



University of Maryland, College Park
GEOG579B: Introduction to Remote Sensing
Summer Session 2016 (July 13th – August 19th)

TENTATIVE SYLLABUS

Last updated on June 24, 2016

Class Hours: Wednesdays, 1730 - 2000.

Lab Hours: Thursdays, 1730 – 1830.

Lecture Location: Online (<http://elms.umd.edu>), **Optional:** LeFrak Rm 2166

Lab: Online, OR LeFrak Rm 1138 Lab

Instructor: Kristofer Lasko
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GENERAL INFORMATION

Course Overview: This course is intended to provide an introduction to remote sensing of the environment, with particular attention to the role of electromagnetic energy and specifically focusing on systems that are used to monitor earth's biosphere including land surfaces, atmosphere and the ocean. The course covers the basic principles of image interpretation, remote sensing theory, and digital image analysis in relation to optical, thermal, and microwave remote sensing systems. Examples of remote sensing applications will be presented along with methods for obtaining quantitative information from remote sensing imagery. The lab sessions will focus on familiarizing yourself with a common remote sensing software application including an introduction of techniques used in processing or analyses of remote sensing data (e.g., digital image processing), with an emphasis on the study of spatial and environmental relationships.

The course is designed to prepare you for more advanced remote sensing courses. Accordingly, the course will be a combination of labs, quizzes, presentations, and participation. The main objective is for you to have a sound understanding of basic remote sensing theory and current applications. While taking the course I encourage you to think of ways remote sensing can be used to address a topic of interest to you –you will have the opportunity to conduct course projects in future MPSGIS courses.

Online Course Notice: The course will be delivered online, but students will have the option to attend class in person as well. *If attending in person, please still bring the laptop for connecting to the online classroom.* Instructions for access to the online classroom will be provided on ELMS or through email. The material for this course will be provided online through UMCP's Enterprise Learning Management System (<http://elms.umd.edu>). The log-in information is the same as for your university e-mail. For this class and the rest of the MPSGIS courses you will need a microphone and webcam. Questions regarding how to use ELMS should be directed to UMD office of Information Technology Help Desk. Lecture slides may be posted to ELMS, however do note that quiz material will come from a combination of lecture, readings, and lab materials as well as information mentioned during lecture or lab that may not be on the slides. Attendance and participation during the designated class time is expected.

Target Audience: This course is a pre-requisite for the MPS in GIS program for those with little or no remote sensing background. It is a precursor to the 600-level remote sensing courses. Advanced Special graduate students outside of the Geography department are welcome to register.

Prerequisites: This course does not have any prerequisites, however you should have taken an introductory GIS course.

Course Structure: Typically each class will begin with announcements, followed by student questions, to be followed by the lecture topic for that day. A lab section may be conducted during the latter part of each class.

Instructor Communication: I usually respond to emails during business hours very quickly. However, sometimes I am very busy. Please allow 24 hours (excluding weekends and holidays) for a response from the instructor before sending a follow-up email. In addition, when sending an email please include **GEOG579B** in your subject heading. Please read the syllabus before sending an email regarding basic course questions.

COURSE MATERIALS

Required Textbook:

- *Jensen, J.R., Remote Sensing of the Environment - An Earth Resource Perspective, 592 pp., Prentice Hall, Upper Saddle River, NJ, 2007. ISBN: 0131889508, Second Edition*

Other required and recommended readings for this course will be available for download on the ELMS webpage.

Required Materials:

- Headset/Microphone and webcam for online portions of class (also need for future MPSGIS courses)
- Laptop or desktop computer with Windows operating system installed. Mac OS may be ok, but I may not be able to offer technical support with regard to remote connection to the lab to access the ENVI software. Contact geoghelp@geog.umd.edu for assistance on the above.

Computer Labs: There are several on-campus computer labs available to you.

Operator	Locations	Hours	More Information
BSOS	Lefrak Rooms 1136 and 1138	24 hours (GEOG grad students only)	http://geog.umd.edu/content/lab-conduct-policy
Library	McKeldin	M-Th 8am – 8pm F 8am – 5pm Sat & Sun 1 – 5pm	http://www.lib.umd.edu/gov-info-gis/about-us/home

The BSOS computer lab has ENVI, ArcGIS and other basic software installed. Whether accessing the software for the labs remotely on your own computer or directly in the lab: *regularly save your lab data to your local machine or a USB drive as the computers will occasionally crash.*

You may access the lab virtual machines remotely (e.g. from home) using the instructions posted on ELMS. You can contact geoghelp@geog.umd.edu for technical assistance regarding virtual lab connection to access ENVI. I suggest you to try connecting to the lab prior to the start of the course, in case you have technical difficulties.

The geography labs are closed on late evenings and weekends unless you have an approved geography graduate student ID. Visit the Mitchell building during regular business hours to obtain a student ID. You will also have other perks such as University gym access, shuttle system access, etc. Contact Kristen Bergery (kbergery@umd.edu) for the 24/7 lab access using your student ID.

Note on course material copyright: All course material copyrights belong to the University of Maryland or the instructor unless otherwise noted. Materials, including lectures, assignments, quizzes and exams, are not to be distributed outside of the class without written instructor permission.

GRADING

The grading for this course will be based on:

- 3 – 4 Remote sensing Labs (~50% of grade total)
- 2 Quizzes (~20% of grade)
- Remote Sensing Topic Presentation (~15% of grade total)
- Journal article presentation (~10% of grade)
- Class participation (~5% of grade)

I may alter the grade percentage for each topic as the course is conducted, but will let students know of any changes.

The two quizzes will not be cumulative. The general topics covered will be provided in the course schedule. The format may include multiple choice, short answer, and written response. The quizzes will require less than 1 hour to complete.

The laboratory assignments will count for 50% of the student's grade. Although the number of questions on each laboratory assignment may differ, each lab will be worth the same amount. Each laboratory assignment will be **due at 5:00 p.m. on the day of the next lecture unless otherwise noted through ELMS or email (see course schedule for details)**.

The journal article presentation will require you to read and analyze a seminal remote sensing peer-reviewed journal article in a topical area of your choice (with instructor approval) or an article assigned by the instructor. Selection of the articles needs to be approved by the instructor at least 1 week before the presentation date. You are expected to give a presentation on that paper online in class using the adobe connect system (PowerPoint presentation, with audio and video). The presentation will be followed by a discussion during which students are expected to ask questions and to engage. Each student will be required to read every paper before the class during which it is presented. The presentation time will be limited to approximately 10 minutes and Q&A will be limited to 4 minutes (we may adjust the timings based on the course enrollment). Students will be graded both as presenters and as participants in discussion.

For the remote sensing topic presentation, the student will select a topic from a list provided by the instructor on a first-come, first-served basis. The presentation will include a brief 10-minute PowerPoint presentation online for the given topic. You should research about the topic in the textbook, online, UMD library, peer-reviewed journals, etc. The presentation will give you a chance to go more in-depth in a topic of your interest. Some of the examples might include: thermal remote sensing, selection of a remote sensing application (land cover change, wildfires, forest cover loss, crop monitoring, etc.), UAV remote sensing, photogrammetry, atmospheric remote sensing, crowd-sourced remote sensing/GIS and much more.

Attendance: Attendance is mandatory. This class is fast-paced and it is essential to attend every lecture and lab. However, if you need to miss a class please provide advance notice and I will try to accommodate for you as best as I can. *Please don't hesitate to contact me with any possible hardships you may have or anticipate having.* As this is a graduate level course and part-time program, I realize you may have other commitments on occasion and may need an extension for a homework assignment.

Final Exam: *There is no final exam.* However, we will have 2 quizzes. Since this is an introductory course we will have a variety of different grading methods (quizzes, presentations, labs, participation).

Honor Code: The University has a nationally recognized Honor Code, administered by the Student Honor Council. The Student Honor Council proposed and the University Senate approved an Honor Pledge. The University of Maryland Honor Pledge reads: "*I pledge on my honor that I have not given or received any unauthorized assistance on this assignment/examination.*" Any instance of academic dishonesty may be referred to the University, college, or department for further action which could result in a failing grade, expulsion, or another disciplinary action. If you are unsure if any action violates the honor code, please contact the instructor.

Academic Integrity: The University of Maryland, College Park has a nationally recognized Code of Academic Integrity, administered by the Student Honor Council. This Code sets standards for academic integrity at Maryland for all undergraduate and graduate students. As a student you are responsible for upholding these standards for this course. It is very important for you to be aware of the consequences of cheating, fabrication, facilitation, and plagiarism. While in-class collaboration on assignments is permissible, it is expected that students will not submit near-identical lab assignments. For more information on the Code of Academic Integrity or the Student Honor Council, please visit <http://shc.umd.edu/SHC/Default.aspx>.

Grading Scale:

Letter Grade	Range (%)	Letter Grade	Range (%)
A+	100 – 97	C+	79.99 – 77
A	96.99 – 93	C	76.99 – 73
A-	92.99 – 90	C-	72.99 – 70
B+	89.99 – 87	D+	69.99 – 67
B	86.99 - 83	D	66.99 – 63
B-	82.99 - 80	D-	62.99 – 60
		F	< 59.99

Due Dates and Late Policy: Lab due dates are explicitly stated in class and on the course schedule. Without an approved excuse, lab assignments will be accepted after the due date for a 5% reduction per day on the assignment (up to 5 days late, after which a grade of 0 will be assigned). If you are ill, physically indisposed, or otherwise have a conflict and cannot submit your assignment on time, you must notify the instructor before the due date. Any non-verifiable excuses may be denied, however I will be as understanding and empathetic as possible considering our tight course schedule. Please do not hesitate to contact me if you have trouble submitting assignments on time and we will work something out. It is more important that you do high quality work turned in late, than poor quality work turned in on time.

Making up quizzes and presentations require advance notice prior to the day of the course. Quizzes may not be submitted late unless there is an approved excuse submitted prior to the lecture time. No make-up quizzes will be provided without pre-approval from the instructor prior to the day of the quiz. Students should do their best to be in class (online or in person) during the days of presentations as it is important for students to engage with each other.

ADMINISTRATIVE

Student Conduct: Students are expected to treat each other and the instructor in a professional manner. Disruptive behavior of any kind will not be tolerated. Students who are unable to show civility with one another, the teaching assistants, or the instructor will be referred to the Office of Student Conduct or to Campus Police. You are expected to adhere to the University of Maryland Code of Student Conduct.

Disabilities: If you have a documented disability and wish to discuss academic accommodations, please speak to the instructor on or before the first day of class. We will make every effort to accommodate students who are registered with the Disability Support Services (DSS) Office and who provide us with a University of Maryland DSS Accommodation form which has been updated by the second week of class.

Religious Observance: Written requests must be made for turning in a lab assignment late and requesting a make-up exam/quiz/presentation because of a specific religious observance **prior to the end of the first week of class (July 16th 2016)**. Please refer to the Online Graduate Catalog Policy on Religious Observance

*****This Syllabus is tentative and subject to change*****