

Course title	Interpretation of Aerial Photographs
Course number	FRSC/GEOG 398
Course date	Fall Semester 2004 (August 30, 200 through December 7, 2004)
Location	Lecture: HFSB 105 ; Lab: Centeq B 214
Meeting day(s)	Monday & Wednesday
Meeting time(s)	Lecture MW: 12:40 - 1:30pm ; Lab W: 2:00 - 4:50pm

Instructor Information

Name	Sorin Popescu
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Office location	Centeq B 221D
Phone	862-2614
WebCT page	https://webct.tamu.edu/ (follow link to Course Listings or use MyWebCT Logon)
Office hours	Open door policy, <i>when</i> the door is open, though I recommend emailing for appointments. Please put “398” in the subject in email messages regarding this class to receive prompt attention. Please avoid “drop-ins” just before class on Monday and Wednesday.

Course description

Objectives	<p>Introduce students to the principles, equipment, and techniques used to:</p> <ul style="list-style-type: none">• interpret aerial photographs and digital imagery• obtain reliable measurements and maps from aerial photographs and digital imagery, and• practically implement aerial photointerpretation in various disciplines. <p>The class emphasizes the need for being able to think in a spatial context for a variety of environmental applications.</p>
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Textbooks

Required reading	<i>Aerial Photography and Image Interpretation</i> , Paine, David P.; Kiser, James D., John Wiley & Sons, Incorporated , 2nd ed., April 2003, 0471204897
Supplemental text on reserve at West Campus Library	<i>Fundamentals of Remote Sensing and Airphoto Interpretation</i> , Avery, Thomas E.; Berlin, Graydon, L., Macmillan Publishing Company, 5th ed., 1992. Call #: TR810.A9 1992 (on reserve, 2 hours check-out)

Grading

10 point brake-	90.0 – 100 = A	Excellent
out system	80.0 - 89.9 = B	Good
	70.0 – 79.9 = C	Satisfactory
	60.0 – 69.9 = D	Passing
	00.0 – 59.9 = F	Fail

Laboratories	30 %	All lab work is due at the beginning of the following lab period
Homework	10 %	
Quizzes	10 %	Will be administered through webCT
Midterm exam	20 %	Wednesday, Oct. 13 th , during lab
Final exam	30 %	Monday, Dec. 13 th , 10:30am – 12:30pm.

You will receive a registration block if checked out lab equipment is not returned before the day of the final exam.

Course outline

Week	Topic	Reading
1	History of aerial photography; definitions of terms; electromagnetic spectrum	Chapter 1, part of Chapter 2
2	Geometry of vertical airphotos, principles of stereoscopic vision	Chapters: 2 and 3
3	Photogrammetry: scale of vertical airphotos; horizontal measurements	Chapters: 4 and 5
4	Photogrammetry: vertical measurements	Chapter 6 and 7
5	Digital imagery; orthophotography, map projections	Chapters: 8 and 9
6	GPS, GIS	Chapters: 10 and 12
7	Photo interpretation: human factors, films, filters	Chapters: 13 and 14
8	Photo interpretation: principles and techniques	Chapter 15
9	Land use, land cover	Chapters: 16 and 18
10	Geology, soil, engineering and environmental applications	Chapters: 17 and 19
11	Vegetation analysis, forestry applications	Chapters: 20 and 21
12	Natural resources inventory, statistics and sampling techniques, mapping accuracy	Chapters: 22, 23, 24, 25
13	Introduction to remote sensing, history, sensors	Chapter 26
14	Active remote sensors: lidar and radar	Chapter 27

Laboratory schedule

Week	Topic	Location
1	Geometry of aerial photos, principal and conjugate point, stereo vision	Centeq B 214
2	Determining Distance, Angles, and Area using Air Photos	Centeq B 214
3	Height Determination from Air Photos I: Relief Displacement and Monoscopic Parallax	Centeq B 214
4	Height Determination from Air Photos: Stereoscopic Parallax	Centeq B 214
5	Field Collection of Global Positioning System (GPS) Data	Centeq B 214
6	Differential correction of GPS data	Centeq B 214
7	Midterm exam	TBA
8	Principles and techniques of aerial photo interpretation	Centeq B 214
9	Land-use/land-cover mapping using aerial photography	Centeq B 214
10	Digital spatial data sources: DEM, DOQQs, DRG, DLG	Centeq B 214
11	Finding GIS Data Layers and Viewing them in ArcView 8.1	Centeq B 214
12	Onscreen digitizing	Centeq B 214
13	Map accuracy assessment	Centeq B 214
14	Review of laboratory topics	TBA

Laboratory, Homework, and Exam policy

The University policy on Scholastic Dishonesty will be enforced in this course. While you are encouraged to help each other understand concepts and techniques, all work submitted should be your own. Exceptions to this policy will be explicitly noted by the instructor and should not be assumed by students. Make-up exams will not be offered. If you are going to miss an exam for a valid reason (per University rules), **contact the instructor** well in advance.

All laboratory and homework assignments are to be completed in a neat, logical, and clear fashion. A 10% reduction in grade will be assessed for each weekday a lab or homework assignment is handed in late (up to a 50% reduction). Assignments late more than one week will not be accepted without documented excuse (family or medical emergencies). All lab work is designed to be completed in class.

Aggie Code of Honor

*Aggies do not lie, cheat, or steal,
nor do they tolerate those who do.*

The Aggie Code of Honor functions as a symbol to all Aggies, promoting understanding and loyalty to truth and confidence in each other.

Prerequisites: good academic standing

Required laboratory supplies

- Engineer's scale
- Plastic overlays: clear acetate, dura-lar, mylar
- Overlay marker (permanent): extra/ultra fine point, such as Sharpie Extra Fine Point, Pilot, Pentel, etc. Colors: black, green, blue, red.
- Drafting tape (small roll, not masking tape!)
- Protractor (reading to the nearest degree)
- Binder clips

Optional: pins (with plastic handle), eraser, ruler, calculator

Americans with Disabilities Act

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Office of Support Services for Students with Disabilities in Room 126 of the Student Services Building. The phone number is 845-1637.