University of Victoria

GEOGRAPHY 228 - A01
UNIVERSITY OF VICTORIA
Spring Term 2024
Dr. EDUARDO LOOS

COURSE OUTLINE
Introduction to Remote Sensing

Lecture: CLE A224	**Tuesday/Wednesday 09:30-10:20**
Labs: DTB A253	**Monday 10:30-12:20**
	Tuesday 12:30-14:20
	Wednesday 10:30-12:20 and 12:30-14:20

Office Hours: Tuesday/Wednesday 10:30-11:30
Office Location: DTB B208
Contact: ediloos@uvic.ca

COURSE DESCRIPTION

The objective of this course is to provide students with a conceptual and practical introduction to Remote Sensing (RS). We will explore air photos, remote sensing image processing and data formats in a digital environment, radiometric and geometric processing of satellite images, image enhancements, and image classification.

LEARNING OUTCOMES:

Theoretical: foundations of remote sensing.
Technical: state-of-the-art software, image processing, and information extraction procedures.
Practical: remote sensing and geospatial data analysis skills, remote sensing as a science and resource management tool, technical writing, and knowledge communication.

RECOMMENDED TEXTS

1. Jensen, J.R. 2015. Introductory Digital Image Processing. A Remote Sensing Perspective. 4th Ed. Pearson Education, Inc. 656 p. **This textbook can be purchased at the UVic Bookstore. Copies are also available at the UVic Library.**

2. Mather, P.M. 2022. *Computer Processing of Remotely-Sensed Images.* 5th Ed. Wiley-Blackwell. 384 p. (available online: http://voyager.library.uvic.ca/vwebv/holdingsInfo?bibId=3122540)

EVALUATION

Component A		**Component B**	
Mid-term Exam	**25%**	Lab Assignments	**40%**
Final Exam	**35%**		

To obtain a passing grade in the course (at least a "D"), students are required to pass both components of the course.

Mid-term Exam: The Mid-term Exam will cover all material up until and including Feb 13 (see course schedule below).

Final Exam: The Final Exam will cover all the material of the course and will be held according to the UVic calendar.

GRADING SYSTEM

As per the Academic Calendar:

Grade	Grade point value	Grade scale	Description
A+ **A** **A-**	9 8 7	90-100% 85-89% 80-84%	**Exceptional**, **outstanding,** and **excellent** performance. Normally achieved by a minority of students. These grades indicate a student who is self-initiating, exceeds expectation and has an insightful grasp of the subject matter.
B+ **B** **B-**	6 5 4	77-79% 73-76% 70-72%	**Very good**, **good,** and **solid** performance. Normally achieved by the largest number of students. These grades indicate a good grasp of the subject matter or excellent grasp in one area balanced with satisfactory grasp in the other area.
C+ **C**	3 2	65-69% 60-64%	**Satisfactory**, or **minimally satisfactory**. These grades indicate a satisfactory performance and knowledge of the subject matter.
D	1	50-59%	**Marginal** Performance. A student receiving this grade demonstrated a superficial grasp of the subject matter.
F	0	0-49%	**Unsatisfactory** performance. Wrote Final Exam and completed course requirements; no supplemental.
N	0	0-49%	Did not write Final Exam or complete course requirements by the end of term or session; no supplemental.

BRIGHTSPACE

Lecture slides, announcements, and lab assignments can be accessed through Brightspace at bright.uvic.ca.

LABS

There are six lab assignments. The labs are an essential part of the course and you are expected to have basic computer skills such as file maintenance, word processing, and conducting spreadsheet operations (e.g. Microsoft Excel). Attendance is required. All labs will be held in the Geomatics Lab A251/253. Each lab will explore unique aspects of remote sensing. Analysis and presentation of data, as well as preparation of synthesis reports, are valuable skills that will be developed as part of lab assignments. Time outside of regularly scheduled labs will be required to complete assignments, so plan accordingly.

Lab Website:
http://labs.geog.uvic.ca/geog228/
user: geog228
password: meris

LAB ACCESS

The Geomatics Teaching Laboratory (DTB A251/A253) is open daily from 08:30 to 16:30. Access to the Laboratory is restricted after 16:30 for security purposes. You are encouraged to purchase a key fob, which will enable you to gain access to that facility after hours. The cost of a key fob is $10.00 and you can keep it in case you take another course that uses the lab facilities. Contact Terri Evans at tevans@uvic.ca.

GEOGRAPHY DEPARTMENT INFO

- Geography Department website: uvic.ca/socialsciences/geography/
- Geography Department Chair: geogchair@uvic.ca
- Geography Undergraduate Advising: geogadvising@uvic.ca

TENTATIVE COURSE SCHEDULE

WEEK	DATE	Topic
1	Jan 9/10	Course Introduction
2	Jan 16/17	Aerial Photos [***Lab 1***]
3	Jan 23/24	Sensors and Imagery
4	Jan 30/31	Sensors and Imagery [***Lab 2***]
5	Feb 06/07	Radiometric Correction
6	Feb 13/14	**Mid-term Exam [*Lab 3]***
7	Feb 20/21	**Reading Break – no class/lab**
8	Feb 27/28	Geometric Correction [***Lab 4***]
9	Mar 05/06	Image Enhancements [***Lab 5***]
10	Mar 12/13	Image Enhancements
11	Mar 19/20	Image Classification [***Lab 6***]
12	Mar 26/27	Image Classification
13	Apr 02/03	Future of Remote Sensing Course Review

Additional UVic important dates can be found here: uvic.ca/calendar/dates.

DISCLAIMER

The above schedule, policies, procedures, and assignments in this course are subject to change without prior notice.

POLICY ON LATE ASSIGNMENTS

Lab assignments are due at the beginning of the following week's lab. The penalty for assignments handed in late is 20% per day every day after. All lab assignments must be submitted to be allowed to sit the Final Exam. Failure to submit a lab assignment will result in a failing grade of incomplete (N). Exceptions will only be granted for medical reasons (requiring a written report from a medical practitioner stating your inability to hand the lab assignment) or extreme personal crises. Only the course instructor can grant exceptions. Please do not try to negotiate exceptions with the TA.

ACADEMIC INTEGRITY

It is every student's responsibility to be aware of the university's policies on academic integrity, including policies on **cheating, plagiarism**, **unauthorized use of an editor**, **multiple submission**, and **aiding others to cheat**.

Policy on Academic Integrity: web.uvic.ca/calendar/undergrad/info/regulations/academic-integrity.html

If you have any questions or doubts, talk to me, your course instructor. For more information, see uvic.ca/learningandteaching/cac/index.php.

Students are expected to complete assignments independently unless otherwise instructed.

ACCESSIBILITY

Students with diverse learning styles and needs are welcome in this course. In particular, if you have a documented disability or health consideration that may require accommodations, please feel free to approach me and/or the Centre for Accessible Learning (CAL) as soon as possible (uvic.ca/services/cal/). The CAL staff is available by appointment to assess specific needs, provide referrals, and arrange appropriate accommodations. The sooner you let us know your needs, the quicker we can assist you in achieving your learning goals in this course.

POSITIVITY AND SAFETY

The University of Victoria is committed to promoting, providing, and protecting a positive and safe learning and working environments for all its members.

SEXUALIZED VIOLENCE PREVENTION AND RESPONSE AT UVIC

UVic takes sexualized violence seriously and has raised the bar for what is considered acceptable behaviour. We encourage students to learn more about how the university defines sexualized violence and its overall approach by visiting uvic.ca/svp. If you or someone you know has been impacted by sexualized violence and needs information, advice, and/or support please contact the sexualized violence resource office in Equity and Human Rights (EQHR). Whether or not you have been directly impacted, if you want to take part in the important prevention work taking place on campus, you can also reach out:

Where: Sexualized violence resource office in EQHR; Sedgewick C119
Phone: 250.721.8021
Email: svpcoordinator@uvic.ca
Web: uvic.ca/svp

COURSE EXPERIENCE SURVEY (CES)

I value your feedback on this course. Towards the end of term, as in all other courses at UVic, you will have the opportunity to complete an anonymous survey regarding your learning experience (CES). The survey is vital to providing feedback to me regarding the course and my teaching, as well as to help the department improve the overall program for students in the future. The survey is accessed online and can be done on your laptop, tablet, or mobile device. I will remind you and provide you with more detailed information nearer the time but please be thinking about this important activity during the course.

NOTE:

Take care of yourself. Do your best to maintain a healthy lifestyle this semester by eating well, exercising, getting enough sleep, and taking some time to relax. This will help you achieve your goals and cope with stress. All of us benefit from support during times of struggle. You are not alone.

Counselling Services - *Counselling Services can help you make the most of your university experience. They offer free professional, confidential, inclusive support to currently registered UVic students.* uvic.ca/services/counselling/

Health Services - *University Health Services (UHS) provides a full-service primary health clinic for students and coordinates healthy student and campus initiatives.* uvic.ca/services/health/

Centre for Accessible Learning - *The CAL staff are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations* uvic.ca/services/cal/*. The sooner you let us know your needs the quicker we can assist you in achieving your learning goals in this course.*

Elders' Voices - *The Office of Indigenous Academic and Community Engagement (IACE) has the privilege of assembling a group of Elders from local communities to guide students, staff, faculty, and administration in Indigenous ways of knowing and being.*
uvic.ca/services/indigenous/students/programming/elders/index.php