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Report on

145-IIRS ISRO Outreach Programme

on

“LIDAR data processing and applications”

(Human Resource Development Center, Integral University, Lucknow)

August 05-16, 2024

Human Resource Development Centre (HRDC), Integral University Lucknow is the Nodal Center of Indian Institute of Remote Sensing (IIRS), Indian Space Research Organization (ISRO), Department of Space, Govt. of India, Dehradun, India. HRDC had successfully organized the 145-IIRS ISRO Outreach Programme on **“LIDAR Data Processing and Applications”** from **August 05-16, 2024** for working professionals and students in association with IIRS, ISRO.

The 145th IIRS Outreach program covers essential topics such as the fundamentals of LIDAR, data acquisition, data processing techniques, and a range of applications across multiple fields. The course focuses on real-world applications in fields like forestry, urban planning, environmental monitoring, hydrology, and disaster management. This course is organized by the Indian Institute of Remote Sensing (IIRS), a unit of the Indian Space Research Organisation (ISRO).

Key Objectives:

- Educate participants on the basic principles and working mechanisms of LIDAR (Light Detection and Ranging) technology, including how LIDAR data is acquired and used in various applications.
- Equip learners with hands-on experience in processing and analyzing LIDAR datasets using appropriate software tools, enabling them to handle real-world data efficiently.
- Demonstrate the diverse applications of LIDAR in fields like forestry, urban planning, environmental monitoring, hydrology, and disaster management. This aims to inspire participants to apply LIDAR data in various sectors for problem-solving and decision-making.



Contribute to the capacity building of students, researchers, and professionals by offering them access to state-of-the-art remote sensing technologies, thereby promoting the use of geospatial tools in sustainable development and scientific research.

The course will cover:

- Introduction to lunar science and exploration.
- Overview to LIDAR Remote Sensing and concepts of GNSS, IMU, Utility and requirement in LIDAR systems.
- Applications of lunar data in scientific research and exploration.

Overall, Thirty Five Participants (Students and Working Professional) attended the program in fully online mode and got benefitted.

Programme Schedule:

Lecture No.	Date	Lecture Topic	Faculty
1.	05/08/2024	Overview to LIDAR Remote Sensing	Mrs. Shefali Agrawal
2.	06/08/2024	Concepts of GNSS, IMU, Utility and requirement in LIDAR systems	Dr. Kshama Gupta
3.	07/08/2024	Spaceborne Lidar Remote Sensing and Terrestrial Laser Scanning	Dr. Anil Kumar
4.	08/08/2024	LIDAR Application: Terrain Mapping	Dr. Hina Pande
5.	09/08/2024	LIDAR Application: Vegetation Analysis	Dr. Poonam Seth Tiwari
6.	12/08/2024	LIDAR Application: Landslide Mapping and Monitoring	Dr. Subrata Nandy
7.	13/08/2024	LiDAR Application: Urban Feature	Dr. Shovan Lal Chatteraj
8.	14/08/2024	LIDAR Application: Atmospheric Atmospheric	Dr. Manu Mehta
9.	16/08/2024	Visualisation of different types of Lidar data	Dr. Hina Pande/ Dr. Poonam Seth Tiwari



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PARTICIPANTS LIST

S.No.	RegNo.	Name	Email ID	Profession	Qualification	Subjects	Passing Year
1	20241452476033	Sudhanshu maurya	chhotumaurya9936@gmail.com	Student	Graduation	Agronomy	2024
2	20241452476036	Shakeb Ahmad	shakebb@student.iul.ac.in	Student	PG	Sociology	2021
3	20241452478341	Faiza	Faizakh@student.iul.ac.in	Student	UG	CSE	2025
4	20241452478371	Mohd Umair Azhar	umairaz@student.iul.ac.in	Student	UG	CSE	2025
5	20241452476580	Saqafat Isar	saqafatisarisarisar0099@gmail.com	Working Prof.	Graduation	CSE	2024
6	20241452476607	Mohd Asif	masiff@student.iul.ac.in	Student	Graduation	Agriculture	2024
7	20241452484288	Mohd Maaz	maazbca@student.iul.ac.in	Student	PG	CSE	2025
8	20241452476358	Kritika Singh	kritimsc@student.iul.ac.in	Student	PG	Biotechnology	2025
9	20241452476112	Ryan Laiq Ahmed	ahmedryan127@gmail.com	Student	Graduation	CSE	2024
10	20241452482010	Md Shahil Zeeshan	ahmadrizvi78698@gmail.com	Student	UG	BCA	2026
11	20241452477154	Farhan Ahmad	azaji0118@gmail.com	Student	UG	CSE	2025
12	20241452481005	Himanshu Ranjan	himanshu30092002@gmail.com	Student	Graduation	B.sc.(hons) Agriculture	2024
13	20241452480750	Amir Sohail	amirso@student.iul.ac.in	Student	UG	CSE	2025
14	20241452479221	Bilal Alam Aftab Alam Khan	bilalaf@student.iul.ac.in	Student	UG	BCA	2026
15	20241452476155	Apoorva Tripathi	tripathiapoorva43@gmail.com	Student	Graduation	CSE	2024
16	20241452473597	Asfa Almas	asfaqazi92@gmail.com	Student	Graduation	ECE	2014
17	20241452476426	Sakshi Dubey	sakshidy@student.iul.ac.in	Student	PG	Biotechnology	2025
18	20241452476444	Shipra gautam	shiprash001@gmail.com	Student	Graduation	B.Sc.(hons) PME	2021
19	20241452476192	Ziyaan Ahmed Khan	ziyaanah@student.iul.ac.in	Student	UG	CSE	2025



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20	20241452477218	Md. Shahbaz Shamim	mdshahbazshamim9@gmail.com	Student	UG	CSE	2025
21	20241452475941	Shivansh Singh	shivanshh@student.iul.ac.in	Student	Graduation	Agriculture	2024
22	20241452475942	Aditya kumar	adityaop@student.iul.ac.in	Student	UG	CSE	2027
23	20241452476201	Shahbaz Husain Khan	shahbaz40khan@gmail.com	Student	UG	CSE	2026
24	20241452477483	Murtaza Abdi	murtazasyed095@gmail.com	Student	Graduation	B.Sc.(hons) PME	2024
25	20241452484140	Mo Hamza Ansari	justcalledmha7861@gmail.com	Student	PG	AI, CG, Math, DAA, DSA	2025
26	20241452476464	Mohd. Kaif	mdkaiff@student.iul.ac.in	Student	UG	CSE	2026
27	20241452476467	Uzma Khan	khanuzma0921@gmail.com	Student	Graduation	B.Sc.(hons) PME	2023
28	20241452475957	Abdul Hannan	abdulhannan0307@gmail.com	Student	Graduation	CSE	2023
29	20241452476484	Mehweesh Ayub	mehweeshayub@gmail.com	Student	UG	CSE	2025
30	20241452475997	Tushar Verma	tusharv@iul.ac.in	Working Prof.	PG	EE	2015
31	20241452476001	Abdul Sajid	msajid@iul.ac.in	Working Prof.	PG	M.TECH ECS	2013
32	20241452477283	Varsha kumari	varshamaurya589@gmail.com	Student	UG	Biotechnology	2025
33	20241452476530	Abdullah khan	abdullahkhan160900@gmail.com	Student	UG	Biotechnology	2025
34	20241452476024	Ayat Alfiya	ayatalfiy@student.iul.ac.in	Student	UG	Pharmaceutical	2024
35	20241452476283	Mohammad Mohsin Khan	mohdmohsinkhan635@gmail.com	Student	UG	Biotechnology	2025