

Bemidji State University

GEOG 3255: Introduction to Remote Sensing

A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: *.*

Lab Hours/Week: *.*

OJT Hours/Week: *.*

Prerequisites: None

Corequisites: None

MnTC Goals: None

Analysis of a special class of pictures that provide an overhead perspective. These images have unique properties that provide a distinct advantage to assessing spatial changes and patterns of change on the Earth's surface. Students develop an understanding and the skills necessary for interpreting air photos, satellite, and remotely sensed images. Prerequisite: GEOG 3231 or consent of instructor.

B. COURSE EFFECTIVE DATES: 08/25/2014 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Introduction and history of remote sensing.
2. The electromagnetic spectrum and camera basics.
3. Digital Imagery and Image Resolution.
4. Image Interpretation and Earth Observation Satellites.
5. Radar, Thermal, and Lidar.
6. Image pre-processing and Image Classification.
7. Hyperspectral Remote Sensing & Change Detection.
8. Hybrid Classification & Bayesian Classification.

D. LEARNING OUTCOMES (General)

1. Know how the electromagnetic spectrum functions in remote sensing processes.
2. Know how remote sensing data is acquired.
3. Learn the different types of digital imagery.
4. Know the different satellite platforms that acquire remotely sensed data.
5. Know how to conduct both Supervised and Unsupervised classification.
6. Know how to apply hybrid classification methods.
7. Understand basic photogrammetry.
8. Know how to validate remote sensing analysis with fieldwork.

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted