

GEOL 5306. GIS and Image Interpretation Practical (2 credits)

Geographic information systems – data encoding- data management, data manipulation, data output. Data Input and Editing: Coordinate Conversion. Digitizing, data encoding, re-projection and transformation. Vector and Raster data analysis. Interpolation and overlay techniques. Display of images, Colour look up tables, Query analysis.

Digital Image analysis using softwares. Geometric correction- Radiometric correction – Noise removal. Image Enhancement- Contrast Manipulation - Edge Enhancement – Spatial feature manipulation –Fourier Analysis. Multi Image Manipulation- Spectral Ratioing –Principal and Canonical Components– Vegetative Components – Intensity – Hue – Saturation – Colour Space Transformation. Graphical representation of the spectral response patterns, unsupervised classification- Hybrid –Classification – Classification of Mixed Pixels.

References

- Mather, P.M. and Koch, M. (2011), Computer Processing of Remotely-Sensed Images – An Introduction, Fourth Edition, John Wiley, New York, 462p.
- DeMers, M. N. (2009), GIS for dummies, Wiley, NJ, 388p.
- Iliffe, J. (2000), Datums and Map Projections for remote sensing, GIS, and surveying, Whittles Publishing, Scotland, 159p.
- Konecny, G. (2003), Geoinformation: Remote sensing, photogrammetry and geographic information systems, Taylor & Francis, London, 266p.
- Sickle, J. V. (2010), Basic GIS Coordinates, CRC Press, FL, 190p.
- Verbyla, D. L. (2003), Practical GIS analysis, Taylor & Francis, London, 305p.