ANT4852/ANG5852: GIS Methods in Anthropology

Department of Anthropology

College of Sciences, University of Central Florida

COURSE SYLLABUS

Instructor:	*Scott Branting*	*Term:*	*Fall 2022*
Office:	*Online*	*Credit Hours*	*3*
Phone:	*(407) 823-4962*	*Class Meeting Days:*	*W*
E-Mail:	*scott.branting@ucf.edu*	*Class Meeting Hours:*	*10:30am – 1:20pm*
Website:	*UCF Webcourses*	*Class Location:*	*CB1 219*
Office Hours Online Only:	*Dr. Branting W 2:00-3:30 or by appointment* Lexie *M 3:00-4:30, F 9:00-10:30, or by appointment*	*TA:* *TA email:*	*Lexie Brock* *alexandria.brock@ucf.edu*

University Course Catalog Description

This course provides an introduction to Geographic Information Systems (GIS) methods from an anthropological perspective. This course is part of a two-course sequence with Advanced GIS Methods in Anthropology and fulfills the two-course core requirement for the GIS Graduate Certificate or the GIS Undergraduate Certificate.

Course Overview

This course will expose you to both numerous spatial theories underlying GIS analysis as well as to the geospatial methodologies, tools, and theories used to collect and analyze spatial data. It is relevant to anyone who may need to conduct anthropological research or research in other disciplines that includes consideration of data within a spatial context. This course is comprised of both a classroom and a laboratory component. The classroom component will consist of lectures and activities, while the laboratory component will allow you to get hands-on experience applying the concepts discussed in class. This course is part of a two-course sequence with Advanced GIS Methods in Anthropology and fulfills the two-course core requirement for the GIS Graduate Certificate or the GIS Undergraduate Certificate.

Course Objectives

In this course, students will gain skills in:

- Project design: including generating and analyzing geospatial data
- Writing: including designing research and writing grants related to geospatial analysis
- Public speaking through the presentation of their research designs and their data analyses
- Interdisciplinarity: including evaluating and correlating data derived from a variety of sources, as well as assessing research in several disciplines.

Course Prerequisites
None

Required Text and Articles
Some readings in this course take the form of journal articles, which are available through the UCF Library web site. In cases where a reading is not available for electronic download, a copy of the reading will be made available through the course website on Webcourses@UCF. The following texts are also required for the course:

- Bolstad, P. (2019): GIS Fundamentals: A First Text on Geographic Information Systems (6th Edition). Acton, MA: XanEdu
- Wheatley, D. G., & Gillings, M. M. (2002): Spatial technology and archaeology. The archaeological applications of GIS. New York: Taylor and Francis. (Available as a DRM-free eBook for access/download through the UCF Library.)

Basis for Final Grade
Your grade will be based upon your laboratory exercises (40%), participation in classroom activities with a greater role expected from graduate students (4%), the syllabus quiz (1%), a written grant application based on the provided undergraduate or graduate grant sheet (45%), a short presentation of that application to the entire class (10%). Laboratory exercises will usually be due via webcourses at the start of class the week after they were handed out, see the course schedule below for actual dates. Failure to hand it in assignments on the due date, in the absence of a pre-accepted excuse, will result in a score of (0) for that assignment. Alternative assignment due dates will be provided when an excuse has been granted by the professor. Presentation times during the final weeks of class will be scheduled later in the class. Failure to present at that time, in the absence of a pre-accepted excuse, will result in a score of (0) for the presentation. Students with a pre-accepted excuse by the professor, including a religious observance or if you are representing the university in an authorized event or activity, will be provided with and alternative time for their presentations.

Assignments	***Due Date***	***Percent of Grade***	***Max. Points***
Syllabus Quiz	By Friday of Week 1, August 26th, at 3pm	1% and federal verification requirement	1
Laboratory Exercises	Wednesday at 10:30am on the week due via webcourses	40%	40
Participation in Classroom Activities - Graduate students are expected to take a larger participatory role	Usually in class each Wednesday	4%	4
Undergraduate Grant Application or Graduate Grant Application	Wednesday December 1st at 10:30am	45%	45
Oral Presentation of Project	Assigned Classroom Period in Week 15 and Finals Week (16)	10%	10

The syllabus quiz also completes the verification requirement for students who receive federal financial aid. Verification of student engagement is required to support UCF's compliance with federal financial aid regulations. The regulations state that without verification of student engagement at the start of each course in which a student is enrolled, students will not receive their student aid. UCF is required to verify that every student enrolled in every course meets this regulation. All students, whether or not you receive federal student aid, are required to complete the syllabus quiz by 3pm on the Friday of first week.

Letter Grade	***Points***
A	93 – 100 points
A-	90 – 92 points
B+	87 – 89 points
B	83 – 86 points
B-	80 – 82 points
C+	77 – 79 points
C	73 – 76 points
C-	70 – 72 points
D+	67 – 69 points
D	63 – 66 points
D-	60 – 62 points
F	59 and below

Course Policies

Academic Integrity and Student Conduct

All student conduct must conform to the purpose of this class, which is to provide a welcoming and inclusive environment for the learning and sharing knowledge. This will require civility and respect for each other during lectures and discussions, as well as trust and cooperation between you and me. Cheating, plagiarism, and disruptive behavior will, therefore, not be tolerated in class. If your behavior in class is being disruptive (e.g. talking, violating the electronic device policy, arriving late, distracting other students), I may use my right as instructor to ask you to leave the class. If a student habitually disturbs the class I also reserve the right to reduce their final course grade by up to 10%. Plagiarism and cheating are particularly serious offenses.

Students should familiarize themselves with UCF's Rules of Conduct at <https://scai.sdes.ucf.edu/student-rules-of-conduct/>. According to Section 1, "Academic Misconduct," students are prohibited from engaging in

1. Unauthorized assistance: Using or attempting to use unauthorized materials, information or study aids in any academic exercise unless specifically authorized by the instructor of record. The unauthorized possession of examination or course-related material also constitutes cheating.
2. Communication to another through written, visual, electronic, or oral means: The presentation of material which has not been studied or learned, but rather was obtained through someone else's efforts and used as part of an examination, course assignment, or project.

3. Commercial Use of Academic Material: Selling of course material to another person, student, and/or uploading course material to a third-party vendor without authorization or without the express written permission of the university and the instructor. Course materials include but are not limited to class notes, Instructor's PowerPoints, course syllabi, tests, quizzes, labs, instruction sheets, homework, study guides, handouts, etc.
4. Falsifying or misrepresenting the student's own academic work.
5. Plagiarism: Using or appropriating another's work without any indication of the source, thereby attempting to convey the impression that such work is the student's own.
6. Multiple Submissions: Submitting the same academic work for credit more than once without the express written permission of the instructor.
7. Helping another violate academic behavior standards.
8. Soliciting assistance with academic coursework and/or degree requirements.

Responses to Academic Dishonesty, Plagiarism, or Cheating
Students should also familiarize themselves with the procedures for academic misconduct in UCF's student handbook, The Golden Rule <https://goldenrule.sdes.ucf.edu/>. UCF faculty members have a responsibility for students' education and the value of a UCF degree, and so seek to prevent unethical behavior and respond to academic misconduct when necessary. Penalties for violating rules, policies, and instructions within this course can range from a zero on the exercise to an "F" letter grade in the course. In addition, an Academic Misconduct report could be filed with the Office of Student Conduct, which could lead to disciplinary warning, disciplinary probation, or deferred suspension or separation from the University through suspension, dismissal, or expulsion with the addition of a "Z" designation on one's transcript.

Being found in violation of academic conduct standards could result in a student having to disclose such behavior on a graduate school application, being removed from a leadership position within a student organization, the recipient of scholarships, participation in University activities such as study abroad, internships, etc.

Let's avoid all of this by demonstrating values of honesty, trust, and integrity. No grade is worth compromising your integrity and moving your moral compass. Stay true to doing the right thing: take the zero, not a shortcut.

Course Accessibility
Both I and the University of Central Florida are committed to providing access and inclusion for all persons with disabilities. Students with disabilities who need access to course content due to course design limitations should contact the professor as soon as possible. Students should also connect with Student Accessibility Services (SAS) <http://sas.sdes.ucf.edu/> (Ferrell Commons 185, sas@ucf.edu, phone 407-823-2371). For students connected with SAS, a Course Accessibility Letter may be created and sent to professors, which informs faculty of potential course access and accommodations that might be necessary and reasonable. Determining reasonable access and accommodations requires consideration of the course design, course learning objectives and the individual academic and course barriers experienced by the student. Further conversation with SAS, faculty and the student may be warranted to ensure an accessible course experience.

In-Class Recording
Students may, without prior notice, record video or audio of a class lecture for a class in which the student is enrolled for their own personal educational use. A class lecture is defined as a formal or methodical oral

presentation as part of a university course intended to present information or teach students about a particular subject. Recording classroom activities other than class lectures, including but not limited to lab sessions, student presentations (whether individually or part of a group), class discussion (except when incidental to and incorporated within a class lecture), clinical presentations such as patient history, academic exercises involving student participation, test or examination administrations, field trips, and private conversations is prohibited. Recordings may not be used as a substitute for class participation and class attendance and may not be published or shared without the written consent of the faculty member. Failure to adhere to these requirements may constitute a violation of the University's Student Code of Conduct as described in the Golden Rule.

University Writing Center:
The University Writing Center (https://guides.ucf.edu/writingcenter) is a free resource for UCF students. If you require assistance with any part of the writing process, they have trained consultants who can help you if you plan ahead. Since written assignments comprise a large percentage of your grade for this course, I would encourage you to seek out their assistance if you require it.

Electronic Device Policy
Students learn in different ways and are comfortable with different technologies. You are welcome to use a computer, tablet, smartphone or similar device in class meetings for note taking or for completing the laboratory exercises. You may not, however, use these devices for non-course-related purposes including: phone calls, texting, checking emails, and making use of the internet. You may also not use the device in any way that is distracting to other students in the classroom. If you are found to be doing so, you will be asked to put away the device or stop using the device. The use of a device to send or receive a call or message is not permitted in class at any point unless there is an emergency. Please be sure these devices are silenced, in accordance with University policy, and in your pocket or bag for the duration of the class.

Campus Safety
Emergencies on campus are rare, but if one should arise during class, everyone needs to work together. Students should be aware of their surroundings and familiar with some basic safety and security concepts.

- In case of an emergency, dial 911 for assistance.
- Every UCF classroom contains an emergency procedure guide posted on a wall near the door. Students should make a note of the guide's physical location and review the online version at <https://centralflorida-prod.modolabs.net/student/safety/index>.
- Students should know the evacuation routes from each of their classrooms and have a plan for finding safety in case of an emergency.
- If there is a medical emergency during class, students may need to access a first-aid kit or AED (Automated External Defibrillator). To learn where those are located, see <https://ehs.ucf.edu/automated-external-defibrillator-aed-locations>.
- To stay informed about emergency situations, students can sign up to receive UCF text alerts by going to <https://my.ucf.edu> and logging in. Click on "Student Self Service" located on the left side of the screen in the toolbar, scroll down to the blue "Personal Information" heading on the Student Center screen, click on "UCF Alert", fill out the information, including e-mail address, cell phone number, and cell phone provider, click "Apply" to save the changes, and then click "OK."
- Students with special needs related to emergency situations should speak with their instructors outside of class.

- To learn about how to manage an active-shooter situation on campus or elsewhere, consider viewing this video (<https://youtu.be/NIKYajEx4pk>).

Accommodations for Active Duty Military Students
Students who are deployed active duty military and/or National Guard personnel and require accommodation should contact their instructors as soon as possible after the semester begins and/or after they receive notification of deployment to make related arrangements.

Attendance (including absences for Religious Observances and Authorized University Events or Co-curricular Activities)
Attendance at class meetings is important for an understanding of course materials and for success in this class. I will not take formal class attendance, although I may keep a record of attendance of individual students at my discretion if it is warranted based on class performance. I expect that students attend class regularly and I will not provide class notes or lecture slides to students for class periods that students miss. In addition, if you are not in attendance on days when you may be presenting, without a pre-accepted excuse, you will receive a score of (0) for that assignment. Students with a pre-accepted excuse, including a religious observance (UCF policy at <http://regulations.ucf.edu/chapter5/documents/5.020ReligiousObservancesFINALJan19.pdf>) or if you are representing the university in an authorized event or activity (UCF policy at <https://policies.ucf.edu/documents/4-401.pdf), will be provided with an alternative time for their presentations.

Updates and Notifications
The course website on Webcourses will be used for any general notifications or updates to this course, including changes to this syllabus.

Obtaining Notes for Missed Lectures
If you miss a lecture it is your responsibility to obtain notes from a fellow classmate. I will not provide notes or a copy of any lecture or activity.

Grades of "Incomplete"
Incomplete grades are only given when an unexpected and documented emergency situation prevented a student from completing the remaining work at the time when the emergency occurred. I have the right to make the final decision on whether or not to issue an incomplete, rather than submitting a final grade based upon your completed work. Incomplete work must be finished by the end of the next semester or the "I" will automatically become an "F" on your transcript.

Course Schedule

This syllabus is tentative and I may make reasonable schedule modifications to meet the goals of the class. Articles and the required text (Wheatley and Gillings 2002) are available through the UCF Library.

Week	Day	Date	Topic Assignments Due	Reading Assignments
1	W	Aug. 24	What is GIS Course Introduction, What is GIS, Syllabus Quiz **ASSIGNMENT: Syllabus Quiz due Fri. Aug. 26th, 3pm**	**Bolstad pp. 1-23** **Wheatley and Gillings pp. 1-21**
2	W	Aug. 31	GIS Projects – Data and basic manipulation Classroom session with GIS Examples from Class and Introduction to GIS Lab **ASSIGNMENT: GIS Examples for Class (One in your discipline, one outside it, and a project idea)**	**Wheatley and Gillings pp. 23-59;** **Bolstad pp. 168-191; 373-419; 617-634** For additional explanation on topics in Wheatley and GIllings see: Bolstad pp. 27-167.
3	W	Sept 7	Data Collection, Surveys, Surveying Classroom session and GIS Data Lab **ASSIGNMENT: Introduction to GIS Lab due at start of class**	**Wheatley and Gillings pp. 59-87** **Bolstad pp. 331-365; 299-326** For additional information on GPS and surveying see: Bolstad pp. 201-237.
4	W	Sept 14	Remote Sensing Classroom session and Remote Sensing Lab **ASSIGNMENT: GIS Data Lab due at start of class**	**Bolstad pp. 245-292** For additional types of raster based analysis see: Bolstad pp. 445-475. **Masini and Lasaponara (2017): Sensing the Past from Space: Approaches to Site Detection;** **Liu and Mason (2016): Appendix A: Imaging sensor systems and remote sensing satellites**

5	W	Sept 21	Quantitative and Qualitative Data Classroom session and Integration Lab **ASSIGNMENT: GIS Idea to Share with Class** **ASSIGNMENT: Remote Sensing Lab due at start of class**	**Sui (2015): "Emerging GIS themes and the six senses of the new mind: is GIS becoming a liberation technology?"** **Boschmann and Cubbon (2014): "Sketch Maps and Qualitative GIS Using Cartographies of Individual Spatial Narratives in Geographic Research"**
6	W	Sept 28	Perception – Viewsheds, Soundsheds, Smellsheds Classroom session and Perception Lab **ASSIGNMENT: Integration Lab due at start of class**	**Wheatley and Gillings pp. 201-216;** For additional terrain analysis see: Bolstad pp. 485-509. **Nutsford et al. (2015): "Personalizing the Viewshed: Visibility Analysis from the Human Perspective";** **Brabyn (2015): "Modelling landscape experience using 'experions'"**
7	W	Oct 5	Transportation and Movement Classroom session and Transportation Lab **ASSIGNMENT: Perception Lab due at start of class**	**Bolstad pp. 420-428** **Hall and Smith (2014): "Knowing the City: maps, mobility, and urban outreach work";** **Branting (2012): "Seven Solutions for Seven Problems with Least Cost Pathways"**
8	W	Oct 12	Location – Boundaries, Borderlands, Central places, Spatial Hierarchies Classroom session and Location Theory Lab **ASSIGNMENT: Transportation Lab due at start of class**	**Wheatley and Gillings pp. 147-164;** **Wright (1986): "The Evolution of Civilizations";** **Mu and Wang (2006): "Population landscape: a geometric approach to studying spatial patterns of the US urban hierarchy"**

9	W	Oct 19	Demography – Population, Densities, Interactions Classroom session and Demography Theory Lab **ASSIGNMENT: Location Theory Lab due at start of class**	**Naroll (1962): "Floor Area and Settlement Population";** **Reibel (2007): "Geographic Information Systems and Spatial Data Processing in Demography: a Review";** **Khormi and Kumar (2011): "Modeling dengue fever risk based on socioeconomic parameters, nationality and age groups: GIS and remote sensing based case study"**
10	W	Oct 26	Spatial Analysis, Spatial Statistics, and Modeling Classroom session Spatial Analysis Lab **ASSIGNMENT: Demography Theory Lab due at start of class**	**Wheatley and Gillings pp. 89-106, 125-146;** **Bolstad pp. 521-561, 573-606** **Austin et al. (2005): "Clustering of fast-food restaurants around schools: a novel application of spatial statistics to the study of food environments";** **Vogel et al. (2016): "The Ancient Rural Settlement Structure in the Hinterland of Pompeii Inferred from Spatial Analysis and Predictive Modeling of *Villae Rusticae"***
11	W	Nov 2	Visualization and Virtual Reality Classroom session Visualization Lab and Proposal Preparation **ASSIGNMENT: Spatial Analysis Lab due at start of class**	**Wilhelmson and Dell'Unto (2015): "Virtual Taphonomy: A New Method Integrating Excavation and Postprocessing in an Archaeological Context";** **Verykokou et al. (2016): "Multi-scale 3D Modelling of Damaged Cultural Sites Use Cases and Image-Based Workflows"**
12	W	Nov 9	Proposal Preparation Class **ASSIGNMENT: Visualization Lab due at start of class**	

13	W	Nov 16	Visualization Projects Showcase and Proposal Preparation Class	
14	W	Nov 23	**THANKSGIVING HOLIDAY** **NO CLASS**	
15	W	Nov 30	**STUDENT PRESENTATIONS** **ASSIGNMENT DUE AT START OF CLASS** **Wednesday, November 30** **Undergraduate Grant Application (8-10 pages)** **Graduate Grant Application (10 pages)**	
Finals	W	Dec 7	**STUDENT PRESENTATIONS** ***Note Different Time: 10:00amU-12:50pm**	

Article Bibliography

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Verykokou, Styliani, Anastasios Doulamis, George Athanasiou, Charalabos Ioannidis, and Angelos Amditis
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Wright, Henry T.
1986 The Evolution of Civilizations. In *American Archaeology Past and Future: A Celebration of the Society for American Archaeology 1935-1985*. David J. Meltzer et al., eds. Pp. 323-365. Washington, DC: Smithsonian Institution Press.