

Remote Sensing
GEOS 5325
Fall 2005
MW 5:30 – 6:45 p.m.
FO 2.604

Instructor: Mohamed G. Abdelsalam
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Description:

This course covers the principles of remote sensing as applied to the earth's environments. The lecture part of the course contains discussions on the principles of remote sensing that include remote sensing data collection and processing, electromagnetic radiation principles and energy-matter interaction. Description of remote sensing systems including aerial photography, visible and near infrared (VNIR) and short wave infrared (SWIR), Thermal infrared (TIR) and radio detection and ranging (RADAR) systems follow this. The lecture part of the course ends with discussion on remote sensing application to water, vegetation, urban landscape, and geological studies. The laboratory part of the course provide a hand-on experience with spectral characteristics of natural materials and analog the digital image processing techniques and their application in characterizing land use-land cover.

Textbook:

Jensen, J.R. 2000. Remote Sensing of the Environment: An Earth Resource Perspective. Prentice Hall Series in Geographic Information Science. Second Edition, 544p.

Grading:

Laboratory Work: 30%
Midterm Examination: 30%
Final Examination: 40%

Course Schedule

August	22	Introduction
	24	Remote Sensing of the Environment
	29	Electromagnetic Radiation Principles
	31	Vision and Colors
September	05	Labor Day-No class
	07	Lab 1: Spectral Curves of Natural Materials
	12	VNIR and SWIR Remote Sensing I
	14	VNIR and SWIR Remote Sensing II
	19	Lab 2: VNIR and SWIR Remote Sensing
	21	Aerial Photography
October	26	Photogrammetry
	28	Lab 3: Image Enhancement
	03	TIR Remote Sensing
	05	Midterm Exam
	10	Radar Remote Sensing I
	12	Radar Remote Sensing II
	17	Radar Equation
	19	Interferometric Synthetic Aperture Radar
	24	Lab 4: Radar Remote Sensing
	26	Elements of Visual Image Interpretation
November	31	Introduction to Digital Image Processing I
	02	Introduction to Digital Image Processing II
	07	Remote Sensing of Water
	09	Remote Sensing of Vegetation
	14	Lab 5: Remote Sensing of Water and Vegetation
	16	Remote Sensing of Urban Landscape
	21	Geological Remote Sensing
	23	Lab 6: Geological Remote Sensing
	28	Planetary Remote Sensing
30	Final Examination	