GEOG 4563 & 5563 - Earth Analytics: Spring 2017 Syllabus

Lead Instructor

Dr. Leah A Wasser Office. S346 SEEC Ph. 303.735.4637 leah.wasser@colorado.edu

Where & When

- **Teaching Assistant:** Sepideh Dadashi
- **Time:** Wednesday 3:00 pm - 5:50 pm
- **Location:** SEEC S125

Office Hours

- Mondays: 1:00pm-3:00pm, Leah Wasser SEEC Earth Lab - S346
- Tuesdays: 1:00pm - 3:00pm, Sepideh Dadashi, SEEC Earth Lab main space S348

About the Course

This advanced, multidisciplinary course will address major questions in Earth science and teach students to use the analytical tools necessary to undertake exploration of 'big scientific data'. This course is designed for upper level (junior / senior level) undergraduate students and graduate students.

Throughout the course we will use computationally intensive techniques to address scientific questionsWe will use a suite of different types of publicly available data including:

- Satellite and airborne lidar and spectral remote sensing data,
- Data collected using distributed *in situ* (on the ground) sensor networks
- Social media data, and
- Demographic (census) data.

Learning Outcomes

At the end of this course you will be able to:

- Open and visualize various types of data using the `R` programming language.
- Navigate and use the `RStudio` environment for `R`.
- Describe and apply several approaches to efficient computing including parallelization.

Grading

Grading will be based on the following course assignments. Late assignments will receive a 10% deduction per 24-hour period after the due date/time.

Assignment	Percent of Credit
Exercises	25%
Mid Term Presentation	20%

Assignment	Percent of Credit
Final Group Presentation	20%
Final Project Submission	20%
Class Participation	15%

Late assignments

Late assignments will not be accepted in this course. If there are extenuating / university approved circumstances university-approved activity, illness, injury, family emergency, or religious observance that prevents you from completing an assignment on time, please get in touch with the instructor or the course TA as soon as possible.

Attendance

Attendance is required for all class sessions. In the event that you must miss a class due to a university-approved activity, illness, injury, family emergency, or religious observance, you must notify the course instructor, preferably **before** the day of class, and the absence will be excused. Students will be given a reasonable amount of time to make up the work based on the type of assignment missed and the reason for their absence. Unexcused absences will affect the student's grade because regular participation is a requirement of this course.

Readings

Readings are posted every week along with the homework assignment for that week. The material for each week will be posted no later than the Tuesday before the next weeks' class. If you are looking ahead to upcoming weeks, please note that, readings are subject to change.