<b>S. No.</b>	<b>Date</b>	<b>Topic</b>	<b>Resource Person</b>	<b>Link of material</b>
1.	01 March 21	Introduction to GNSS	Shiva Reddy	<a href="https://eclasscms.iirs.gov.in/watch_lecture.php?id=NjYmMjEgU2VwIDIwMjBfSW5kaWFuIFJlZ2lvbmFsIE5hdmlnYXRpb24gU2F0ZWxsaXRIIFN5c3RlbSAoSVJOU1MpJkRyLiBBc2h1dG9zaCBhbmQgU2hyaS4gS2FtYWwmMlcyOHd6ZFRES3cmMjAyMC0wOS0yMQ==">https://eclasscms.iirs.gov.in/watch_lecture.php?id=NjYmMjEgU2VwIDIwMjBfSW5kaWFuIFJlZ2lvbmFsIE5hdmlnYXRpb24gU2F0ZWxsaXRIIFN5c3RlbSAoSVJOU1MpJkRyLiBBc2h1dG9zaCBhbmQgU2hyaS4gS2FtYWwmMlcyOHd6ZFRES3cmMjAyMC0wOS0yMQ==</a>
2.	02 March 21	Satellite Based Navigation Systems (IRNSS etc)	P. K. C. Ray	<a href="https://eclasscms.iirs.gov.in/watch_lecture.php?id=NjYmR1BTRHJlY2VpdmVycywgchJvY2Vzc2luZyBtZXRob2RzLCBlcnJvcnMgYW5kIGFjY3VyYWw5JkRyLiBBc">https://eclasscms.iirs.gov.in/watch_lecture.php?id=NjYmR1BTRHJlY2VpdmVycywgchJvY2Vzc2luZyBtZXRob2RzLCBlcnJvcnMgYW5kIGFjY3VyYWw5JkRyLiBBc</a>

				<a href="https://eclassecms.iirs.gov.in/watch_lecture.php?id=NjYmU2F0ZWxsaXRlcyBiYXNlZCBBdWdtZW50YXRpb24gc3lzdGVtcyAgR1BTIEFpZGVkIGFuZCBHRU8gQXVnbWVudGVkIE5hdmlnYXRpb24gKEdBR0FOKSYgRHIuIEFzaHV0b3NoIEJoYXJkd2FqJmRSVFBSaG5kSThnJlIwMjAtMDktMTc=">2h1dG9zaCBCaGFyZHdhai ZqZFRDNHJtOU92WSYy MDIwLTA5LTE1</a>
3.	03 March 21	GNSS Measurement and Positioning Techniques	Ashutosh Srivastava	<a href="https://eclassecms.iirs.gov.in/watch_lecture.php?id=NjYmU2F0ZWxsaXRlcyBiYXNlZCBBdWdtZW50YXRpb24gc3lzdGVtcyAgR1BTIEFpZGVkIGFuZCBHRU8gQXVnbWVudGVkIE5hdmlnYXRpb24gKEdBR0FOKSYgRHIuIEFzaHV0b3NoIEJoYXJkd2FqJmRSVFBSaG5kSThnJlIwMjAtMDktMTc=">https://eclassecms.iirs.gov.in/ watch_lecture.php?id=NjYm U2F0ZWxsaXRlcyBiYXNl ZCBBdWdtZW50YXRpb24 gc3lzdGVtcyAgR1BTIEFpZ GVkIGFuZCBHRU8gQXV nbWVudGVkIE5hdmlnYX Rpb24gKEdBR0FOKSYgR HIuIEFzaHV0b3NoIEJoYX Jkd2FqJmRSVFBSaG5kSTh nJlIwMjAtMDktMTc=</a>
4.	04 March 21	GNSS Receivers GNSS Errors	Dr. Ashutosh Bhardwaj	<a href="https://eclassecms.iirs.gov.in/watch_lecture.php?id=NjYmR1BTIHNPZ25hbCBjaGFyYWN0ZXJpc3RpY3MsIERhdGEgZm9ybWF0cyAoYnJvYWRjYXN0LCBwcmVjaXNIIGVwaGVtZXJpcykmRHIuIEFzaHV0b3NoIEJoYXJkd2FqICYgU2hyaSBBC2hpY2ggSm9zaGkmY3FabWlyb2k4SWsmMjAyMC0wOS0xOA==">https://eclassecms.iirs.gov.in/ watch_lecture.php?id=NjYm R1BTIHNPZ25hbCBjaGFy YWN0ZXJpc3RpY3MsIER hdGEgZm9ybWF0cyAoYnJ vYWRjYXN0LCBwcmVja XNIIGVwaGVtZXJpcykmR HIuIEFzaHV0b3NoIEJoYX Jkd2FqICYgU2hyaSBBC2hp c2ggSm9zaGkmY3FabWlyb 2k4SWsmMjAyMC0wOS0x OA==</a>
5.	05 March 21	Satellite based Augmentation System (GAGAN etc)	Shri Ashish Joshi	<a href="https://eclassecms.iirs.gov.in/watch_lecture.php?id=NjYmQWR2YW5jZSBHTINTIHByb2Nlc3NpbmcmU2hyaSBTdXJlc2ggS2FubmF1aml5YSZlSV9VQ29fMFp4cyYyMDIwLTA5LTI1">https://eclassecms.iirs.gov.in/ watch_lecture.php?id=NjYm QWR2YW5jZSBHTINTIH Byb2Nlc3NpbmcmU2hyaS BTdXJlc2ggS2FubmF1aml5 YSZlSV9VQ29fMFp4cyYy MDIwLTA5LTI1</a>
6.	09 March 21	Application of GNSS in location based services	Mr. Vinay Kumar	<a href="https://eclassecms.iirs.gov.in/watch_lecture.php?id=NjYmQWR2YW5jZSBHTINTIHByb2Nlc3NpbmcmU2hyaSBTdXJlc2ggS2FubmF1aml5YSZlSV9VQ29fMFp4cyYyMDIwLTA5LTI1">https://eclassecms.iirs.gov.in/ watch_lecture.php?id=NjYm QWR2YW5jZSBHTINTIH Byb2Nlc3NpbmcmU2hyaS BTdXJlc2ggS2FubmF1aml5 YSZlSV9VQ29fMFp4cyYy MDIwLTA5LTI1</a>

7.	10 March 21	Application of GNSS in Geosciences	Ashutosh Srivastava	<a href="https://eclasscms.iirs.gov.in/watch_lecture.php?id=NjYmQWR2YW5jZSBHTINTIHByb2Nlc3NpbmcmU2hyaSBTdXJlc2ggS2FubmF1aml5YSZlSV9VQ29fMFp4cyYyMDIwLTA5LTI0">https://eclasscms.iirs.gov.in/watch_lecture.php?id=NjYmQWR2YW5jZSBHTINTIHByb2Nlc3NpbmcmU2hyaSBTdXJlc2ggS2FubmF1aml5YSZlSV9VQ29fMFp4cyYyMDIwLTA5LTI0</a>
8.	11 March 21	Application of GNSS: Atmospheric Studies	Suresh Kannaujiya	<a href="https://eclasscms.iirs.gov.in/watch_lecture.php?id=NjYmMjIlgU2VwIDIwMjBfREdQUyBkZW1vbnN0cmF0aW9uIChQcmUtcmlvMjB3JkZWQgZm9sbG93ZWQgYnkgbG12ZSBxdWVyeSBzZXNzaW9uKSZEci4gQXNodXRvc2ggQmhhcmR3YWomclpzSVA4WFJzbzQmMjAyMCOwOS0yMg==">https://eclasscms.iirs.gov.in/watch_lecture.php?id=NjYmMjIlgU2VwIDIwMjBfREdQUyBkZW1vbnN0cmF0aW9uIChQcmUtcmlvMjB3JkZWQgZm9sbG93ZWQgYnkgbG12ZSBxdWVyeSBzZXNzaW9uKSZEci4gQXNodXRvc2ggQmhhcmR3YWomclpzSVA4WFJzbzQmMjAyMCOwOS0yMg==</a>
9.	12 March 21	Panel Discussion	-	

Overall, **Six Participants** attended the program and got benefitted from the much needed and timely insights on Satellite based Navigation.

**Institute Certificate by ISRO:**

