

**GEOGRAPHY 633
H(3-3) Area III**

Research and Applications in Remote Sensing

Instructor: John Yackel	Room: ES408	Tel: 220-4892
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Official Course Description:

Review of basic and advanced principles of image analysis; advanced laboratory techniques. Integration of remote sensing with GIS; current research in remote sensing. Project organization; data sources for remote sensing.

This seminar-based course examines the breadth of current research topics and techniques in remote sensing for Geographic applications. The topics and techniques will be examined in part through instructor and student led topic-of-interest lectures, lab assignments, and student led remote sensing journal article presentations. Lab exercises, to be held in ES 415, will explore the technical aspects of some of the major topics (see below) using state-of-the-art remote sensing software (PCI Geomatica v8.2 and IDL/ENVI v3.6). Application specific software and Web based tutorials and remotely sensed datasets will also be utilized.

Prerequisite:

Consent of the Department

Supplementary Fees: (*field trips etc*). N/A

Text(s)/Readings:**Major Topics**

- Review of Remote Sensing Fundamentals
- Remote Sensing Systems, Platforms and Sensors (Past, Present and Future)
- Research Topics and Geographic Applications in Optical, Thermal, Multispectral and Hyperspectral Remote Sensing
- Microwave Remote Sensing
- Spatial Analysis and GIS Integration of Remotely Sensed Imagery

Grading:

- 2 term tests @ 15% each = 30%
- Presentation of RS topic of interest (TOI) = 15%
- Critical Review Presentation of a RS Journal Article = 15%
- Quality of questioning/discussion during TOI and Journal Presentations = 10%
- 3 Lab Assignments (5, 10 and 15% each) = 30%

There is **no** final examination for this course

Reference Material:

No one textbook is required for this course. Numerous textbooks are available for overnight sign out from the Instructor. The Internet will serve as an invaluable resource for information in this course. There are, however, several textbooks that make for good general reference material. As such, it would be advantageous for students to own or gain access to one or more of the following texts:

Lillesand, T.M. and R.W. Kiefer. 2000 (4th Edition). Remote Sensing and Image Interpretation. Wiley.

Jensen, J.R. 2000. Remote Sensing of the Environment: An Earth Resource Perspective. Prentice-Hall.

Lunetta, R.S. and C.D. Elvidge. 1998. Remote Sensing Change Detection: Environmental Monitoring Methods and Applications. Ann Arbor Press.

Late Policy: The term project is designed to be worked on individually (see attached handout for guidelines). There are no exceptions for late assignments and those handed in late will be subject to an immediate 10% penalty followed by a 10% reduction in grade for each day thereafter (weekend and holidays included). Medical related circumstances will require a note from a physician.

For additional detailed course information posted by the Instructor see Blackboard at: <http://blackboard.ucalgary.ca/>

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.

Disability Resource Centre Accommodations

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.

Re: Posting of Grades and Picking-up of Assignments

- Assignments will be handed back only in class or by the Professor at pre-arranged time(s).
- To receive your assignment back via mail, please include an appropriately sized self-addressed, stamped envelope with your assignment when handing in to the professor.
- Posting of grades will be at the discretion of each Professor and, if posted, they will be scrambled. Grades will **not** be available at Geography's main office.

Contact Information for Student and Faculty Representation

- SU VP Academic Phone: 220-3911 and e-mail: suypaca@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.