



Geography (GEOG) 149: Digital Earth Lab (1 Credit Hour)

Fall 2018



Instructor: Aaron E. Maxwell, PhD, GISP

Class Time: W 4-4:50; W 5-5:50;
Th 4-4:50; Th 5-5:50

Class Location: Brooks Hall 419

Office: Brooks Hall 141

Hours: MW 12:30-2:20 PM

Phone: (304) 293-2026

E-Mail: Aaron.Maxwell@mail.wvu.edu
maxwellgeospatial@gmail.com

Concurrent: This class must be taken along with Geography 150: Digital Earth.

Professor Maxwell's Website:

<http://maxwellae.wix.com/maxwell-geospatial>.

Teaching Assistants' Information:

Name: Brittany Casey

e-mail: bnc0015@mix.wvu.edu

Office: Brooks Hall Lab 161

Course Rationale:

This class provides a computer laboratory complement to Digital Earth, Geography 150. Because the two courses are complementary, they must be taken concurrently. These labs will reinforce material presented in the Geography 150 lecture component of Digital Earth by providing you with an opportunity to work with those concepts in a practical setting. The objectives of this course are to introduce you to GIS software and assist your understanding of key concepts from Geography 150.

Recent advances in technology and data availability have increased our knowledge about the world. This class surveys key concepts of geospatial technologies (GIS, remote sensing, spatial analysis) in the context of social and environmental change. The lab component (Geography 149) explores geographic information systems software and basic principles of mapping and analysis of geographic information.

GEC Fulfillment:

GEC Req. 2B in combination with Geography 150

Course Outcomes:

After completing this course the student will be able to:

1. work with, manipulate, create, alter, and analyze geospatial data using GIS software.
2. use GIS software to examine a problem that interests you, such as discovering and interpreting disease patterns, identifying wildlife habitat areas, and locating areas for potential economic development.
3. create new data and maps with GIS software.

4. master software by using the help documentation and electronic users' manuals to find analysis and mapping functions in any GIS software package.

Course Structure/Philosophy

I firmly believe that students learn via engagement and by doing. As a result, I believe that lab components are very important. I will do my best to help you learn; however, it is imperative that you take ownership of your own education. Come see me if you need help.

Textbook:

Required Text

There is a lab manual, available at the WVU bookstore. Please bring it to the first week of lab (and all other weeks, for that matter). Note that this is the first semester that this lab manual is being used.

Grading:

Grading for this course will consist of eight completed lab assignments as follows:

Lab 1: Introduction to ArcMap: 40 Points
Lab 2: Working with Projections: 75 Points
Lab 3: Introduction to Symbology and Cartographic Design: 85 Points
Lab 4: Use of Imagery in ArcGIS, Creating Spatial Datasets: 60 Points
Lab 5: Introduction to Spatial Analysis: 80 Points
Lab 6: Symbolizing Image Data: 30 Points
Lab 7: Viewshed Analysis and Intro to 3D GIS: 30 Points
Lab 8: Intermediate Cartography in ArcGIS: 120 Points

Total: 520 Points

Grade Scale:

90%-100%	A	> 468 Points
80%-90%	B	> 416 Points
70%-80%	C	> 364 Points
60%-70%	D	> 312 Points
0%-60%	F	< 312 Points

Due Dates for Labs:

Labs must be turned in via an eCampus submission or as a paper submission. Your lab instructor will tell you how to turn in the lab. The due dates and times are in the schedule below. Labs will not be accepted after this time and a grade of zero will be recorded.

Cellphone, Tablets, and Computers:

Cell phone use of any kind will not be tolerated. I reserve the right to take your phone or remove you from the class permanently. If you are removed from the class, you will receive a zero in the course.

If I see your phone out during an assessment, I will assume you are cheating and you will receive a zero on the assessment.

Disruption:

Talking over the instructor or other students will not be tolerated. I reserve the right to remove you from the class permanently. If you are removed from the class, you will receive a zero in the course.

Tardiness:

Class will begin promptly, so please show up on time. If you are more than 10 minutes late for an exam or final, it will not be completed and you will receive a grade of zero on the examination.

Attendance Policy:

At West Virginia University, class attendance contributes significantly to academic success. Students who attend classes regularly tend to earn higher grades and have higher passing rates in courses. Excessive absences may jeopardize students' grades or even their ability to continue in their courses. There is a strong correlation between regular class attendance and academic success. Faculty are strongly encouraged to require attendance in all 100-level classes.

<http://catalog.wvu.edu/undergraduate/enrollmentandregistration/#enrollmenttext>

If you expect assistance with the lab assignments, you need to attend the lab sessions.

Final Time:

Final times cannot be rescheduled. You are expected to take the final at the time specified.

Feedback Response Time

I generally reply to email and discussion posts within 48 hours, except during holidays. Often I will reply much more quickly, but you should not count on a same-day reply. Please plan accordingly so that you don't miss deadlines! I generally return assignments within one week of when a discussion or assignment closes. If you would like to get help on an assignment ahead of the deadline, please email me! I'm happy to give preliminary feedback or answer questions.

Academic Integrity:

The integrity of the classes offered by any academic institution solidifies the foundation of its mission and cannot be sacrificed to expediency, ignorance, or blatant fraud. Therefore, I will enforce rigorous standards of academic integrity in all aspects and assignments of this course. For the detailed policy of West Virginia

University regarding the definitions of acts considered to fall under academic dishonesty and possible ensuing sanctions, please see the West Virginia University Academic Catalog at <http://catalog.wvu.edu/undergraduate/coursecreditstermsclassification/#academicintegritytext>. Should you have any questions about possibly improper research citations or references, or any other activity that may be interpreted as an attempt at academic dishonesty, please see me before the assignment is due to discuss the matter.

Cheating will result in a zero on the assignment.

If I see your phone out during an assessment (e.g. tests or quizzes), I will assume you are cheating and you will receive a zero on the assessment.

Adverse Weather Commitment:

In the event of inclement or threatening weather, everyone should use his or her best judgment regarding travel to and from campus. Safety should be the main concern. If you cannot get to class because of adverse weather conditions, you should contact me as soon as possible. We can work something out.

Similarly, if I am unable to reach our class location, I will notify you of any cancellation or change as soon as possible (by 8:00 AM the morning of class or earlier), using MIX and eCampus to prevent you from embarking on any unnecessary travel. If you cannot get to class because of weather conditions, I will make allowances relative to required attendance policies, as well as any scheduled tests, quizzes, or other assessments.

Inclusivity Statement:

The West Virginia University community is committed to creating and fostering a positive learning and working environment based on open communication, mutual respect, and inclusion.

If you are a person with a disability and anticipate needing any type of accommodation in order to participate in this class, please advise me and make appropriate arrangements with the Office of Accessibility Services (293-6700). For more information on West Virginia University's Diversity, Equity, and Inclusion initiatives, please see <http://diversity.wvu.edu>.

Incomplete Grades

Students who want to be considered for an Incomplete must apply to their instructor prior to the end of the term. If the instructor agrees, the instructor and the student must negotiate the conditions under which the grade of I will be changed to a letter grade and sign a contract. The date to submit the incomplete work should not be set beyond the last day of class of the following semester. If the student does not complete the terms of contract then the instructor should submit a grade of F. All incomplete contracts must be filed with the department and Dean's Office. See the policy at:

<http://catalog.wvu.edu/undergraduate/enrollmentandregistration/#gradestext>

Sexual Misconduct Statement:

West Virginia University (WVU) does not tolerate sexual misconduct, including harassment, stalking, sexual assault, sexual exploitation, or relationship violence [BOG Policy 44]. It is important for you to know that there are resources available if you or someone you know needs assistance. You may speak to a member of

university administration, faculty, or staff, but keep in mind that they have an obligation to report the incident to the Title IX Coordinator. If you want to speak to someone who is permitted to keep your disclosure confidential, please seek assistance from the Carruth Center, 304-293-9355 or 304-293-4431 (24-hour hotline), and locally within the community at the Rape and Domestic Violence Information Center (RDVIC), 304-292-5100 or 304-292-4431 (24-hour hotline).

For students at WVU-Tech, contact the Women's Resource Center at 304-255-1585 (toll free at 1-888-825-7836) or REACH at 304-340-3676. For students at Potomac State, contact the PSC Psychological Services Office at 304-788-6976, and locally in Keyser, the Family Crisis Center, 304-788-6061 or 1-800-698-1240 (24-hour hotline).

For more information please consult WVU policies at <http://titleix.wvu.edu>.

Student Evaluation of Instruction

Effective teaching is a primary mission of West Virginia University. Student evaluation of instruction provides the university and the instructor with feedback about your experiences in the course for review and course improvement. Your participation in the evaluation of course instruction is both strongly encouraged and highly valued. Results are strictly confidential, anonymous, and not available to the instructor until after final grades are released by Admissions and Records. Information about how you can complete this evaluation will be provided later.

Sale of Course Material Statement:

All course materials, including lectures, class notes, quizzes, exams, handouts, presentations, and other materials provided to students for this course are protected intellectual property. As such, the unauthorized purchase or sale of these materials may result in disciplinary sanctions under the Campus Student Code.

Tips for Succeeding in this Course

1. Get help early on if you are having difficulties. Come to my office if you need to. If my office hours don't work for you, we can work something out.
2. Get to know others in the class. Help each other out.
3. I often set class time aside for review prior to an exam. Make the most of these review sessions.
4. If I give bonus opportunities, take advantage of them.
5. If I give study guides, take advantage of them.
6. If a book is required, get the book and us it.
7. Your goal should not be to pass; shoot for an A.
8. If I give a writing assignment it will have a rubric attached. Use this rubric because this is what I'm looking for.
9. If I give a writing assignment, don't hesitate to get help.
10. Be open-minded. I understand that this class may not be within your subject of interest, but that doesn't mean you can't take interest. It's easier to learn something you have an interest in.

Week	Topic	Reading	Tests/Assignments	Labs	
August 15-17	Introduction to Geospatial Technologies	Shellito Chapter 1			
August 20-24	Datums and Projections	Shellito Chapter 2	Assignment 1	Exercise 1: Introduction to ArcGIS Pro	
August 27-31	GPS	Shellito Chapter 4	Assignment 2	Exercise 2: Introduction to Projections	Lab 1 due by beginning of your scheduled lab time
Sept. 3-7	Digital Cartography	Shellito Chapter 7	Exam 1 Wednesday Sept. 5th	Exercise 3: Symbology and Cartographic Design	Lab 2 due by beginning of your scheduled lab time
Sept. 10-14	Digital Cartography	Shellito Chapter 7		Exercise 3: Symbology and Cartographic Design	
Sept. 17-21	Geospatial Data	Shellito Chapter 5		Exercise 3: Symbology and Cartographic Design	
Sept. 24-28	Digitizing	Shellito Chapter 5		Exercise 4: Digitizing and Drawing	Lab 3 due by beginning of your scheduled lab time
Oct. 1-5	Spatial Analysis	Shellito Chapter 6	Exam 2 Wednesday Oct. 3rd	Exercise 4: Digitizing and Drawing	
Oct. 8-12	Spatial Analysis	Shellito Chapter 6	Assignment 3	Exercise 5: Introduction to Spatial Analysis	Lab 4 due by beginning of your scheduled lab time
Oct. 15-19	Introduction to Remote Sensing	Shellito Chapter 9		Exercise 5: Introduction to Spatial Analysis	
Oct. 22-26	Remote Sensing Concepts	Shellito Chapter 10		Exercise 5: Introduction to Spatial Analysis	Lab 5 Part 1 due by beginning of your scheduled lab time
Oct. 29-Nov. 2	Remote Sensing From Space	Shellito Chapter 11-12	Assignment 4	Exercise 6: Sybmolizing Image Data	Lab 5 Part 2 due by beginning of your scheduled lab time
Nov. 5-9	Digital Terrains	Shellito Chapter 13	Exam 3 Wednesday Nov. 7th	Exercise 7: Viewsheds and 3D GIS	Lab 6 due by beginning of your scheduled lab time
Nov. 12-16	3D GIS	Shellito Chapter 14	Assignment 5	Exercise 8: Intermediate Cartographic Design	Lab 7 due by beginning of your scheduled lab time
Nov. 19-23	Fall Break				
Nov. 26-30	Web GIS	Shellito Chapter 15	Assignment 6	Exercise 8: Intermediate Cartographic Design	
Dec. 3-7	Legal Considerations			Exercise 8: Intermediate Cartographic Design	Lab 8 due by end of your last lab session
Dec. 10-14	Exam 4, Monday December 10 11 Am – 1 PM				

Note: This schedule is subject to change based on the needs and pacing of the class.

Important Academic Dates

Friday, August 10—New Student Orientation

Monday, August 13—General Registration

Wednesday, August 15—On Campus First Day of Classes

Tuesday, August 21—Last day to Register, Add New Courses, Make Section Changes, Change Pass/Fail and Audit

Monday, September 3—Labor Day Recess: University Closed

Thursday, October 4 by noon—Mid-Semester Reports Due

Friday, October 12—Fall Break

Friday, October 13—Textbook Selection Deadline (for Spring 2019)

Tuesday, October 23—Last Day to Drop a Class

Tuesday, November 6—General Election (no classes)

Saturday, November 17 thru Sunday, November 25—Fall Recess

Wednesday, December 5—Last Day to Withdraw from the University

Thursday, December 6—Last Day of Classes

Friday, December 7—Prep Day for Finals

Monday, December 10 thru Friday December 14—Final Exam Week

Saturday, December 15—Commencement

Saturday, December 15—Winter Recess Begins