Geography 370 – 007 Introduction to Geographic Information
Spring 2022 (Tuesday-Thursdays, 2:00-3:15pm)
Instructor: *Prof. Javier A. Arce-Nazario*
Recitations: sec. 701 Mondays 3:35PM - 4:25PM, and sec. 702 Wednesday 1:25PM - 2:15PM
Office Hours: Tuesdays and Thursdays 3:30-5:00pm and by appointment. In-person (office CH-326) and by Zoom (check Sakai for Zoom link)

Geographic data is everywhere, and it is used across a variety of research areas and business endeavors. This course will introduce you to the tools and methods needed to obtain, manage, interpret and display spatial data.

LEARNING OBJECTIVES
At the end of this class, you will not only know how to create digital geographic information, but you will also know how to look critically at maps and remotely sensed imagery and how to evaluate the sources of data and the assumptions that were used to make them. Your goals should be to:

- understand how geographic data is represented, and be comfortable with the different data models and coordinate systems
- develop a skillset allowing you to design maps and carry out simple spatial analyses
- become proficient in basic operations with GIS/Remote Sensing software tools

RECOMMENDED READING
See course website https://gisunc.github.io/GEOG370Fall2022/

PREREQUISITES
This is an introductory course, so there are no prerequisites. Being patient and open-minded towards computers and technology will make your experience more pleasant.

COURSE WEBSITE
Course information and materials, as well as announcements from the instructors, will be distributed via the UNC Sakai site and the course Github page. These materials will be updated frequently. *You are also expected to check your UNC e-mail and the Sakai Announcements regularly.*

COURSE PLAN

You will be required to read course material and watch videos related to theory and methods. The course webpage has the links to the Sakai resources with the data used in the videos. You need to be able to replicate what is done in the video, otherwise you will not understand how to complete the homework or the tests. The benefit of learning techniques with these step-by-step videos is that you can do them at your own pace and repeat them as many times as you want until you feel comfortable doing the exercise. If you do not practice the videos, do not expect to be able to do the homework or the practical tests. The professor and the TA are always happy to help during recitation/office hours; however you should demonstrate that you

have attempted the videos before you ask for help with the technical aspects of a homework or test.

CLASSROOM ETIQUETE

Be respectful: please be silent while the professor or another student is speaking. When discussing in small groups, be prepared to quickly return your attention to the professor.

Communicate: Your instructor has a strong Boricua accent, so please feel free to ask him to repeat something if you do not understand him. He will not be offended; it is part of his identity.

Be timely: Please do not arrive late to class, and if you are late, take your seat without disturbing others (arriving more than 15 minutes late is equivalent to missing a session).

Carefully follow the UNC Covid standards.

REQUIREMENTS & GRADE BREAKDOWN

Tests (30%)
Students will take three tests during the scheduled lecture time covering both the theory and applied techniques. The theory will be assessed using a combination of multiple choice and short-answer questions. Students' comprehension of applied techniques will be evaluated through exercises that require them to create a particular type of map or geographic data analysis, using the techniques presented in class.

Final exam (15%)
During the official final exam time students will be tested on all the theory and applied techniques discussed in class.

Homework and presentations (45%)
Most of the student's comprehension of the material will be assessed through homework which will be shared and presented to the rest of the class. Students will create unique maps or analysis that they will share with other students. This is a very valuable part of the class, as other students learn about data and resources from other students, and the professor learns the interests of the students and can give direct feedback. The instruction and the deadlines for the 10 homework exercises can be found on the course webpage. Turning your homework on time is important, and so 20% will be deducted per day for late submissions. It is important that you verify that you sent (via Sakai) the correct data, and that if you send a link to a homework, that the resources in the link are public and that all the information can be accessed from the web.

At least 50% of your grade will be deducted from your homework if you do not show up to the presentation session. During the presentation session, be ready to explain how you did your homework and discuss the decisions that you made when designing the map.

Participation, leadership and collaboration (10%)
It is expected that students will actively and respectfully participate in the class discussion, recitations and presentations.

Your projects and assignments will be turned in electronically via Sakai. 20% of any assignment's grade will be deducted per day when the assignment is late. If for some reason your health or any other circumstances affect your ability to actively participate, please let the professor know about the situation.

Students taking this course agree to abide by the provisions of the University of North Carolina at Chapel Hill Honor Code.

Final grades will be assigned using the UNC plus/minus letter grade system:
A (93-100) A-(90-92.9) B+(87-89.9) B(83-86.9) B- (80-82.9) C+ (77-79.9) C (73-76.9) C- (70-72.9) D+ (67-69.9) D (60-66.9) F (<60)

Students with disabilities
UNC facilitates the implementation of reasonable accommodations, including resources and services, for students with disabilities, chronic medical conditions, a temporary disability or pregnancy complications resulting in difficulties with accessing learning opportunities. All accommodations are coordinated through the Accessibility Resources and Service Office (accessibility@unc.edu).

Title IX Resources
Any student who is impacted by discrimination, harassment, interpersonal (relationship) violence, sexual violence, sexual exploitation, or stalking is encouraged to seek resources on campus or in the community. Please contact the Director of Title IX Compliance (Adrienne Allison – Adrienne.allison@unc.edu), Report and Response Coordinators in the Equal Opportunity and Compliance Office (reportandresponse@unc.edu), Counseling and Psychological Services (confidential), or the Gender Violence Services Coordinators (gvsc@unc.edu; confidential) to discuss your specific needs. Additional resources are available at safe.unc.edu.

Schedule: Check the website for details on each section and deadlines.
https://gisunc.github.io/GEOG370Fall2022/

Day	Activity
Tue Aug 16 2022	Introduction to class
Thu Aug 18 2022	Introduction to data types
Tue Aug 23 2022	How we model the world
Thu Aug 25 2022	Sharing our maps pt1 / Github
Tue Aug 30 2022	Sharing our maps pt2 / GPS
Thu Sep 01 2022	Projections
Tue Sep 06 2022	No Classes
Thu Sep 08 2022	Projections and Georeferencing
Tue Sep 13 2022	Exercise: georeference UNC maps and create tiles
Thu Sep 15 2022	Webmaps
Tue Sep 20 2022	Test 1
Thu Sep 22 2022	Tables
Tue Sep 27 2022	Choropleths
Thu Sep 29 2022	Classification Schemes and Ratios
Tue Oct 04 2022	Apply classification and ratios to your data
Thu Oct 06 2022	Cartography
Tue Oct 11 2022	Share your maps / RECAP
Thu Oct 13 2022	Test 2
Tue Oct 18 2022	Vector Spatial Analysis
Thu Oct 20 2022	No Classes
Tue Oct 25 2022	Vector Spatial Analysis Practical
Thu Oct 27 2022	Introduction to Rasters and to GEE
Tue Nov 01 2022	Share your maps / Answer GEE questions
Thu Nov 03 2022	Intro to remote sensing
Tue Nov 08 2022	Raster Spatial Analysis
Thu Nov 10 2022	Test 3
Tue Nov 15 2022	Remote Sensing Presentation
Thu Nov 17 2022	Remote Sensing Presentation
Tue Nov 22 2022	Topography and elevation models
Thu Nov 24 2022	No Classes
Tue Nov 29 2022	Discuss Test 3 / RECAP
Check official calendar	Final Exam

Homework Schedule

Homework	Deadline
Homework 1: Make your first map	Wed Aug 24 2022 at 11:55 pm
Homework 2: Github	Wed Aug 31 2022 at 11:55 pm
Homework 3: World projections	Wed Sep 07 2022 at 11:55 pm
Homework 4: Georeferencing UNC	Wed Sep 14 2022 at 11:55 pm
Homework 5: Georeference a historical image	Wed Sep 21 2022 at 11:55 pm
Homework 6 part 1: Choropleth using Census data	Wed Sep 28 2022 at 11:55 pm
Homework 6 part 2: Ratios and classification schemes	Fri Sep 30 2022 at 11:55 pm
Homework 7: Choropleth or proportional symbol map	Mon Oct 10 2022 at 11:55 pm
Homework 8: Vector spatial analysis	Wed Oct 26 2022 at 11:55 pm
Homework 9: GEE Intro to raster analysis	Wed Nov 02 2022 at 11:55 pm
Homework 10: GEE Short Presentation	Mon Nov 14 2022 at 11:55 pm