

Lecture No-01

CORE COURSE - 11 (Semester - III)

1

(REMOTE SENSING & GEOGRAPHICAL INFORMATION SYSTEM)

UNIT - ONE

TOPIC

Meaning & Definition of Remote Sensing



Introduction

The term "Remote Sensing" was first used in the Early 1960s by the staff of the Geography Branch, Office of Naval Research (ONR) for presentation to the Committee on Geography. The chief architect of this was Evelyn I. Pruitt. The new term "Remote Sensing", prompted throughout a series of Symposia sponsored by ONR at the Willow Run Laboratories of the University of Michigan, gained wide acceptance.

Meaning of Remote Sensing

Remote Sensing means "SENSING" from the "REMOTE"

areas or observation or taking information from far off distance. In the simplest words, Remote Sensing is acquiring information about an object without touching it.



→ Remote Sensing deals with the observation and measurement of objects on the Earth's surface from a distance.

→ The meaning & concept of Remote Sensing also encompasses both the fields of Aerial photography and Satellite imagery. Both these fields highlights the characteristics of objects of Interest for their identification, measurement and analysis without any physical touch or direct contact.

→ Remote Sensing (RS), also called Earth observation, refers to acquiring information about varieties of spatially distributed areas on the Earth's surface without being in direct contact with the object or area.

→ Remote Sensing system based on,

- Electromagnetic Field Variations includes Aerial & Satellite Remote Sensing, Multiband Aerial Photography, Microwave Remote Sensing & Radar.
- Force Field Variations include Gravity Meter, Magnetometer & Galvanometer.
- Acoustic wave Field Variations include ultrasound and Ultrasonic phenomena.



→ Electro-Magnetic Radiation which is reflected or emitted from an object is the usual source of Remote Sensing data. Humans accomplish this task with aid of Eyes or by the sense of smell and hearing, so Remote Sensing is the Day-today business for people. Reading the Newspaper, watching cars driving in front of you are all Remote Sensing activities.

⇒ Definition of Remote Sensing →

Remote Sensing has been defined in many ways →

It is the Science, Art & Technique of obtaining information about an object or phenomena, through Electro-magnetic Radiations from a distance without any physical touch or Contact.

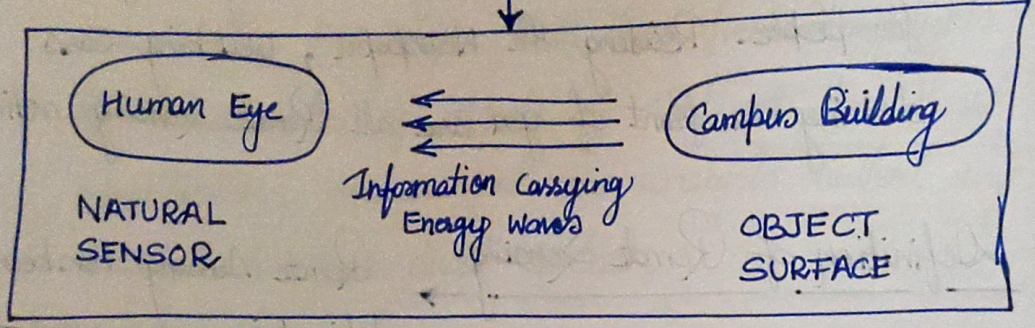
It can also be defined as the Science & Technology by which the characteristics of objects of Interest can be identified, measured or analysed without direct contact.

→ According to NCERT,

"It is defined as the total processes used to acquire and measure the information of some property of objects and phenomena by a recording device (sensor) that is not in



in physical contact with the objects and phenomena in study". It can be noted from the above definition of Remote Sensing that it primarily involves an object surface, the recording device and the information carrying energy waves



→ According to NASA,

"Remote Sensing is the acquisition and measurement of data/information on some properties of a phenomenon, object or material by a recording device not in physical, intimate contact with the features under surveillance; techniques involve amassing knowledge pertinent to environments by measuring force fields, electromagnetic radiation or acoustic energy employing cameras, Radiometers, lasers, Radar, Sonar, Thermal devices & other instruments used in numerous fields of Geography, Land Surveying, Hydrology, Ecology, Military Intelligence, Commercial & Economic planning & Humanitarian applications among others!"