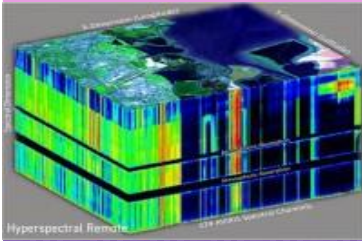# Hyper-spectral Remote Sensing and its Application

Hyper-spectral Remote Sensing and its Application, webinar was organized on the year of 2018-19. It Gives idea about evaluating data and effective mapping.

Course Objectives:

- Apply the principles of Remote Sensing and GIS to collect, map and retrieve spatial information.
- Plan, assess and evaluate natural and manmade systems using geospatial models and methods.
- Use geospatial tools and techniques for natural resources planning and management.

Learning Outcomes:

- Identify specific data and methodologies for effective mapping and evaluation of natural resources.
- Develop geospatial models and tools to address the social and engineering problems
- Design multi-criteria geospatial systems for decision making process

Pre-requisites: Nil
Course Type : Audit (Workshop)
Duration : 30 Hours

Module	Contents	Duration
Module1	• Introduction to ENVI, Python and Downloading Displaying, and Analyzing Hyperspectral Imagery • Atmospheric Correction of Hyperspectral Imagery. • MNFratioingfrom Hyperspectral(EO1) • Hyperspectral Image Classification Using Spectral Angle Mapper (SAM) & Spectral Feature Fitting (SFF).	10 hours
Module2	• Hyperspectral Imagery Classification Using an Unsupervised Neuron fuzzy System. • Application of Hyperspectral Imagery in Geological Studies. • Hyperspectral Signatures & Feature Fitting. • Hyperspectral Remote Sensing for Agriculture and soil Studies.	10 hours
Module3	• Hyperspectral Remote Sensing for Forestry Applications. • Hyperspectral Remote Sensing for Urban Studies. • Mineral identification from Hyperspectral imagery • Python Programming for Hyperspectral data analysis.	10 hours
	TOTAL	**30 hours**

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Convener

A REPORT ON
NAME OF THE PROGRAMME
HYPERSPECTRAL REMOTE SENSING AND ITS APPLICATIONS
TOTAL NUMBER OF PARTICIPANTS: 60
ACADEMIC YEAR: 2018-19
DATE: 05.12.2018

Optical remote sensing analyzes varying electromagnetic radiation (spectral properties) in the visible - near infrared, shortwave infrared and thermal infrared spectral region (from 0.4 to 14 microns), reflected from different targets on the Earth's surface. Hyperspectral remote sensing, also known as imaging spectroscopy, is based on the analysis and evaluation of the reflected (also emitted) radiation detected by a high number of narrow, contiguous and continuous spectral bands. The detailed spectral characterization of surface absorption features provided by imaging spectrometers enables to use robust inversion algorithms for the retrieval of bio- and geochemical information over the imaged area.

APPLICATIONS
•Geological exploration from near to far, detection and mapping of minerals, rare earths and base metals, mapping and monitoring of mining sites.
•Soil characterization and observation, digital soil mapping, quantitative soil spectroscopy quantitative determination of soil parameters (including organic carbon, soil moisture, grain size, iron oxides, carbonates, gypsum): sustainable management of renewable resources, soil erosion and land degradation mapping, soil contamination
•Influence of heat waves on soil and vegetation based on thermal hyperspectral remote sensing.
•Monitoring of dry areas for water management and early detection of ecosystem changes.
•Geologic interpretation of Remote Sensing data, active deformation of the Earth surface, tectonic geomorphology, orogenic processes

Introduction Lectures on 05-12-2018

USES FOR STUDENTS AND DIFFERENT PEOPLE

Hyperspectral remote sensing, also known as imaging spectroscopy, is a relatively new technology that is currently being investigated by researchers and scientists with regard to the

•Detection and identification of minerals,

•Terrestrial vegetation,

•Man-made materials and backgrounds.

Dr. Anita Patra, Registrar, CUTM

Convener

List of Participants:

Name of Event: Hyper-spectral Remote Sensing and its Application

Organized by: Centurion University of Technology and Management

Date: 5 December 2018

Hyper-spectral Remote Sensing and its Application, webinar was organized in the year of 2018-19. It Gives idea about evaluating data and effective mapping.

List of Participants:

S. No.	Name	Reg. No.	Presence/Absent
1	CHIKATI DIVYA TEJA	170101120016	Absent
2	YEDLA DEEPIKA	170101120002	Present
3	DEBASIS PADHY	170101120003	Present
4	ANKADALA KARUNAKAR	170101120004	Present
5	VALLA PRIYANKA	170101120005	Present
6	T. GREESHMA	170101120017	Present
7	VOONA SRIJA	170101120019	Present
8	SEPHALI PANDA	170101120011	Present
9	SOUMYA DEEPTO DASH	170101120012	Present
10	SAASWAT PANIGRAHI	170101120025	Present
11	KOTTURU SAI	170101120026	Absent
12	ROUTHU DIVYA	170101120028	Present
13	AYUSHI MISHRA	170101120034	Present
14	DEVARACHETTY SRIYA	170101120035	Present
15	POTNURU MANIKANTA	170101120036	Present
16	KILLAMSETTY PRAVEENA	170101120038	Present
17	PRANAY RAJ	170101120021	Present
18	BADAL CHOUDHURY	170101120022	Present
19	HRUDANAND NIAL	170101120041	Present
20	DAYA SHANKAR ROUT	170101120043	Present
21	PADALA VENKATESH	170101120058	Present
22	SAROJ KUMAR NAYAK	170101120059	Present
23	ANDHAVARAPU ANUSHA	170101120051	Present
24	PINTU KARJEE	170101120052	Present
25	MURAPAKA KANAKA MAHA LAKSHMI	170101120066	Present
26	POTNURU VAMSIKRISHNA	170101120067	Present
27	B.NAGA SATISH KUMAR REDDY	170101120049	Present
28	LAKSHMI NARAYANA MANUKONDA	170101120050	Absent
29	VYSYA RAJU SAI SIRISHA	170101120044	Present

30	ROUTH KARTHIK	170101120045	Present
31	KALAMATA AVINASH	170101120060	Present
32	SANJANA SINGH	170101120056	Present
33	PREETI PADMA PATRO	170101120057	Present
34	CH.RANI	170101120070	Present
35	SNIGDHA PATNAIK	170101120071	Present
36	MAMIDI CHANDRIKA	180101120044	Present
37	DHARAM NISHAN MISHAL	170101120053	Present
38	AYUBA BHUYAN	170101120054	Present
39	GONDRU KIRAN KUMAR	170101120055	Present
40	EPPILI CHATRAPATHI	170101120061	Present
41	BOMMALI VARA PRASAD	170101120062	Present
42	VALLA VIKASH	170101120063	Present
43	ADAPA DHANUSHA	170101120064	Present
44	YALALA SANDEEP KUMAR	170101120013	Present
45	M. SAI SPANDANA	170101120014	Present
46	SIRIPURAM LAKSHMI PRASANNA	170101120015	Present
47	P. HARSHAVARDHAN	170101120020	Absent
48	G. PAVAN KALYAN	170101120023	Present
49	MONALISA PRADHAN	170101120024	Present
50	TULUGU RAHUL	170101120039	Present
51	DARAPU ABHISHEK	170101120040	Present
52	DIGVIJAY BEHERA	170101120001	Present
53	REVALLA VIDYA SRI	170101120006	Present
54	DIBYA SAMBIT SAHU	170101120007	Present
55	POREDDI PRIYANKA	170101120029	Present
56	METTA DEVENDRA PRASAD	170101120030	Present
57	ALIBILLI MAHESH	170101120032	Present
58	AMOSH KHURA	170101120046	Present
59	ROSHAN KAJUR	170101120047	Absent
60	MAJJI REENA	170101120048	Present

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