

**SYLLABUS -- SPRING SEMESTER -- 2015**  
**GG5 760-001 Advanced Topics in Remote Sensing Dr. Haack**  
**Monday 4:30-7:10 Exploratory Hall 2310**

Week	Topic	Chapter
Jan 26	Introduction, Logistics, Overview	
Feb 2	Laboratory Orientation, Vocabulary, Electromagnetic Spectrum, Energy Flow Profile	1, 3 (Chap. 6 175-194)
9	Primary Remote Sensing Systems, Landsat, SPOT, IRS, AVHRR, Radar	2
16	Display Alternatives/Visualization	5
23	Initial Statistics Extraction, Univariate and Multivariate, Histograms	4
Mar 2	Radiometric and Geometric Corrections	6, 7
9	SPRING BREAK	
16	Image Enhancements; Ratios, Edge Enhancement, Principal Components, Vegetative Indices	8
23	Thematic Information Extraction, Supervised Signature Extraction, Decision Rules	9 to page 379
30	<b>MIDTERM EXAMINATION</b> Unsupervised Signature Extraction, Accuracy	Complete 9, 13
Apr 6	Ancillary and Contextual Techniques, CART, Object Oriented Analysis	10
13	Change Detection, Interface of GIS and Remote Sensing	12
20	Advanced Processing Methods, Hyperspectral	11
27	Proposal Presentations	
May 4	Proposal Presentations	

Guest speakers will be added to the schedule during the semester.

The objective of this course is to understand the theory and techniques of using digital remotely sensed data for the mapping and analysis of geographic features. This will include image enhancement and classification methods as applied to various physical and cultural landscapes. Prerequisite; GGS 579 or GGS 416 or POI.

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**Instructor:** Barry N. Haack, Exploratory Hall 2411, 703-993-1215, bhaack@gmu.edu.  
Office Hours: Wednesday 2:00-4:00 pm; and by appointment.

**Required Text:** John R. Jensen, 2005, Introductory Digital Image Processing, Third edition, Prentice-Hall.

**Final Meeting: Monday** May 11, 4:30-7:10.

**Grading Policy:** Final course grade will be based on three equally weighted letter grades received from; 1) midterm examination, 2) assignments (see assignment policy), and 3) a written and orally presented research proposal.

**Honor Policy:** All students are expected to abide by the University Honor System and Code as stated in the University Catalog.

**Assignment Policy:** The assignments are an integral aspect of this course providing a significant component of the material you will be expected to understand. Because of the importance of these assignments, some policies concerning their completion are necessary. These policies include:

1. Assignments are due at the beginning of the class as scheduled.
2. All late assignments, unless a valid excuse is accepted, will be penalized.
3. Assignments not completed or inadequately completed are sufficient reason to receive a failing or incomplete course grade.
4. You are expected to complete assignments as small teams of two or three individuals. Please submit one assignment per team. I expect the composition of those teams may vary during the semester as a function of schedules etc.

**Classroom Etiquette:** In consideration of the educational process, including your own education and in respect to your fellow students and the instructor, please keep cell phones off during the class and only use laptops etc. for taking class notes.