

**DEPARTMENT OF GEOGRAPHY - UNIVERSITY OF VICTORIA  
GEOGRAPHY 319 – REMOTE SENSING OF THE ENVIRONMENT**

**Instructor:** Dr. Maycira Costa

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**Class time:** Tuesdays and Wednesday: 1:30 am –2:20 am

**Location:** MAC D016

**Office hours:** Wednesday, 2:30 pm – 3:30 pm

**Lab Instructors:** Terri Evans (tevens@uvic.ca)

**Course Objectives:**

- Introduce the basic physical principles of electromagnetic radiation in the environment and its application to remote sensing.
- Introduce to modern remote sensing technology
- Introduce principles of attenuation, absorption and scattering mechanisms.
- Introduce principles of interaction of energy (optical and thermal) with the atmosphere and Earth materials such as vegetation, soil, water, rock, and urban structures.

**Course Components**

Class Meetings Class will meet on a regular basis twice a week (see schedule above). Attendance in class is recommended to understand the topics, complete lab assignments, and to pass examinations. Lecture presentations can be downloaded from UVic's CourseSpace.

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.

Labs This course includes 4 lab reports (see schedule below)

Examinations There will be three exams.

### Grading Scheme

- Exam 1: 25%
- Exam 2: 35%
- Lab report 1: 10%
- Lab report 2: 10%
- Lab report 3: 15%
- Lab report 4: 5%

### Late Assignment

Laboratory assignments are due in the scheduled days at the **beginning** of the scheduled lab time, any work handed in after that is considered late. The penalty for late assignments is 10% for the first 24 hour period, for every day after that, you will lose 25% per day. **All assignments must be submitted in order to be allowed to sit the final examination. Failure to submit an assignment will result in the grade of incomplete.** Exceptions will only be granted for medical reasons (requiring a written report from a medical practitioner stating your inability to attend class) or extreme personal crises. Exceptions can only be granted by the course instructor.

### Plagiarism

Please review the University Calendar for details. If you have any questions, please contact me. A zero tolerance approach will be used in this course.

### Cell phones

Must be off or in silent mode during lectures. Computers must be used to facilitate learning only. Recording of lectures is strictly prohibited.

### Grading Scale

A+	A	A-	B+	B	B-	C+	C	D	F
90-100%	85-89%	80-84%	77-79%	73-76%	70-72%	65-69%	60-64%	50-59%	0-49%

**Text Book (reserved in the library):** Jensen, J.R. (2011). Remote Sensing of the Environment: an Earth Resource Perspective. 2nd ed. Prentice-Hall, Inc., Upper Saddle River, New Jersey. 544 p

### 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 detailed information nearer the time but please be thinking about this important activity during the course.

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

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## Tentative Course Schedule

Schedule			
Date	Lecture/lab	Topic	Book Chap.
Jan 4	Lecture 1	Goals and structure of the course	
Jan 10	Lecture 2	Introduction	Chap 1
Jan 11	Lecture 3	Sensors/satellites/Electromagnetic radiation	Chap 7
Jan 17	Lecture 4	Atmosphere attenuation	Chap 2
Jan 18	Lecture 6	Atmosphere attenuation	Chap 2
Jan 24	Lecture 7	Atmospheric Correction	Chap 2
Jan 25	Lecture 8	Atmospheric Correction	Chap 2
Jan 31	Lecture 9	Energy-vegetation interactions	Chap 11
Feb 1	Lecture 10	Energy-vegetation interactions	Chap 11
Feb 7	Lecture 11	Energy-vegetation interactions	Chap 11
<b>Feb 13-17</b>	<b>No class</b>	<b>Reading break</b>	
Feb 21	Lecture 12	Energy-water interaction	Chap 12
<b>Feb 22</b>		<b>Exam 1</b>	
Feb 28	Lecture 13	Energy-water interaction	Chap 12
March 1	Lecture 14	Energy-water interaction	Chap 12
March 7	Lecture 15	Water – Invited talk	
March 8	Lecture 16	Energy-minerals interactions	Chap 14
March 14	Lecture 17	Energy-minerals interactions	Chap 14
March 15	Lecture 18	Energy-minerals interactions	Chap 14
March 21	Lecture 19	Geology - Invited talk	
March 22	Lecture 20	Thermal Infrared	Chap 8
March 28	Lecture 21	Thermal Infrared	Chap 8
March 29	Lecture 22	Urban	Chap 13
April 4	Lecture 23	<b>Final- review</b>	