

**SYLLABUS -- SPRING SEMESTER -- 2016**  
**GGG 760-001 Advanced Topics in Remote Sensing Dr. Haack**  
**Tuesday 4:30-7:10 Exploratory Hall 2103**

Week	Topic	Chapter
Jan 19	Introduction, Logistics, Overview	
26	Laboratory Orientation, Vocabulary, Electromagnetic Spectrum, Energy Flow Profile	1, 3 (Chap. 6 175-194)
Feb 2	Primary Remote Sensing Systems, Landsat, SPOT, IRS, AVHRR, Radar	2
9	Display Alternatives/Visualization	5
16	Initial Statistics Extraction, Univariate and Multivariate, Histograms	4
23	Radiometric and Geometric Corrections	6, 7
Mar 1	Image Enhancements; Ratios, Edge Enhancement, Principal Components, Vegetative Indices	8
8	SPRING BREAK	
15	<b>MIDTERM EXAMINATION</b> Thematic Information Extraction, Supervised Signature Extraction, Decision Rules	9 to page 379
22	Unsupervised Signature Extraction, Accuracy	Complete 9, 13
29	Ancillary and Contextual Techniques, CART, Object Oriented Analysis	10
Apr 5	Change Detection, Interface of GIS and Remote Sensing	12
12	Advanced Processing Methods, Hyperspectral	11
19	Proposal Presentations	
26	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: Tuesday 2:00-4:00 pm; and by appointment.

**Required Text:** John R. Jensen, 2016, Introductory Digital Image Processing, Fourth edition, Prentice-Hall.

**Final Meeting:** Tuesday May 10, 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.