

SYLLABUS: SPRING SEMESTER--2017
DR. HAACK
GG5 579 REMOTE SENSING
WEDNESDAY 4:30-7:10 pm EXPLORATORY HALL 2103

| <u>Date</u> | <u>Topic</u> | <u>Chapter</u> |
|-------------|--|----------------|
| Jan 25 | Introductions, Basic Definitions, Overview | 1 |
| Feb 1 | Electromagnetic Spectrum/Energy Flow Profile | 2 |
| 8 | Photointerpretation Principles and Spaceborne Photography | 3, 5 |
| 15 | Literature and Organizations, Land Use/Land Cover, Overview Spaceborne RS, Multispectral Systems | 4, 6, 20 |
| 22 | Landsat Orbit and Sensors | 6 |
| Mar 1 | Visual Interpretation, Landsat TM | 10 |
| 8 | SPOT, AWiFS, ASTER | 17 |
| 15 | SPRING BREAK | |
| 22 | <u>Midterm Examination</u> Ultraviolet | |
| 29 | Landsat Image Analysis Presentations | |
| April 5 | RADAR, Meteorological | 7, 21 |
| 12 | High Spatial Resolution Sensors, Multistage and Ratio Estimators, Accuracy Assessment | 13, 14 |
| 19 | Guest Speaker, Elevation Extraction, Hyperspectral | 8, 15, 18 |
| 26 | Guest Speaker, Thermal | 9, 19 |
| May 3 | Future Systems, GIS, Digital Processing | 11, 12, 16 |

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

Final examination: Wednesday, May 10, 4:30-7:15 pm

Required Text: Introduction to Remote Sensing, Fifth Edition, 2011, J. Campbell, R. Wynne.

Grading Procedure: Course grade will be equally based on letter grades from; 1) midterm exam, 2) comprehensive final exam, 3) assignments and 4) term paper. Letter grades for the examinations are based on a class/exam specific instructor determined curve (Predetermined percentile levels are not used). Failure to satisfactorily complete all assignments will result in a course grade of F.

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 on a geometrically progressing basis; 0, 1, 2, 4 etc..
3. Assignments not completed or inadequately completed are sufficient reason to receive a failing or incomplete course grade.

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.

Honor Code: Students are expected to review and abide by the GMU Honor Code.

Course Objectives: GGS 579 provides an understanding of the use of remote sensing for the collection and analysis of spatial information. The emphasis is on non-photographic remote sensing and visual rather than digital analysis methods. The course will concentrate on operational/available systems and primarily spaceborne platforms. Much of the learning experience is out-of-class, hands-on assignments as well as extensive examination of imagery in class.

Prerequisite: GGS 579 has a prerequisite of a course in air photo interpretation (GGS 412) or GGS 550, Geospatial Science Fundamentals, equivalent or permission of instructor.