University of Victoria

DEPARTMENT OF GEOGRAPHY
COURSE OUTLINE

COURSE OUTLINE
Geog 319 –Remote Sensing of the Environment – Passive Sensors

Lecture: 1:30-2:20, Tuesdays and Wednesday,
Clearihue Building A320
Office Hours: 10:00-11:00, Wednesday
Office Location: David Turpin B126
Contact: maycira@uvic.ca

We acknowledge and respect the lək̓ʷəŋən peoples on whose traditional territory the university stands and the Songhees, Esquimalt and W̱SÁNEĆ peoples whose historical relationships with the land continue to this day.

Course Objectives

This course introduces the basic principles of modern passive remote sensing. Emphasis is placed on the principles of interaction of energy with the atmosphere and Earth materials such as vegetation, soil, water, rock/minerals, and how to obtain and interpret imagery acquired by different satellites. We focus on the optical and thermal part of the spectra. This course builds on the fundamentals of remote sensing and imagery processing introduced in GEOG228.

LEARNING OUTCOMES

1. To obtain an understanding of how remote sensing can be used to extract information about the Earth's surface
2. To be able to explain how optical radiation interacts with the Earth's surface
3. To be able to find and download imagery acquired by different satellites
4. To learn modern remote sensing technology
5. To be able to explain how satellite imagery can be used for time-series analysis
6. To be able to explain how satellite imagery can be used to derive biogeophysical variables

Instructor

Maycira Costa (maycira@uvic.ca)

Office Hours

Wednesdays from 10:00-11:00
Office Location: David Turpin B126

We can set-up personal appointments if this schedule does not work for you. Please, send me an email: maycira@uvic.ca

Lectures

Tuesday from 1:30am – 2:20am
Wednesday from 1:30am – 2:20am

CLE A320

HOW TO ACCESS THE MATERIAL FOR THIS COURSE?
In **Brightspace** (use your **Netlink ID**), select **Geog 319**, **Lecture Content**, the **week**, and click on the **link**.

Lab coordinator

Terri Evans DTB A241 (tevans@uvic.ca)

Lab Hours

Friday 8:30am – 10:20am
Friday 11:30am – 1:20pm

Lab Office Hours

TBA: will post to Brightspace when this information becomes available

Late Assignment Policy

Lab assignments must be submitted on the day that they are due before the beginning of your scheduled 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 examination. 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.

Course Evaluations

Component A		Component B	
Mid-term Exam 1	**15%**	Lab assignments	**40%**
Mid-term Exam 2	**15%**		
Final Exam	**30%**		

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

Midterm examination: For the midterm examinations - see course schedule below.

Final examination: The final examination will cover all the material of the course - see course schedule below

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 examination and completed course requirements; no supplemental.
N	0	0-49%	Did not write examination or complete course requirements by the end of term or session; no supplemental.

Course Text Jensen, J.R. (2013). Remote Sensing of the Environment: An Earth Resources Perspective.

Lab Website: http://labs.geog.uvic.ca/geog319/
Username: geog319
Password: hyperspectral

Lab Computers Username: your UVic Netlink-ID
Password: your Netlink-ID password

Lecture Summaries Lecture presentations can be downloaded from the Geog 319 Brightspace page

Username: your UVic Netlink-ID

Password: your UVic Netlink-ID password

These files are intended as a supplement to the lectures. They are not intended to replace the lectures, although most of the material covered in the lectures is contained in the notes. I plan to post the pdf before the class starts.

Lab Access

The Geomatics Teaching Laboratory (Social Sciences & Math A251/A253) is open daily from 8.30 am to 4.30 pm. Access to the Laboratory is restricted after 4.30 pm for security purposes.

Academic Standards

Plagiarism will be dealt with in accordance with university policy. Please review the calendar for details. Be sure to reference all material you use. If you have any questions, please contact me.

Students with a Disability

Students with diverse learning styles and needs are welcome in this course. In particular, if you have a documented disability/health consideration that may require accommodations, please feel free to approach me and/or the Centre for Accessible Learning (CAL) as soon as possible. The CAL staff are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations https://www.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.

Please Note: You are under no obligation to disclose your disability.

Notes

1. I reserve the right to make changes to the schedule.

2. The best way to reach me is to attend the office hours.

3. If you have ANY concerns related to lectures, labs, and/or exams, please come see me as soon as possible.

Tentative Course Schedule

WEEK	DATE	Topic
1	Jan 9,10	Goals and structure of the course. Electromagnetic radiation - principles
2	Jan 16, 17	Image properties/Atmospheric attenuation
3	Jan 23, 24	Atmospheric correction
4	Jan 30, 31	Vegetation
5	Feb 6, 7	Vegetation; Invited Talk
6	Feb 13, 14	Water/MIDTERM 1 – Feb 14
7	Feb 20, 21	*Reading break – no classes*
8	Feb 27, 28	Water
9	March 5, 6	Thermal
10	March 12, 13	Thermal/ MIDTERM 2 – March 13
11	March 19, 20	Soils
12	March 26, 27	Soils/ Minerals
13	April 2, 3	Review/ FINAL EXAM – April 3

THE UNIVERSITY OF VICTORIA IS COMMITTED TO PROMOTING, PROVIDING AND PROTECTING A POSITIVE AND SAFE LEARNING AND WORKING ENVIRONMENT FOR ALL OF ITS MEMBERS.