The Digital Earth GIS2002 – An Introduction to Geospatial Techniques

Instructor:

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Email is listed, but communication through the canvas email system is preferred.

Office Hours: Fridays -- 1:00PM - 3:00PM

However, you do not have to wait until then. If you encounter any issues with the assignments, please feel free to reach out and schedule a Zoom meeting.

1 Course Overview

This course provides an introduction to how the earth surface is visualized, explored, and analyzed in digital formats. It provides a systematic introduction of map-based analytical approaches to understanding the environment and human society. The topics cover the basics of cartography (map making and reading), satellite image interpretation, geographic information systems (GIS), and map-based reasoning and communication of spatial data. Through labs and computer exercises, students will learn fundamental concepts of digital geographic data to understand vast quantities of geographic information in our ever-changing world.

2 Course Objectives

- Explain the basic concepts and principles in processing digital geographic data.
- Collect, map, and analyze spatial data as a mechanism to understand our physical and social world.
- Think spatially and develop problem-solving skills with critical understanding of geographic context.
- Demonstrate the ability to reason and communicate using map-based technologies such as online maps, Google Earth Pro, ArcGIS Pro, and QGIS.

3 Weekly Course Schedule

Week 1: Module 1 (A Geospatial Word)

Week 2: Module 2 (Where in the Geospatial World are You?)

Week 3: Module 3 (Getting Your Data to Match the Map)

Week 4: Module 4 (Location and GPS)

Week 5: Module 5 (Geospatial Data and GIS)

Week 6: Module 6 (GIS for Spatial Analysis)

Week 7: Module 7 (Using GIS to Make Maps)

Week 8: Module 8 (Getting there quicker with Geospatial Technology)

Week 9: Module 9 (Remote Sensing)

Week 10: Module 10 (How Remote Sensing Works)

Week 11: Module 11 (Images From Space)

Week 12: Module 12 (Earth's Climate and Environment From Space)

Week 13: Module 13 (Digital Landscaping)

Week 14: Final Project and Exam

4 Assignments

Quizzes 10%: Quizzes will be multiple choice and short answer. Due dates can be found on the schedule below, and these will be taken in Canvas. You will have 4 quizzes throughout the semester.

Final project 15%: At the end of the semester, you will create 1-2 maps using data of your choice (help with finding data will be provided if needed). You will explain your data acquisition process, your map-making process, and explain what natural or human process/phenomenon the maps depict. Additionally, you should identify and explain what scientific fields would benefit from this type of analysis/research or this type of geospatial data.

Think Critically & Hands-On Application 15% total: Students will be asked to participate in class discussions on Canvas following critical thinking prompts from the textbook. You may also be asked to complete a short hands-on application, submission for which will be uploaded in Canvas as a word document.

Labs 55% total: Each week you will complete labs that utilize a geospatial data and techniques. You should submit a word document with your answers to the questions throughout the lab. You should also include screenshots when necessary (i.e. to show your mapping). These labs are meant to introduce you to software used in geospatial science and provide you with a fundamental understanding and skillset in GIS.

Exam 5%: At the end of the semester, you will have a final exam (not proctored), which is worth 20 points. This exam is cumulative, meaning it may cover material from any of the weekly modules. More detail regarding the structure of the exam will be provided closer to the exam date.

Exam and quizzes are open-note and open-textbook. You may use your notes and the textbook, but you are not allowed to use any AI tools or online answer services (such as ChatGPT or similar technologies) while completing them.

5 Texts

Bradley A. Shellito, 2014. Introduction to Geospatial Technologies. **5th Edition**. W. H. Freeman and Company, a Macmillan Higher Education Company.

Instructional materials for this course consist of only those materials specifically reviewed, selected, and assigned by the instructor. The instructor is only responsible for these instructional materials.

6 Grading Scheme

A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E
100-94	93-90	89-87	86-83	82-80	79-77	76-70	69-67	66-63	62-60	59-57	<57

Grading polices follow the UF Undergraduate Catalog Grades and Grading Policies page

7 Late Policy

Meeting due dates and times is crucial to your future success and relationship with collaborators, whatever your field. Please finish and submit deliverables in a timely manner. All assignments submitted after their respective deadlines are subject to a penalty. Late assignments will be evaluated with a lower rate of -10% per day late. Credit cannot be earned for assignments that are turned in 5+ days past the due date or for those that are submitted after the instructor has graded and returned the assignment to the class. Late work will not be accepted after the deadline for the final assignment in the course. If you feel you may have difficulty meeting a deadline, please contact your instructor as soon as possible; note that the instructor may request documentation. Information on UF attendance policies can be found at https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/

8 Submitting Assignments

All assignments must be submitted electronically via Canvas unless otherwise noted. Emailed or paper submissions for Canvas assignments will not be accepted. You are responsible for ensuring that all your work is uploaded correctly and completely by the deadline. Corrupted files will be treated as missing work until they are re-uploaded correctly and late penalties will apply if your resubmission is past the deadline. So, please always double check your files right after you upload them. If you experience technical problems when submitting your work in Canvas, contact the UF Computing Help Desk for assistance: https://helpdesk.ufl.edu.

9 Academic Honesty

Accountability to Academic Honesty

You are all bound by the student academic honor code.

We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.

"On my honor, I have neither given nor received unauthorized aid in doing this assignment."

10 Special Accommodations

Students requesting disability-related academic accommodations must first register with the **Disability Resource Center (DRC)**. The DRC provides documentation to the student. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

11 Course and Instructor Evaluations

Finally, please provide feedback on the quality of instruction in this course by completing online evaluations at https://evaluations.ufl.edu

This course complies with all UF academic policies. For information on those polices and for resources for students, please see this link.