FOR 5435 Forest Resource Information Systems Summer 2022

Distance Graduate Sections: 4103, 4A28, 4G27

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SCHOOL OF FOREST, FISHERIES, AND GEOMATICS SCIENCES
UF IFAS UNIVERSITY of FLORIDA

Lecture: Wednesday : Periods 5-6 (2:00p to 4:45p) Canvas Zoom conference
GIS Computer Lab: Friday : Periods 2-3 (9:30p to 12:15p) Canvas Zoom conference

The times listed above provide a framework of the **minimum** amount of time you should set aside to be successful in this course. This is not a work-at-your-own-pace course – assignments and exams have due dates and times.

All synchronous meetings will be conducted using Zoom conferencing services: https://ufl.zoom.us/ Log in using your GatorLink credentials to set up your profile.

"GIS is the only technology that actually integrates many different subjects using geography as its common framework. Geo-enlightenment is understanding the interconnectedness of things."
(Jack Dangermond – Founder of ESRI)

Course Description

Nearly every topic imaginable associated with natural resource management has some spatial or geographic context. This course aims to develop spatial thinking through the use of geographic information system (GIS) tools. Understanding how the elements of geography, mapping, and database management connect to the physical world is key to answering questions related to "where" and "what". The relative location of features (where) and their properties or attributes (what) can be overlain, combined, and analyzed to tell a richer story beyond simple facts.

Topics Covered will include: Map and compass use, introductory aerial photograph interpretation, Public Land Survey System of the US, map projections and coordinate systems, geospatial data sources and data collection, use of Global Positioning System (GPS) for data collection and navigation, basic database design, spatial and tabular data analysis, basic cartographic techniques and map layout, and examples of GIS use in the natural and physical sciences.

Wednesday Lectures are pre-recorded. There may be a short Zoom session for questions, review activities, and to maintain student contact. Zoom sessions will be recorded.

Friday GIS Lab sessions will be broadcast live at the above times and recorded for later review in Canvas. You are invited to attend the live Zoom session whenever possible. Joe will host "FRIS Afterhours" Zoom sessions for those who can't attend during the above times.

Course Essential Questions

- What are the building blocks of a geographic information system?
- How can different types of data be collected and displayed in a GIS to represent natural or human-built systems?
- How can GIS be used in natural resource management to ask questions and solve problems?

Course Objectives

Upon completing the course, students will be able to:

- Read maps and use a compass for field navigation;
- Understand the Public Land Survey System and use it to describe land parcels;
- Recognize map projections and their geodetic implications;
- Discover and use aerial and satellite imagery and other digital data sources;
- Create spatial data sets and organize them in a geodatabase;
- Practice basic vector and raster geospatial analyses;
- Create maps using appropriate cartographic standards.

Cornerstone Tasks

- ***GIS Map and Summary Reports:*** Written lab reports containing a map of activity results, a summary of activities, and answers to questions will be required. Assessment will be based on a report grading rubric.
- ***Graduate Student GIS Project:*** The student will create a narrated slide show and present it through Canvas Conferences, either live or recorded, during the last week of class. More information is available in Canvas Assignments.

Teaching Methods

- ***Lectures:*** Narrated PowerPoint lectures or live demonstrations will focus on presenting new information as well as that summarized from the assigned readings. Lectures will be recorded and posted in Canvas.
- ***Assigned Readings:*** Each week various book chapters, articles, and videos will be posted on-line prior to lecture. It is to your advantage to read these articles and view the videos as they will often reinforce information given in lecture, aid in field study, or contain information appearing on exams.
- ***GIS Activities:*** Students will be supplied with step-by-step tutorials designed to demonstrate spatial information theory and familiarize them with ArcGIS software. Students will individually complete a summary report each week that includes a map, an activities summary, and answers to assigned questions. Prepare the reports to serve as personal tutorial notes for future reference.
- ***Quizzes:*** Quizzes will be administered covering lecture material, assigned readings, videos, and lab subjects. Feedback will be provided explaining answer insufficiencies.
- ***Group Study:*** Students are encouraged to form small *ad hoc* study groups within the eLearning environment to reinforce concepts and to informally quiz each other on the course material presented.

- ***Individual Study:*** Each student will be expected to watch recorded lectures and labs; detailed note-taking is encouraged. In addition, students should complete assigned readings, produce required lab reports, and spend individual time reviewing materials in advance of exams.

Grading

Quizzes (6):	30%
GIS Lab Reports:	30%
Final Project:	30%
Class Participation:	10%

- **Quizzes:** Timed comprehensive quizzes will be given at the end of each week. Students will complete the quiz through the eLearning site Canvas. From the time you start the quiz you will have a specified time frame to complete it. Quizzes are open book, notes, and lecture materials, however, you are under UF's Honor Code and must complete the exam on your own with no help from others.
- **GIS Computer Labs:** GIS lab sessions will be broadcast live via Zoom Conferences on Fridays from 9:30a to 12:15p and will be and recorded for later viewing. These sessions will typically include a short lecture plus time to complete the exercise. Students will be supplied with step-by-step activities designed to demonstrate spatial information theory and familiarize them with ArcGIS software. We will use UF Apps to access ArcGIS software and all tutorial data.

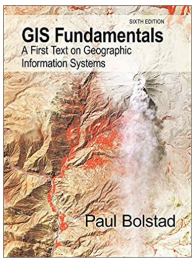
  Students will individually complete and submit a summary report each week that includes a map, an activities summary, and answers to assigned questions. Prepared reports can serve as personal tutorial notes for future reference. Evening help sessions will be arranged by appointment through Canvas Conferences.
- **Graduate GIS Project:** All graduate students must complete a final project. Use this as an opportunity to explore the potential that GIS tools could bring to your research or professional interests. The deliverable will be a power point presentation illustrating, at the least, project objectives, methodology, data used and data created, analysis, results, and discussion. You will be expected to present your project to the class during the final Thursday lab session via Canvas conferencing software. Contact Dr. Fox early in the semester with your project ideas.
- **Participation:** Specific discussion topics will appear in Canvas under different weekly modules. In addition, you are encouraged to introduce new discussion topics that address issues you encountered and solutions devised, any software shortcuts you discover, relevant online content you find that helps explain a concept, or other resources you think might be helpful to course participants.

Final grading follows University standards based on the following scale (https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx):

Letter Grade	A	B+	B	B-	C+	C	C-	D+	D	D-	E
Course Score	90.0 - 100	87.0 - <90.0	83.0 - <87.0	80.0 - <83.0	77.0 - <80.0	73.0 - <77.0	70.0 - <73.0	67.0 - <70.0	63.0 - <67.0	60.0 - <63.0	0- <60.0
Grade Points	4	3.33	3	2.67	2.33	2	1.67	1.33	1	0.67	0

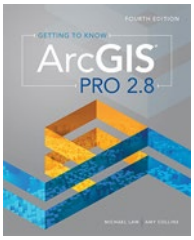
Resources

Required Text:



GIS Fundamentals (6th edition), Paul Bolstad (2019). XanEdu Publishing Inc. ISBN: 978-1593995522

***Optional* Workbook:**



Getting to Know ArcGIS Pro 2.8 (Fourth Edition**),** Michael Law and Amy Collins (2021). ESRI Press.

ISBN: 9781589487017 / E-book ISBN: 9781589487024

Note: *Getting to Know ArcGIS Pro* serves as a reference text for exercises conducted in class.

Things you will need for this class:

1) A computer with office software for written reports.
2) High-speed internet to access the eLearning site in Canvas and UF Apps.
3) Headset/microphone and webcam for discussion and conference sessions.
4) A way to take notes.

Technology Information:

Use your GatorLink credentials to log into these web sites **before our first meeting** to make sure you can access the resources. Some software download and installation may be necessary to access UF Apps.

Course Delivery Software: Canvas http//:elearning.ufl.edu
Additional readings, videos, and recorded lectures will be available through Canvas modules.

GIS Software and Data Access: UF Apps https://apps.ufl.edu

Canvas Conference Software: https://ufl.zoom.us/

GIS labs will be conducted live using Canvas web conferencing software (Zoom). Sessions will be recorded for later student review. In addition, optional live evening software help sessions may be scheduled as needed or requested. Be sure to connect early and make sure your internet connection speed is sufficient. A headset or separate earphone and microphone are required for vocal participation Otherwise, comments and questions can be entered into the included chat box if a headset is not available.

Contact the UF Help Desk (352) 392-4357 for assistance. http://helpdesk.ufl.edu/

Late Assignments and Make-Up Work

The condensed nature of this course will require you to be focused, attentive, and taking notes during every lecture if you wish to be successful.

It is your responsibility to keep track of assignment due dates and times as listed in Canvas. This is not a work-at-your-own-pace course – assignments and exams have due dates and times. Most assignment due times will be 11:59pm or just before midnight. Assignments open and close based on the clock governing the Canvas server so submitting assignments at the last minute may prove troublesome for you – don't wait! A grace period, usually one day, will be added to each assignment due date during which late work will be accepted. Any late assignment scores will be reduced by 50% of the original point value and then be graded according to the rubric. No assignments will be accepted after the assignment closes so do not email them to an instructor.

Data storage/management and computer accessibility: Computer or other hardware failures, except failure of the UF e-Learning system, will not excuse students for missing assignments. Any late submissions due to technical issues MUST be accompanied by the ticket number received from the Helpdesk when the problem was reported to them. The ticket number will document the time and date of the problem. You MUST e-mail your instructor within 24 hours of the technical difficulty if you wish to request consideration.

For computer, software compatibility, or access problems call the HELP DESK phone number—352-392-HELP = 352- 392-4357 (option 2).

The availability of inexpensive computer-connected storage devices (such as thumb drives) and pervasive online storage/backup options (UF Apps, OneDrive, Google Drive, Dropbox, etc.) has made the loss of computer data nearly impossible. Use them! No excuses because of data loss! Start assignments early and have a backup plan in mind so as to avert a missed assignment disaster.

Generally, no make-up assignments or exams will be offered other than for exceptional situations such as University-sanctioned absence, death of an immediate family member (pets not included), serious illness or injury (reported to the instructor with a physician's note within five days of the first absence), or extreme weather resulting in the closure of campus. Extra credit assignments are rarely, if ever, provided however, bonus points may be available on quizzes..

Class and Discussion Decorum

All course participants are expected to interact with dignity and professionalism in the classroom, in the field, or in an on-line discussion. Be professional. You are preparing for a career and should be learning to interact with your fellow classmates as you would in your future professional life. Written communication should follow standard rules for grammar and spelling and be clear, concise and intelligent.

Be respectful and open to opinions and ideas that differ from yours. The exchange of diverse thoughts, ideas and opinions are an important part of the scholarly environment. When responding to statements or posts made by others, address the ideas, not the person. Disagreement with the ideas of others is perfectly acceptable; how one disagrees should not be hurtful or offensive. Insulting remarks and name-calling are never appropriate.

Academic Honesty

In 1995 the UF student body enacted a new honor code and voluntarily committed itself to the highest standards of honesty and integrity. When students enroll at the university, they commit themselves to the standard drafted and enacted by students. The quality of a University of Florida education is dependent upon community acceptance and enforcement of the honor code.

The 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 all work submitted for credit by students at the university, the following pledge is either required or implied: **"On my honor, I have neither given nor received unauthorized aid in doing this assignment."**

It is assumed all work will be completed independently unless the assignment is defined as a group project, in writing by the instructor. This policy will be vigorously upheld at all times in this course.

Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code.

Academic Resources

SFRC Academic Hub: https://ufl.instructure.com/courses/303721

UF Writing Studio: https://writing.ufl.edu/writing-studio/

Software Use

All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

Campus Helping Resources

Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

University Counseling & Wellness Center
3190 Radio Road, (352) 392-1575, www.counseling.ufl.edu/cwc/
Counseling Services
Groups and Workshops
Outreach and Consultation
Self-Help Library
Training Programs
Community Provider Database

Office of Victim Services
1515 Museum Road, (352) 392-5648, https://police.ufl.edu/about/divisions/office-of-victim-services/

Career Resource Center
First Floor JWRU, (352) 392-1601, www.crc.ufl.edu/

Students with Disabilities
0001 Reid Hall, (352) 392-8565, https://disability.ufl.edu/

The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. **If you have registered with the Disability Resource Center and require academic accommodations, it is your responsibility to privately inform the instructor of your needs as soon as possible before the first class session.**

UF attendance policy

https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/

Please contact the instructor ahead of time or as soon after an absence to be considered excused.

The UF Religious Holidays Policy is available at:

https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/#religiousholidaystext

At the University of Florida, students and faculty work together to allow students the opportunity to observe the holy days of their faith. A student should inform the faculty member of the religious observances of their faith that will conflict with class attendance, with tests or examinations, or with other class activities **prior to the class or occurrence of that test or activity**.

Online Course Evaluation Process:

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at gatorevals.aa.ufl.edu/students/ Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals,. Summaries of course evaluation results are available to students at gatorevals.aa.ufl.edu/public-results/ .

FOR5435 : FRIS : 2022 Summer B Class Schedule		
Week / Date		**Topics**
1	June 29	Lecture: Class Introduction, Lab Procedures, Mapping history, Intro to GIS, Spatial Data Models, Public Land Survey, Intro to map and compass use
	July 1	GIS Computer Lab: Setting Up and Using UF APPS, Creating a Personal Work Directory, Intro to GIS Theory, Downloading and uncompressing GIS Data, Getting Started with ArcGIS/ArcMap, Creating a Map
2	July 6	Lecture: Intro to Coordinate Systems, Map projections
	July 8	GIS Computer Lab: Creating Spatial Data – Points, Lines, and Polygons – from Georeferenced Scanned Paper Maps and Georeferenced Digital Aerial photographs, Managing Spatial Data – ArcGIS Geodatabases
3	July 13	Lecture: Global Navigation Satellite Systems, Spatial Data Sources, and Spatial Database Design
	July 15	GIS Computer Lab: 2 Assignments. 1) Creating A Geodatabase, Creating Polygons from GPS Data, 2) GIS and Mission Planning for ACF Field Data Collection Using Aerial Photographs and Remotely Sensed Data
4	July 20	Lecture: Aerial Photographs, Remotely Sensed Data, and Air Photo Interpretation
	July 22	GIS Computer Lab: 2 parts, 1) GIS Data Creation from ACF Field Observations and 2) Georeferencing Scanned Paper Aerial Imagery
5	July 27	Lecture: Digital data, Basic spatial analysis
	July 29	GIS Computer Lab: ACF Land Cover analysis
6	August 3	Lecture: Raster analysis
	August 4	Course wrap-up and Evaluation (9:30-10am) **Graduate Project Presentations / Brown Bag Lunch** (10am to 1pm) Raster Analysis Demo (1pm-3:15pm)
	August 5	Quiz 6
Subject to change – watch Canvas for updates and announcements		