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**COURSE OUTLINE**

**Advanced Topics in Remote Sensing**

**Lecture: Cornett Building B111 2:30pm-4:20pm Tuesdays**

**Lab: David Turpin Building A253 1:30pm-4:20pm Thursdays**

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**Office Hours: Tuesdays 13:00-14:00 or by appointment**

**Office Location: DTB B122**

**Contact: randy@uvic.ca**

**COURSE DESCRIPTION**

This course is designed to provide you with the opportunity to integrate your strong background in geography or other earth/biological sciences with remote sensing. The course is intended to be a capstone focusing on your work and integration of your previous knowledge. The focus of the course will be to work through a problem that can, at least in part, be addressed by remote sensing technology. The part of the exercise therefore will be to define a research question. This will be followed by an exploration of the methods that can be used to address this question. You will then be asked to isolate the remote sensing component of the solution to the question that you have asked. We will help you source the data, where possible, to allow you to complete this portion of the project.

The course will be a project - based course with the expectation that you execute a research project of your choosing, related for the remote sensing of various environments. The course is seminar-based and so much of the interaction will be student lead. We will have a number of presentations to broaden your outlook on the application of remote sensing data to addressing a variety of issues. You will be given the opportunity to develop a project that suits your interests, within the limits of available data. The progress of the projects will be monitored through a series of deliverables (see below). The data that you will have access to are, for the most part, new (that is you will be the first to work on them) and are collected from airborne multi sensor campaigns. Typically we will have RADAR, LiDAR, hyperspectral data and orthophotography. There are ground-based, airborne, and satellite based remote sensing datasets.

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**REQUIRED TEXT(S)**

None. For project and seminar-based you will be expected to make additional use of remote sensing texts, journal articles, other material in the university libraries, & web-based information to support your work. Readings will also be provided by your instructor.

Recommended journals include: *Canadian Journal of Remote Sensing*, *Remote Sensing of the Environment*, *Journal of Geophysical Research*, *IEEE Transactions on Geoscience and Remote Sensing*.

## EVALUATION

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Project Definition (Oral & Written)	5%
Annotated Bibliography (Written)	10%
Methodological Overview (Oral & Written)	20%
Progress Update (Oral & Written)	5%
Presentation of Final Project (Oral)	25%
Final Report (Oral & Written)	35%

There is no final exam in this course.

## GRADING SYSTEM

As per the Academic Calendar:

Grade	Grade point value	Grade scale	Description
<b>A+</b> <b>A</b> <b>A-</b>	9 8 7	90-100% 85-89% 80-84%	<b>Exceptional, outstanding and excellent</b> 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> <b>B</b> <b>B-</b>	6 5 4	77-79% 73-76% 70-72%	<b>Very good, good and solid</b> 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.
<b>C+</b> <b>C</b>	3 2	65-69% 60-64%	<b>Satisfactory, or minimally satisfactory.</b> These grades indicate a satisfactory performance and knowledge of the subject matter.
<b>D</b>	1	50-59%	<b>Marginal</b> Performance. A student receiving this grade demonstrated a superficial grasp of the subject matter.
<b>F</b>	0	0-49%	<b>Unsatisfactory</b> performance. Wrote final examination and completed course requirements; no supplemental.
<b>N</b>	0	0-49%	Did not write examination or complete course requirements by the end of term or session; no supplemental.

## GEOGRAPHY DEPARTMENT INFO

- Geography Department website: <http://geog.uvic.ca>
- Undergraduate Advisor: Dr. Phil Wakefield – [geogadvisor@uvic.ca](mailto:geogadvisor@uvic.ca)

## COURSESPACES

Lectures materials, assigned readings, and general course communications will be via CourseSpaces. You are required to come prepared for each lecture. This means you should have read and considered the assigned readings.

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## POLICY ON LATE ASSIGNMENTS

Late lab assignments are subject to significant penalties: 20% per day following the due date and time. Exceptions are not permitted except for circumstances involving medical or compassionate reasons. Written verification as proof may be requested at the discretion of the instructor.

## 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:**

<http://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 <http://www.uvic.ca/learningandteaching/students/resources/expectations/>. The instructor reserves the right to use plagiarism detection software programs to detect plagiarism in written assignments.

## 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 <https://www.uvic.ca/services/cal/>). The RCSD 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 environment for all its members.

## 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 via MyPage and can be done on your laptop, tablet, or mobile device. I will remind you and provide you with more information nearer the time but please be thinking about this important activity during the course.

## WEEKLY CALENDAR

WEEK	DATE	
1	T 8 Jan	Course Introduction
2	T 15 Jan	Remote sensing technological evolution
3	T 22 Jan	Class presentations: project definitions
4	T 29 Jan	Project scoping (instructor guided)
5	T 5 Feb	Class presentations: methodological overview
6	T 12 Feb	Remote sensing of the cryosphere

<b>7</b>	<b>T 19 Feb</b>	<b>READING BREAK, NO CLASS</b>
<b>8</b>	<b>T 26 Feb</b>	<b>Multi-sensor and multiscale remote sensing</b>
<b>9</b>	<b>T 5 Mar</b>	<b>Class presentations: project update</b>
<b>10</b>	<b>T 12 Mar</b>	<b>Project work</b>
<b>11</b>	<b>T 19 Mar</b>	<b>UAV remote sensing (1)</b>
<b>12</b>	<b>T 26 Mar</b>	<b>UAV remote sensing (2)</b>
<b>13</b>	<b>T 2 Apr</b>	<b>Class presentations: projects</b>

**DISCLAIMER**

The above schedule, policies, procedures, and assignments in this course are subject to change in the event of extenuating circumstances.