



Course Outline

Course Title: *Introduction to Remote Sensing*

Instructor: Ji Won Suh (jiwonsuh@uvic.ca)

Lectures: DTB A110

- **Monday: 02:30 - 03:20 PM**
- **Wednesday: 02:30 - 03:20 PM**

Office Hours/Availability: **Wednesday 12:30 - 02:30PM**. Generally, I will respond to email within 48 hours. Independent office hours are available by appointment, if needed.

Office Location: DTB B306

Senior Lab Instructor: Terri Evans (tevans@uvic.ca)

Labs: DTB A249

- **B01 – Tuesday: 08:30 - 10:20 AM (Terri Evans)**
- **B02 – Tuesday: 12:30 - 02:20 PM (Terri Evans)**
- **B03 – Wednesday: 10:30 AM - 12:20 PM (Adrià Blanco Cabanillas)**
- **B04 – Thursday: 08:30 - 10:20 AM (Kali McDougall)**
- **B05 – Thursday: 2:30 PM – 4:20 PM (Adrià Blanco Cabanillas)**
- **B06 – Friday: 10:30 AM – 12:20 PM (Kali McDougall)**

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.

Course Objectives

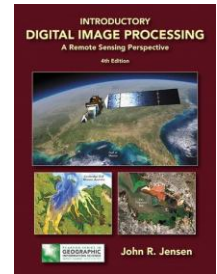
- *Theoretical:* foundations of remote sensing.
- *Technical:* state-of-the-art software, image processing, and information extraction procedures.
- *Practical:* remote sensing and geospatial data analysis skills, remote sensing as a science and resource management tool, technical writing, and knowledge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

Recommended Materials

There is no required textbook for this course, however, there is a recommended book that can be purchased at UVic bookstore. Most of the lectures will follow this book, but there are also extensive materials that are from recent research papers to keep lecture updated.

Textbook:

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.



Tentative Course Schedule

Week	Date & Topic		Lab
W1	Sep. 3		No labs
	• Course Introduction		
W2	Sep.8	Sep.10	Lab 1. Air Photo
	• Aerial Photos		
W3	Sep.15	Sep.17	Lab 1. Air Photo
	• Sensors and Imagery		
W4	Sep.22	Sep.24	Lab 2. Fundamentals of RS (Lab 1 DUE)
	• Sensors and Imagery		
W5	Sep.29	Oct.1	No labs
	• Radiometric Correction		
W6	Oct.6	Oct.8	Lab 3. Radiometric Correction (Lab 2 DUE)
	• Radiometric Correction	Midterm Exam	
W7	-	Oct.15	Lab 3. Radiometric Correction
	Thanksgiving Break	• Geometric Correction	
W8	Oct.20	Oct.22	Lab 4. Geometric Correction (Lab 3 DUE)
	• Image Enhancements		
W9	Oct.27	Oct.29	Lab 4. Geometric Correction
	• Image Enhancements		
W10	Nov.3	Nov.5	Lab 5. Enhancements & Transformations (Lab 4 DUE)
	• Image Classification		
W11	Nov.10	Nov.12	No labs
	Reading Break		
W12	Nov.17	Nov.19	Lab 6. Classification & Assessment (Lab 5 DUE)
	• Image Classification		
W13	Nov.24	Nov.26	Lab 6. Classification & Assessment
	• Remote Sensing and AI		
W14	Dec.1	Dec.3	No labs (Lab 6 DUE)
	• Future of Remote Sensing Course Review		

Course Requirements and Grading

Summary of Course Grading:

Course Components	Point
Lab Assignments	40%
Mid-term Exam	25%
Final Exam	35%
Total	100%

Lab Assignments

Lab assignments (40% of total grade). There is a total of 6 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 A249. 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. All assignments will be submitted through Brightspace. Assignments turned in late will be accepted, but will receive a grade penalty. Late activities will be graded in accordance with the Late Policy.

LAB ACCESS

The Geomatics Teaching Labs (DTB A249/A251/A253) are 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.

Mid-term Exam

Mid-term exam (25% of total grade). The mid-term exam consists of choice questions, fill-in-the-blank questions, and short-answer questions (within 1 hour). This is a closed-book exam. This exam can only be taken within the classroom, you will need a pen, a piece of white paper, and a calculator for this test.

Final Exam

Final exam: (35% of total grade). The final exam consists a few environmental questions that need remote sensing solutions.

To obtain a passing grade in the course (at least a “D”), students are required to pass both components (lecture and lab) of the course.

Grading Scale

Grade scale	Letter Grade	GPA	Grade scale	Letter Grade	GPA
90-100	A+	9	65-69	C+	3
85-89	A	8	60-64	C	2
80-84	A-	7	50-59	D	1
77-79	B+	6	<50	F	0
73-76	B	5	<50	N	0
70-72	B-	4			

Feedback and Grades

Grades for final exam will be posted with final course grades. To keep track of your performance in the course, refer to My Grades in Brightspace.

Usage of AI Tools

This course permits you to use artificial intelligence (AI) tools, such as chatbots, text generators, paraphrasers, summarizers, or solvers, to get guidance on assignments, as long as you do so in an ethical and responsible manner. Essentially, you can think of these tools as ways to help you learn but not to entirely create work for assignments like discussion board posts, essays, presentation slides, and so on. AI is more like your tutor or TA, not a replacement for your independent thinking.

This means that **YOU MUST**:

- Not use AI tools to replace your own thinking or analysis or to avoid engaging with the course content.
- Cite or explain any AI tools you use. Provide the name of the AI tool, the date of access, the URL of the interface, and the specific prompt or query you used to generate the output.
- Be transparent and honest about how you used the AI tool and how it contributed to your assignment. Explain what you learned from the AI tool, how you verified its accuracy and reliability, how you integrated its output with your own work, and how you acknowledged its limitations and biases.

Student Responsibilities and Resources

As a member of the University of Victoria student community, you are held to certain standards and academic policies. In addition, there are numerous resources available to help you succeed in your academic work. This section provides a brief overview to important standards, policies and resources.

Student Code

You are responsible for acting in accordance with the [University of Victoria's Student Conduct](#)

[and Policies](#) Review and become familiar with these expectations. In particular, make sure you have read the section that applies to you on Academic Integrity:

- [Academic Integrity in Undergraduate & Graduate Education and Research](#)

Cheating and plagiarism are taken very seriously at the University of Victoria. As a student, it is your responsibility to avoid plagiarism. If you need more information about the subject of plagiarism, use the following resources:

- [Plagiarism: How to Recognize it and How to Avoid It](#)
- [University of Victoria Libraries' Student Instruction](#) (includes research, citing and writing resources)

Copyright

Copyrighted materials within the course are only for the use of students enrolled in the course for purposes associated with this course and may not be retained or further disseminated.

Netiquette and Communication

At all times, course communication with fellow students and the instructor are to be professional and courteous. It is expected that you proofread all your written communication, including discussion posts, assignment submissions, and mail messages. If you are new to online learning or need a netiquette refresher, please look at this guide titled, [The Core Rules of Netiquette](#).

Academic Calendar

There are important dates and deadlines for each semester and session classes are offered:

- [Fall Term](#)

Students with Disabilities

Students needing special accommodations should work with the University's [Center for Accessible Learning \(CAL\)](#). If your request for accommodation is approved, CAL will send an accommodation letter directly to your instructor(s) so that special arrangements can be made. (Note: Student requests for accommodation must be filed each term.)

Policy against Discrimination, Harassment and Inappropriate Romantic Relationships

The University is committed to maintaining an environment free of discrimination or discriminatory harassment directed toward any person or group within its community – students, employees, or visitors. Academic and professional excellence can flourish only when each member of our community is assured an atmosphere of mutual respect. All members of the University community are responsible for the maintenance of an academic and work environment in which people are free to learn and work without fear of discrimination or discriminatory harassment. In addition, inappropriate Romantic relationships can undermine the University's mission when those in positions of authority abuse or appear to abuse their authority. To that end, and in accordance with federal and state law, the University prohibits

discrimination and discriminatory harassment, as well as inappropriate Romantic relationships, and such behavior will be met with appropriate disciplinary action, up to and including dismissal from the University. Refer to the [Policy against Discrimination, Harassment and Inappropriate Romantic Relationships](#) for more information.

Sexual Assault Reporting Policy

To protect the campus community, all non-confidential University employees (including faculty) are required to report assaults they witness or are told about to the [Office of Equity and Human Rights](#) under the [Sexualized Violence Prevention and Response Policy](#). The University takes all reports with the utmost seriousness. Please be aware that while the information you provide will remain private, it will not be confidential and will be shared with University officials who can help. Refer to the [Sexual Assault Reporting Policy](#) for more information.

Evaluation of the Course

Students will be provided an opportunity to evaluate instruction in this course using the Student Experience of Learning Survey, which are administered by Learning and [Teaching Support and Innovation \(LTSI\)](#).

Additional informal formative surveys may also be administered within the course as an optional evaluation tool.