

GEOG 5225 – Geographic Applications of Remote Sensing

Instructor

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Course Website

All course materials, including course schedule, announcements, lectures, lab assignments, quizzes, exam, and other course information, will be posted on Carmen (<https://carmen.osu.edu>).

Course Description

This course provides an introduction to the fundamentals of remote sensing and its geographic applications. Lectures will focus on basic concepts and techniques in remote sensing data acquisition and analysis. Examples from a variety of topical areas will be used to illustrate how the information derived from remotely sensed data can be used in geographic studies. Computer laboratory exercises are designed to help students to gain hands-on experiences on the digital processing of remotely sensed data. Students are expected to complete a project that applies remote sensing techniques to solve a real-world problem.

Required Textbook

Jensen, John R., 2015, *Introductory Digital Image Processing: A Remote Sensing Perspective*, Prentice Hall: Upper Saddle River, NJ, 4th ed., ISBN 9780134058160.

Optional Reference

Jensen, John R., 2007, *Remote Sensing of the Environment: An Earth Resource Perspective*, Prentice Hall: Upper Saddle River, NJ, 2nd ed., ISBN 9780131889507.

Mode of Delivery

This course is a hybrid course with asynchronous online lectures and in-person labs in Derby 135. Course materials are divided into **weekly modules** that are released ahead of

time. Students are expected to keep pace with weekly deadlines but may schedule their efforts freely within that time frame.

Course Evaluation

Final course grades will be based on the following weighting of assessment components:

- **Quizzes (15%):** There will be multiple quizzes on Carmen throughout the semester. Students must take the quizzes to receive credits. No make-up quizzes will be given unless legitimate documents for medical or personal emergency are presented.
- **Laboratory exercises (40%):** The laboratory exercises will require the use of ERDAS Imagine and Google Earth Engine. Lab assignments should be turned in on time. Late submissions will be penalized by 5% (of the total possible score) per day late, up to 30% (of the total possible score).
- **Examination (15%):** There will be an examination on Carmen in the second half of the semester. Students must take the exam to receive credits. No make-up exam will be given unless legitimate documents for medical or personal emergency are presented.
- **Video presentation (10%):** Students are required to submit a recorded video presentation to summarize remote sensing applications based on peer-reviewed journal papers.
- **Final project (20%):** Students are required to complete a final project that applies remote sensing techniques to solve a real-world problem of their own interest. More detailed information on the final project will be posted on Carmen.

Final course grades will be assigned based on the following grading scale:

A: 93–100 | **A-:** 90–92 | **B+:** 87–89 | **B:** 83–86 | **B-:** 80–82 | **C+:** 77–79

C: 73–76 | **C-:** 70–72 | **D+:** 67–69 | **D:** 60–66 | **F:** below 60

Academic Misconduct

Please help maintain an academic environment of mutual respect and fair treatment. It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term academic misconduct includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). Academic misconduct will not be tolerated and will be dealt with procedurally in accordance with university policy, which is available at <http://oaa.osu.edu/coam.html>. For additional information, see the Code of Student Conduct at <http://studentlife.osu.edu/csc/>.

Students with Disabilities

The University strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including mental health, chronic or temporary medical conditions), please let me know immediately so that

we can privately discuss options. You are also welcome to register with Student Life Disability Services to establish reasonable accommodations. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. **SLDS contact information:** slds@osu.edu; 614-292-3307; slds.osu.edu; 098 Baker Hall, 113 W. 12th Avenue.

Statement on Title IX

All students and employees at Ohio State have the right to work and learn in an environment free from harassment and discrimination based on sex or gender, and the university can arrange interim measures, provide support resources, and explain investigation options, including referral to confidential resources.

If you or someone you know has been harassed or discriminated against based on your sex or gender, including sexual harassment, sexual assault, relationship violence, stalking, or sexual exploitation, you may find information about your rights and options at titleix.osu.edu or by contacting the Ohio State Title IX Coordinator at titleix@osu.edu. Title IX is part of the Office of Institutional Equity (OIE) at Ohio State, which responds to all bias-motivated incidents of harassment and discrimination, such as race, religion, national origin and disability. For more information on OIE, visit equity.osu.edu or email equity@osu.edu.

Statement on Diversity

The Ohio State University affirms the importance and value of diversity in the student body. Our programs and curricula reflect our multicultural society and global economy and seek to provide opportunities for students to learn more about persons who are different from them. We are committed to maintaining a community that recognizes and values the inherent worth and dignity of every person; fosters sensitivity, understanding, and mutual respect among each member of our community; and encourages each individual to strive to reach his or her own potential. Discrimination against any individual based upon protected status, which is defined as age, color, disability, gender identity or expression, national origin, race, religion, sex, sexual orientation, or veteran status, is prohibited.