

GEOG. 306 PRINCIPLES OF REMOTE SENSING

Credit/Hours: 3(2+1)

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 colour predictions, False colour 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:

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

| Assessment | | | |
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| Sr. No. | Elements | Weightage | Details |
| 1. | Midterm Assessment | 35% | Written Assessment at the mid-point of the semester. |
| 2. | Formative Assessment | 25% | Continuous assessment includes Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc. |
| 3. | Final Assessment | 40% | Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc. |