

**Geog 434. Principles of Remote Sensing**  
**BS Geography (5<sup>th</sup> to 8<sup>th</sup> Semester) Programme, University of the Punjab, Lahore**

- **Course Outline:**

- Definition and History,
- Physical Basis (EM Spectrum, Energy Interaction, Spectral Reflectance Curves, Image Characteristics)
- Introduction to Aerial Photography,
- Sensor Systems (Space and airborne, MSS, TM, ETM, HRV, LISS, IKONOS-2, Quick bird-2, AVHRR and others),
- Platforms (Types and Orbital Characteristics),
- Thermal Infrared (Characteristics, TIR Band Properties, TIR Image Interpretation, Intro to Microwave (Importance and applications),
- Digital Image Processing (Over view of computer based image processing),
- Applications (agriculture, urban, natural resources etc.)

- **Lab Outline:**

- Introduction to labs,
- Single band image interpretation,
- False color predictions, False color composite Images Interpretation
- Visual Interpretation of aerial photographs,
- Various sensors data comparison,
- Thermal Infrared Image interpretation,
- Introduction to ERDAS Imagine, display, Geo-linking, Zooming,

- Identification of targets,
- FIELD TRIP

**Book Recommended:**

1. Campbell, James B. (2002). Introduction to Remote Sensing, 3rd Ed., (The Guilford Press) ISBN # 0-7484-0663-8 (pbk).
2. Gibson, P.J (2000). Introductory Remote Sensing: Principles and Concepts (Routledge), ISBN 0-415-19646-9
3. Jensen, J. (2000) Remote Sensing of the Environment: An Earth Resources Perspective, Amazon Publishers,
4. Lillesand, T. M. and Kiefer, R. W. (2004). Remote Sensing and Image Interpretation, 5th edition. (John Wiley and Sons), ISBN 0-471-15227-7
5. Mather, P M (2004). Computer Processing of Remotely Sensed Images, 3rd Ed. (John Wiley and Sons), ISBN 0-470-84919-3
6. Sabins, F.F (1996). Remote Sensing: Principles and Interpretation, 3rd ed, (W H Freeman & Co), ISBN # 0-7167-2442-1

**1. Journals / Periodicals:**

1. International Journal of Remote Sensing
2. Remote Sensing of Environment Journal
3. Photogrammetric Engineering & Remote Sensing Journal
4. Geo Carto International Journal
5. Asian Pacific Remote Sensing Journal
6. Canadian Journal of Remote Sensing