

**GEOG 333 H (3-3) AREA III
REMOTE SENSING I**

Timetable	Lec 01	MWF	08:00-08:50	ES443	Catalogue #	4349
	Lab 01	M	14:00	ES407		
	Lab 02	T	11:00	ES407		
	Lab 03	R	14:00	ES407		

Instructor:**Dr. Mryka Hall-Beyer**

ES458

Electronic office hours:TR 8-9

In person by appointment

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mhallbey@ucalgary.ca

TA:**Ms. Bhavya Singh**

Office hours: TBA

CA:**Mr. Robin Poitras**

ES424

Office hours: TBA

Phone: 220-6023

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Course Content:

This course is an introduction to remote sensing of the earth's surface. Review of physics of light, raster data and operations and descriptive statistics of raster datasets. Object/energy interactions and the use of multispectral analysis. Introduction to digital image acquisition, manipulation and interpretation, both automated and manual. Use of moderate and high spatial and spectral resolution data. Applications. Lectures will focus on the theory of mapping and remote sensing, the labs will apply these concepts using digital data.

Lecture Topics:

Digital image acquisition: resolutions, radiometry, orbital mechanics
Georeferencing and rectification; Arithmetic operations on digital images: pixel, neighbourhood operations in single and multiband datasets; Review of Colour Theory: colour perception, additive and subtractive mixing, and colour models; Review of Electromagnetic Spectrum: atmospheric windows, scattering, emission, surface interactions; Atmospheric corrections; Review of Image Enhancements: histograms, filters, and indices; Spatial domain enhancement: texture, Fourier analysis, introduction to object-oriented analysis; Image Classification: supervised and unsupervised techniques; Indices and related techniques for information extraction: principal components, tasseled cap transforms; Thermal and radar remote sensing: particular techniques required; Introduction to Remote Sensing applications

Blackboard:

All course material is handled through Blackboard: <http://blackboard.ucalgary.ca/>. Students are automatically registered.

Required Texts Lillesand, T. M., R. W. Kieffer and J. W. Chipman. 2003: *Remote Sensing and Image Interpretation*, Fifth Ed., Wiley. ISBN: 0-471-15227-7.

Supplementary readings and /Manuals: Any material will be posted on Blackboard. Printing is not required and is at the discretion and expense of the individual student.

Grading (Weighting):

Lab Assignments	50%
Midterm Exam	17%
Lab Exam	8%
Final Exam	25% (To be scheduled by the registrar)

Note: It is not necessary to pass each course component in order to pass the course.

Prerequisite: Geography 231, or consent of the Department.

Grading System

96-100	A+	77-80	B	59-61	C-
90-95	A	71-76	B-	55-58	D+
86-89	A-	65-70	C+	50-54	D
81-85	B+	62-64	C	0-49	F

Plagiarism

Academic dishonesty is not an acceptable activity at the University of Calgary and students are **strongly advised** to read the Student Misconduct section in the University Calendar. Quite often, students are unaware of what constitutes academic dishonesty or plagiarism. The most common are 1) presenting another student's work as your own 2) presenting an author's work or ideas as your own without proper referencing and 3) using work completed for another course. This activity will not be tolerated in this course and students conducting themselves in this manner will be dealt with according to the procedures outlined in the calendar.

Posting Grades and Picking up Assignments

- Assignments are all submitted online and returned online using Blackboard.
- Tests will be handed back in class on days announced on Blackboard.
- All of their own grades will be available to students on their Blackboard gradebook, which is accessible only by password. Summary class statistics are available on the same site.
- Grades will **not** be available at Geography's main office nor from the instructor or TA.

Contact Information for Student and Faculty Representation

- SU VP Academic Phone: 220-3911 and e-mail: suvpaca@ucalgary.ca
- SU Faculty Rep. Phone: 220-3913 and e-mail: socialscirep@su.ucalgary.ca

Campus Safewalk

Campus Security, in partnership with the Students' Union, provides the Safewalk service, 24 hours a day, to any location on Campus including the LRT, parking lots, bus zones and University residences. Contact Campus Security at 220-5333 or use a help phone, and Safewalkers or a Campus Security officer will accompany you to your Campus destination.

Disability Accommodation

It is the student's responsibility to request academic accommodations. If you are a student with a documented disability who may require academic accommodation and have not registered with the Disability Resource Centre, please contact their office at 220-8237. Students who have not registered with the Disability Resource Centre are not eligible for formal academic accommodation. You are also required to discuss your needs with your instructor no later than fourteen (14) days after the start of this course.