

DAILY ASSESSMENT FORMAT

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Course:	IIRS Outreach Program on Satellite Photogrammetry	USN:	4AL15EC024
Topic:	Introducing Photogrammetric Concepts	Semester & Section:	8 th A
Github Repository:	Gaganashree-P		

AFTERNOON SESSION DETAILS

Image of session

The screenshot displays the IIRS E-CLASS web interface during a live session. The browser address bar shows 'eclass.iirs.gov.in/quiz'. The interface features a sidebar on the left with navigation links: Live Session, Offline Session, Study Material, Attendance Status, Course Guidelines, and Feedback. The main content area shows a satellite image of an industrial site with several labels: 'INDUSTRIAL SHEEDS', 'ROAD DIVIDER', 'ROAD', 'ELECTRIC POLE', and 'ROAD ISLAND'. A presenter's name, 'Dr. Poonam S. Tiwari', is displayed at the top of the main area, along with a 'Live Now' button. A message at the top of the main area reads: 'Please refresh this page or do not navigate to another menu or tab during the session.' On the right side, there is an 'Ask Question' section with a list of input fields for questions. At the bottom of the main area, there is a 'Please rate this session' prompt.

or do not navigate to another menu or tab during the session.

Presenter: Dr. Poonam S. Tiwari Live Now

INDIAN INSTITUTE OF REMOTE SENSING, DEHRADUN

Quiz time.....

Choose the correct statement in respect to aerial photographs:

1. They have uniform scale
2. The geometry of objects is distorted
3. They exhibit abstract representation of ground
4. Different symbols and colours are used to describe features

What is a principal point:

1. Marking on the corner/edge of photograph
2. Point of position of camera at time of exposure
3. Distance between the fiducial points
4. Point on the ground

Regarding relief displacement select the false statement:

1. Depends on height of point above datum
2. Depends on flying height of the camera
3. Depends of viewing position
4. Is not visible in truly vertical photographs

Ask Question

Active windows

Report:-

Map: It shows an area as seen vertically from above. Different symbols and colours are used to represent various objects on a map.

Aerial Photo: They are taken from an aircraft to show objects on the ground. They can be divided into vertical aerial photos and oblique aerial photos.

Map	Aerial photo
Orthogonal projection	Central projection
Uniform scale	Variable scale
Terrain relief without distortion	Relief displacement
All objects represented on a particular scale	Only objects that are visible
Abstract representation	Real representation

WHAT IS PHOTOGRAMMETRY

- The science of quantitative analysis of measurements from photographs

- Photos - light
- Gramma - to draw
- Metron - to measure

Distinct Areas in Photogrammetry

Metric Photogrammetry

- Making precise measurements from photos determine the relative locations of points.
- Finding distances, angles, areas, volumes, elevations, and sizes and shapes of objects.

Interpretative Photogrammetry

- Deals in recognizing and identifying objects and judging their significance through careful and systematic analysis.

Most common applications:

- preparation of planimetric and Interpretation Sensing topographic maps
- production of digital orthophotos
- Military intelligence such as targeting

BRANCHES OF PHOTOGRAMMETRY

Based on platform:

- Ground Based
- UAV/drone based
- Aerial Photogrammetry
- Satellite Photogrammetry

Based on processing techniques:

Analogue System

- Optical or mechanical instruments were used to reconstruct three-dimensional geometry from two overlapping photographs
- The main product during this phase was topographic maps

Digital System

- Digital photogrammetry is applied to digital images that are stored and processed on a computer
- Digital photogrammetry is sometimes called softcopy photogrammetry.
- The output products are in digital form, such as digital maps, DEMs, and digital orthophotos saved on computer storage media.

Analytic system

- The computer replaces some expensive optical and mechanical components
- Devices were analog/digital hybrids
- Main developments- Analytical aerotriangulation, analytical plotters, and orthophoto projectors
- Outputs - can be topographic maps, but can also be digital products such as digital maps and DEMs

Scale of Aerial Photography

Before a photograph can be used as a map supplement or substitute, it is necessary to know its scale. On a map, the scale is printed as a representative fraction that expresses the ratio of map distance to ground distance, For example:

$$\mathbf{RF=MD/ GD}$$

On a photograph, the scale is also expressed as a ratio, but is the ratio of the photo distance (PD) to ground distance. For example:

$$\mathbf{RF PD/GD}$$

$$\mathbf{scale = f / H}$$

$$\mathbf{scale = photo\ distance + ground\ distance}$$

BASIC CONCEPT

- The primary objective of the technique is to derive precise coordinates of a point
- This is done by viewing the area from two different angles, thereby recreating the same conditions as it existed at the time of photography.

TYPES OF AERIAL PHOTOGRAPHY

- Vertical
- Low oblique
- High oblique