Cover Sheet: Request 13807

GIS4XXX Population GIS

I	nfo	
	III V	

Process	Course New Ugrad/Pro
Status	Pending at PV - University Curriculum Committee (UCC)
Submitter	Kevin Ash kash78@ufl.edu
Created	3/27/2019 7:49:20 PM
Updated	11/3/2019 11:01:06 AM
Description of	This request is for approval of a new GIS course to be taught within the Department of
request	Geography.

Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	CLAS -	Jane Southworth		7/21/2019
		Geography			
		011609000			
No document d	nanges		Jacoph Spillopo	The College Curriculum	10/14/2010
College		of Liberal Arts			10/14/2019
		and Sciences		approves this request, with	
				the following changes	
				needed: 1) this course needs	
				a prerequisite, since it is a	
				4000-level course; 2) weekly	
				schedule should only be 15	
No document o	hanges			WEEKS,	
Department	Approved	CLAS -	Jane Southworth		10/24/2019
		Geography			
		011609000			
Population_GIS	6_GIS4XXX_	Syllabus_General.p	odf		10/23/2019
Population_GIS	S_GIS5XXX_	Syllabus_General.p	odf		10/23/2019
UCC_Ext_Con	sult_GIS_4X	XX_POPULATION	GIS.pdf		10/23/2019
College	Approved	of Liberal Arts			11/3/2019
		and Sciences			
No document of	hanges			I	
University	Pending	PV - University			11/3/2019
Curriculum		Curriculum			
Committee		Committee			
No decument o	hangaa	(UCC)			
Statewide	langes				
Course					
Numbering					
System					
No document of	hanges				
Office of the					
Registrar					
Student	nanges				
Academic					
Support					
System					
No document of	hanges				
Catalog					
No document c	hanges				

Original file: Cover sheet.pdf

Step	Status	Group	User	Comment	Updated	
College						
Notified						
No document changes						

Course|New for request 13807

Info

Request: GIS4XXX Population GIS Description of request: This request is for approval of a new GIS course to be taught within the Department of Geography. Submitter: Kevin Ash kash78@ufl.edu Created: 10/23/2019 4:46:05 PM Form version: 2

Responses

Recommended Prefix GIS Course Level 4 Number XXX Category of Instruction Joint (Ugrad/Grad) Lab Code None Course Title Population GIS Transcript Title Population GIS Degree Type Baccalaureate

Delivery Method(s) On-Campus, Online Co-Listing Yes

Co-Listing Explanation This course is co-listed as GIS4XXX—an undergraduate course—and GIS5XXX which is a graduate course. While the two courses will meet together and complete similar assignments and exams, undergraduate and graduate students will be evaluated based on different criteria. Graduate students will be required to lead in-class discussions, complete a longer and more rigorous final project paper, deliver a longer and more comprehensive final project presentation, and graduate students will not be able to consult their notes during exams. **Effective Term** Earliest Available **Effective Year** Earliest Available **Rotating Topic?** No

Amount of Credit 3

S/U Only? No

Contact Type Regularly Scheduled

Weekly Contact Hours 3

Course Description Instruction on geographic and cartographic techniques for geospatial analysis of population, demographic, and socioeconomic data using ArcGIS Pro. Students identify and utilize current and historical secondary population data sources for GIS analysis of population changes, and for mapping of segregation, inequality, and well-being indicators.

Prerequisites GIS 3043(C) or GEO 3430 or GIS 4001(C) or URP 4273(C) or SYD 4020 **Co-requisites** None

Rationale and Placement in Curriculum This course will be unique in the UF catalog as it bridges Geographic Information Systems concepts and skills with concepts, models, and empirical data from population geography and demography. The course progresses from basic knowledge and skills for mapping and analysis of census data and similar demographic and socioeconomic secondary datasets to more advanced concepts and skills such as spatially explicit population projections, longitudinal geospatial analysis, and geospatial analysis of various demographic and socioeconomic indices related to measures of segregation, inequality, and poverty.

The course will be at an advanced level in the existing undergraduate curriculum. It will benefit students who have taken or are concurrently enrolled in GIS3043 Foundations in GIS (or equivalent GIS courses) as they will learn additional GIS concepts and skills relevant for human and humanenvironment geography. It will also benefit students who have expertise in sociology or other social sciences by exposing them to GIS software and geospatial analysis techniques and concepts. The course will serve as an upper level elective course for undergraduate major and minors, including those seeking a Certificate in Geospatial Information Analysis or Medical Geography.

Course Objectives By the end of the course, students will:

• Demonstrate proficiency in the use GIS software for analysis of population, demographic, and socioeconomic data.

Identify and utilize public population data sources for geospatial analyses

• Extend understanding of concepts in population geography—such as demographic trends, migration, urban/rural differences, segregation, and socioeconomic inequality—through application of these concepts in quantitative and geospatial analyses

• Compare and contrast methodologies for the calculation and analysis of demographic and socioeconomic quantitative indicators

• Write a project paper in the style of a peer-reviewed scientific manuscript

Give an oral and visual presentation to communicate their research methods and findings

Constructively critique and discuss recently published peer-reviewed journal articles on the topics of population geography and GIS

Course Textbook(s) and/or Other Assigned Reading There is no course textbook, but students will have assigned readings for discussion in class. The readings will be made available via Canvas. The reading list is provided below.

Week 1: Course introduction, no assigned reading

Week 2:

Martin, D., 2011. Directions in Population GIS, Geography Compass, 5:655-665.

Logan, J.R., 2018. Relying on the Census in Urban Social Science, City & Community, 17:540-549.

Week 3:

Wong, D.W., and M. Sun, 2013. Handling Data Quality Information of Survey Data in GIS: A Case of Using the American Community Survey Data, Spatial Demography, 1:3-16.

Jurjevich, J.R., A.L. Griffin, S.E. Spielman, D.C. Folch, M. Merrick, and N.N. Nagle, 2018. Navigating Statistical Uncertainty: How Urban and Regional Planners Understand and Work With American Community Survey (ACS) Data for Guiding Policy, Journal of the American Planning Association, 84:112-126.

Week 4:

Boeckel, M.A., and S.M. Otterstrom, 2009. From Wilderness to Megalopolis: A Comparative Analysis of County Level Sex Ratios in the United States from 1790 to 1910 Using a Historical GIS, Social Science Computer Review, 27:297-312.

Rutan, D.Q., and M.R. Glass, 2018. The Lingering Effects of Neighborhood Appraisal: Evaluating Redlining's Legacy in Pittsburgh, The Professional Geographer, 70:339-349. Week 5:

Hester, L., X. Shi, and N. Morden, 2012. Characterizing the geographic variation and risk factors of fatal prescription opioid poisoning in New Hampshire, 2003-2007, Annals of GIS, 18:99-108.

Dai, D., Y. Zhang, C.A. Lynch, T. Miller, and M. Shakir, 2013. Childhood drowning in Georgia: A geographic information system analysis, Applied Geography, 37:11-22.

Week 6:

Jia, P., Y. Qiu, and A.E. Gaughan, 2014. A fine-scale spatial population distribution on the Highresolution Gridded Population Surface and application in Alachua County, Florida, Applied Geography, 50:99-107.

Wardrop, N.A., W.C. Jochem, T.J. Bird, H.R. Chamberlain, D. Clarke, D. Kerr, L. Bengtsson, S. Juran, V. Seaman, and A.J. Tatem, 2018. Spatially disaggregated population estimates in the absence of national population and housing census data, Proceedings of the National Academy of Sciences, 115:3529-3537.

Week 7:

Waldorf, B., and A. Kim, 2015. Defining and Measuring Rurality in the US: From Typologies to

Continuous Indices, Workshop on Rationalizing Rural Area Classifications, Keck Center, Washington, DC.

http://sites.nationalacademies.org/cs/groups/dbassesite/documents/webpage/dbasse_167036.pdf

Inagami, S., S. Gao, H. Karimi, M.M. Shendge, J.C. Probst, and R.A. Stone, 2016. Adapting the Index of Relative Rurality (IRR) to Estimate Rurality at the ZIP Code Level: A Rural Classification System in Health Services Research, The Journal of Rural Health, 32:219-227.

Week 8: Midterm exam, no assigned readings

Week 9:

Schultz, J., and J.R. Elliott, 2013. Natural disasters and local demographic change in the United States, Population and Environment, 34:293-312.

McKee, J.J., A.N. Rose, E.A. Bright, T. Huynh, and B.L. Bhaduri, 2015. Locally adaptive, spatially explicit projection of US population for 2030 and 2050, Proceedings of the National Academy of Sciences, 112:1344-1349.

Week 10:

Permanyer, I., 2013. Using Census Data to Explore the Spatial Distribution of Human Development, World Development, 46:1-13.

Hou, J., P.P. Walsh, and J. Zhang, 2015. The dynamics of Human Development Index, The Social Science Journal, 52:331-347.

Week 11:

Franklin, R., 2014. An Examination of the Geography of Population Composition and Change in the United States, 2000-2010: Insights from Geographical Indices and a Shift-Share Analysis, Population, Space and Place, 20:18-36.

Yao, J., D.W.S. Wong, N. Bailey, and J. Minton, 2018. Spatial Segregation Measures: A Methodological Review, Tijdschrift voor Economische en Sociale Geografie, in press. https://doi.org/10.1111/tesg.12305.

Week 12:

Rey, S.J., and R.J. Smith, 2013. A spatial decomposition of the Gini coefficient, Letters in Spatial and Resource Sciences, 6:55-70.

Florida, R., and C. Mellander, 2016. The geography of inequality: Difference and determinants of wage and income inequality across US metros, Regional Studies, 50:79-92.

Week 13:

Porter, J.R., 2012. A Simplified Indicator of Social Well-Being in the United States: Examining the Ecological Impact of Family Formation within a County Level Framework, Social Indicators Research, 108:421-440.

Butler, D.C., S. Petterson, R.L. Phillips, and A.W. Bazemore, 2013. Measures of Social Deprivation That Predict Health Care Access and Need within a Rational Area of Primary Care Service Delivery, Health Services Research, 48:539-559.

Week 14:

Singleton, A.D., and S.E. Spielman, 2014. The Past, Present, and Future of Geodemographic Research in the United States and United Kingdom, The Professional Geographer, 66:558-567.

Major, E., E.C. Delmelle, and E. Delmelle, 2018. SNAPScapes: Using Geodemographic Segmentation to Classify the Food Access Landscape, Urban Science, 2:71.

Week 15: Student presentations, no assigned readings

Weekly Schedule of Topics Week 1: Course Introduction

Week 2: Working with Census Datasets in ArcGIS Pro

Original file: Submitted form version 2.pdf

Week 3: American Community Survey, Uncertainty, & GIS

Week 4: Data Normalization in GIS

Week 5: Small Area Estimation & Geographic Data Smoothing

Week 6: Methods for Mapping Population Density

Week 7: Measuring & Mapping Rurality Using GIS

Week 8: Midterm Exam

Week 9: Longitudinal Population Change Using GIS

Week 10: Mapping the Human Development Index

Week 11: Spatial Segregation & Diversity Indices

Week 12: GIS & Inequality Measures

Week 13: GIS and Indices of Poverty & Deprivation

Week 14: Geodemographic Regionalization

Week 15: Final Project Presentations

Final Exam Date/Time TBA

Links and Policies Attendance: Students are expected to attend class on a regular basis. Absences can be excused with proper documentation according to university policy. Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at:

https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx.

Examination Policies and Reading Days: Course policies are consistent with University policies on during-term exams, final exams, reading days, and make-up exams. Students must notify the instructor as soon as possible in case of absence during an exam and provide documentation as to the reason for the absence. If deemed an excused absence, the student will be permitted a reasonable amount of time to make up the missed exam. More details can be found at https://catalog.ufl.edu/UGRD/academic-regulations/examination-policies-reading-days/.

Grading Policies for Assigning Grade Points: Information on current UF grading policies for assigning grade points may be found at https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx.

Grades of "Incomplete": The current university policy concerning incomplete grades will be followed in this course. An incomplete grade may be assigned at the discretion of the instructor as an interim grade for a course in which you have completed a major portion of the course with a passing grade, been unable to complete course requirements before the end of the term because of extenuating circumstances, and obtained agreement from the instructor and arranged for resolution of the incomplete grade. Instructors are not required to assign incomplete grades.

Email: Each of you has a UF email address. It is vital that you maintain an active UF email account and that you check it often. This tentative syllabus is subject to change, and any changes will be transmitted to you via your UF email account and Canvas (see below). Students should email the instructor if they have questions about any of the lectures, readings, assignments, or exams. You should expect a response within about 24 hours during weekdays. On holidays or weekends, expect a response on the next business day.

Canvas: Course materials such as lectures, readings, the syllabus, and assignment instructions will be available through Canvas (https://elearning.ufl.edu). You will also find all due dates and grades on Canvas. Students must activate their UF GatorLink account in order to use Canvas. If you need help

learning how to perform various tasks related to this course or other courses that utilize Canvas, please consult the above webpage. You may also contact the UF Computing Help Desk at (352) 392-HELP(4357) or helpdesk@ufl.edu.

Online Course Evaluation: Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at https://evaluations.ufl.edu. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results/.

Recordings and Notes: It is not permitted to sell notes or recordings from this class without written consent of the instructor. Nor are students permitted to disseminate recordings of the instructor lecturing or post copies of assignments or exams on the internet.

Disabilities Statement:

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc/) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Academic Conduct Policy: As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity." You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, 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 that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. 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/honorcodes/honorcode.php.

Academic Resources

E-learning technical support, 352-392-4357 (select option 2) or email to Learning-support@ufl.edu. https://lss.at.ufl.edu/help.shtml.

Career Resource Center, Reitz Union, 352-392-1601. Career assistance and counseling. http://www.crc.ufl.edu

Library Support, http://cms.uflib.ufl.edu/ask. Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center, Broward Hall, 352-392-2010 or 352-392-6420. General study skills and tutoring. http://teachingcenter.ufl.edu/

Writing Studio, 302 Tigert Hall, 352-846-1138. Help brainstorming, formatting, and writing papers. http://writing.ufl.edu/writing-studio/

Student Complaints, https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf

Health and Wellness Resources

U Matter, We Care: If you or a friend is in distress, please contact umatter@ufl.edu or 352-392-1575 so that a team member can reach out to the student.

Original file: Submitted form version 2.pdf

Sexual Assault Recovery Servies (SARS), Student Health Care Center, 352-392-1161. More information on resources to help students with sexual violence issues at www.umatter.ufl.edu/sexual_violence

Sexual Harassment, Information on UF policies, awareness, reporting, and counseling at www.hr.ufl.edu/manager-resources/policies-2/sexual-harassment/

Counseling and Wellness Center, http://counseling.ufl.edu/cwc/Default.aspx, 352-392-1575;

University Police Department, 352-392-1111 (or 9-1-1 for emergencies). http://www.police.ufl.edu/

Grading Scheme Class Participation: Class participation will be evaluated based on two components. The first is attendance which will count for 5% of the final grade. Students are expected to attend the lecture and lab portion of the class for each of the 16 days of class during the semester. Students may be excused from absences with appropriate documentation according to the university policy (more information provided in Section IX below). The other 5% of class participation will be discussion of the weekly readings on Canvas and in class. Students will be required to post their own summaries and critiques of the papers and discuss the papers further during class periods.

GIS Assignments: There will be 14 lab assignments which will amount to 40% of the final grade. The grade will be determined using the best 13 grades out of the 14 assignments, with the lowest grade being dropped. Lab assignments will be due one week after they are assigned.

Exams: In total, the two exams will account for 30% of the final grade, 15% each for the Midterm and Final exams. Both exams will be one hour in duration. The exams will be a written format and will cover concepts the students are learning in the course using short answer and essay questions. Undergraduate students will be permitted to consult their written notes during the exams.

Final Project: For the final project, students will use one or more of the GIS methods for analysis of population data covered in the course to perform their own analysis for a location and context of their choosing. The final project paper should be about 2500 words in length and include at least 10 academic citations, data tables, and maps and graphs as appropriate. The class project will be worth 20% of the total grade. The majority of the points (15 out of the 20 percentage points) will be related to the paper which each student will write. The remaining 5 percentage points will be for an 8 minute presentation given in the last class period of the semester. More detailed instructions about the final project will be provided to students via Canvas and in class.

Assignments and Exams & Percent of Final Grade Class Participation 10% Lab Assignments 40% Final Project 20% Exam #1: Midterm 15% Exam #2: Final 15%

Grading Scale (%) 92.5 - 100 A 89.5 - 92.4 A 86.5 - 89.4 B+ 82.5 - 86.4 B 79.5 - 82.4 B- 76.5 - 79.4 C+ 72.5 - 76.4 C 69.5 - 72.5 C- 66.5 - 69.4 D+ 62.5 - 66.4 D 59.5 - 62.4 D-< 59.5 E

Instructor(s) Kevin Ash



GIS 4XXX: Population GIS

Department of Geography College of Liberal Arts & Sciences, University of Florida

COURSE SYLLABUS

Instructor: Office:	Dr. Kevin Ash TUR 3128	Term: Class Meeting Days:	Spring 2019 MW
Phone:	352-294-6956	Class Meeting Hours:	TBD
Email:	kash78@ufl.edu	Class Location:	TUR 3018
Office Hours:	Tues & Wed 2-3 pm, or by appointment	Course Credits:	3 hours

I. Course Overview

This course provides students with basic skills and knowledge to utilize Geographic Information Systems (GIS) to map and analyze population data in geospatial formats that are widely available in the United States and many countries globally from public sources such as censuses and population surveys. Students will benefit from lab assignments using the software ArcGIS Pro (primarily) and other geospatial and quantitative analysis software platforms such GeoDa and R. This course is designed to build upon human geography and population concepts learned in lower level courses by empowering students to perform their own analyses of population data in various geographic contexts. The course thereby will provide critical training and experience for students interested to pursue more advanced applications of GIS utilizing geospatial population data to model human interaction with natural and/or built environments.

The first several weeks of the course will familiarize students with geospatial formats common for secondary population datasets such as census enumeration data, the American Community Survey, and similar publicly available population & socioeconomic surveys. Early assignments will instruct students on how to retrieve these population data, display and analyze them in GIS, how to conduct appropriate data processing steps such as data normalization in the form of rates, percentages, or ratios. Students will also learn to think critically about analysis and display of population data, including how to handle margins of error and mapping in areas with small sample sizes using smoothing methods. In the latter half of the course, students will learn how to conduct longitudinal change analyses with geospatial population datasets, including how to retrieve GIS files from the National Historical GIS database. In the final weeks of the course, we will cover multiple methods for mapping population density and measures of rurality with GIS data, and will learn how to calculate and map sociodemographic indicators pertaining to phenomena such as migration, fertility/mortality rates, segregation, poverty, and income inequality. In the final assignment, students will conduct geodemographic classification using geospatial clustering methods.

NOTE: This course is co-listed as GIS4XXX—an undergraduate course—and GIS5XXX which is a graduate course. While the two courses will meet together and complete similar assignments and exams, undergraduate and graduate students will be evaluated based on different criteria. Graduate students will be required to lead in-class discussions, complete a longer and more rigorous final project paper, deliver a longer and more comprehensive final project presentation, and graduate students will not be able to consult their notes during exams. More details are provided in section VI below.

II. Course Content Objectives

By the end of the course, students will:

- Demonstrate proficiency in the use GIS software for analysis of population, demographic, and socioeconomic data.
- Identify and utilize public population data sources for geospatial analyses

- Extend understanding of concepts in population geography—such as demographic trends, migration, urban/rural differences, segregation, and socioeconomic inequality—through application of these concepts in quantitative and geospatial analyses
- Compare and contrast methodologies for the calculation and analysis of demographic and socioeconomic quantitative indicators
- Write a project paper in the style of a peer-reviewed scientific manuscript
- Give an oral and visual presentation to communicate their research methods and findings
- Constructively critique and discuss recently published peer-reviewed journal articles on the topics of population geography and GIS

III. Student Learning Outcomes

Through the course assignments and exams, students will learn to:

- Independently obtain, process, and map data generated through publicly available censuses and population surveys
- Organize, visualize, and analyze population, demographic, and socioeconomic data using ArcGIS Pro
- Conduct population analyses using a variety of geographic enumeration units
- Normalize population data using appropriate denominators, according to data quality and research goals
- Interpret and formulate conclusions with data that explicitly include uncertainty (survey margins of error)
- Understand and apply geographic data smoothing techniques
- Utilize historical census and survey data for calculation and analyses of population trends
- Map population density using a variety of cartographic techniques, including dasymetric methods
- Define, quantitatively estimate, and map population geographic patterns of rurality, segregation, inequality, human well-being, and poverty
- Generate a geodemographic classification using clustering methods

IV. Materials and Supplies: Laptop Computer

This course will be held in TUR 3018, which is a studio classroom with no computer terminals. <u>Students must provide their</u> <u>own laptop computer on which to work on assignments and exams during and/or outside of class</u>. Any required software (such as ArcGIS Pro) will be available on students' laptops through UF Apps at <u>https://info.apps.ufl.edu</u> or through student versions provided by the instructor.

V. Required Texts and Useful Online Resources

There is no required textbook for this course. The instructor will assign readings on a weekly basis and these will be available via Canvas. Citations for the required readings are provided at the end of this document.

VI. Course Format, Activities, and Basis for Evaluation

Class Participation: Class participation will be evaluated based on two components. The first is attendance which will count for 5% of the final grade. Students are expected to attend the lecture and lab portion of the class for each of the 16 days of class during the semester. Students may be excused from absences with appropriate documentation according to the university policy (more information provided in Section IX below). The other 5% of class participation will be discussion of the weekly readings on Canvas and in class. Students will be required to post their own summaries and critiques of the papers and discuss the papers further during class periods.

Rubric for Evaluation: Online Readings Summaries/Critiques

Task: Write a 300-500 word summary and critique of the weekly assigned readings and submit it via Canvas prior to class. Consult the rubric below to make sure you include all required elements to receive full credit. (Adapted from two sources: Solan & Linardopoulos 2011, <u>http://jolt.merlot.org/vol7no4/linardopoulos 1211.htm</u>; Reflection/Discussion Critique Rubric, <u>http://www.rcampus.com/rubricshowc.cfm?sp=yes&code=D97AAC&</u>.

	Evaluation Category	Standards for Excellent Work	Points	Instructor Comments
--	---------------------	------------------------------	--------	---------------------

Summary of Key Concepts	 Demonstrate comprehension of key concepts from readings Recognize & define key concepts in summary Use terms & concepts appropriately in context 	/4	
Evaluation & Synthesis of Key Concepts	-Construct generalized judgments and/or arguments about key concepts in readings -Support arguments using specific instances or examples from the readings	/6	
Critique Strategies	 -Employ one or more critique strategies such as: Compare/contrast between readings Deconstruction of language or logic Identification of methodological shortcomings 	/6	
Writing & Communication Proficiency	 Organize writing with clear structure: Introduction Body Conclusion Avoid spelling, grammar, syntax, punctuation, or other writing errors 	/4	

GIS Assignments: There will be 14 lab assignments which will amount to 40% of the final grade. The grade will be determined using the best 13 grades out of the 14 assignments, with the lowest grade being dropped. Lab assignments will be due one week after they are assigned.

Exams: In total, the two exams will account for 30% of the final grade, 15% each for the Midterm and Final exams. Both exams will be one hour in duration. The exams will be a written format and will cover concepts the students are learning in the course using short answer and essay questions. Undergraduate students will be permitted to consult their written notes during the exams.

Final Project: For the final project, students will use one or more of the GIS methods for analysis of population data covered in the course to perform their own analysis for a location and context of their choosing. The final project paper should be about 2500 words in length and include at least 10 academic citations, data tables, and maps and graphs as appropriate. The class project will be worth 20% of the total grade. The majority of the points (15 out of the 20 percentage points) will be related to the paper which each student will write. The remaining 5 percentage points will be for an 8 minute presentation given in the last class period of the semester. More detailed instructions about the final project will be provided to students via Canvas and in class.

Assignments and Exams (GIS4XXX)	Percent of Final Grade
Class Participation	10%
Lab Assignments	40%
Final Project	20%
Exam #1: Midterm	15%
Exam #2: Final	15%

Grading Scale (%)		
92.5-100	А	
89.5-92.4	A-	
86.5-89.4	B+	
82.5-86.4	В	
79.5-82.4	B-	
76.5 – 79.4	C+	
72.5 – 76.4	С	
69.5 – 72.5	C-	
66.5-69.4	D+	
62.5-66.4	D	
59.5-62.4	D-	
< 59.5	E	

VII. Important Dates to Remember: The due dates below are tentative and can be changed at the discretion of the instructor.

Drop/Add Ends:
No Class, MLK Day*
Midterm Exam
No Class, Spring Break
Reading Days
Final Project Due
Final Exam
Spring 2019 Grades Visible on https://one.uf.edu/dashboard/

Fri, Jan 11th 2019 Mon, Jan 21st 2019 **Wed, Feb 27th 2019** Mon-Fri, Mar 4th-8th 2019 Thurs-Fri, Apr 25-26th 2019 **Mon, Apr 29th 2019 Thurs, May 2nd 2019** Wed, May 8th 2019

VIII. Weekly Topic Schedule, Assignments, and Exams (Schedule is provisional and subject to change)

Date	Day	Class Topics & Assignments	Read Before Class
Week 1	М	Course Introduction; GIS Assignment #1	None
Week 2	М	Working with Census Datasets in ArcGIS; GIS Assignment #2; Assignment #1 due	Martin 2011; Logan 2018
Week 3	М	American Community Survey, Uncertainty, & GIS; GIS Assignment #3; Assignment #2 due	Wong & Sun 2013; Jurjevich et al. 2018
Week 4	М	Data Normalization in GIS; GIS Assignment #4; Assignment #3 due	Boeckel & Otterstrom 2009; Rutan & Glass 2018
Week 5	М	Small Area Estimation & Geographic Data Smoothing; GIS Assignment #5; Assignment #4 due	Hester et al. 2012; Dai et al. 2013
Week 6	М	Methods for Mapping Population Density; GIS Assignment #6; Assignment #5 due	Jia et al. 2014; Wardrop et al. 2018
Week 7	М	Measuring & Mapping Rurality Using GIS; GIS Assignment #7; Assignment #6 due	Waldorf & Kim 2015; Inagami et al. 2016

Week 8	М	Midterm Exam		
Week 9	м	Longitudinal Population Change Using GIS;	Schultz & Elliott 2013; McKee et al.	
Weeks	101	GIS Assignment #9; Assignment #8 due	2015	
		Mapping the Human Development Index; GIS		
Week 10	Μ	Assignment #10;	Permanyer 2013; Hou et al. 2015	
		Assignment #9 due		
		Spatial Segregation & Diversity Indices; GIS Assignment	Eranklin 2014: Vac at al. 2018	
VVEEK 11	101	#11; Assignment #10 due	Frankin 2014; Yao et al. 2018	
Wook 12 M		GIS & Inequality Measures; GIS Assignment #12;	Rey & Smith 2013; Florida & Mellander	
Week 12	IVI	Assignment #11 due	2016	
Wook 12	N.4	GIS and Indices of Poverty & Deprivation; GIS	Portor 2012, Butler et al. 2012	
Week 13	IVI	Assignment #13; Assignment #12 due	Porter 2012, Butler et al. 2013	
		Geodemographic Regionalization; GIS Assignment #14;	Singleton & Spielman 2014; Major et	
WEEK 14	IVI	Assignment #13 due	al. 2018	
Week 15	М	Assignment #14, Final Project Presentations, and Final Project Papers Due		
Exam	2	Final Exam Data /Time TPA		
Week	f	Final Exam Date/ Time		

IX. Course Policies: Attendance, Make-Ups, and Grades

Attendance: Students are expected to attend each and every class period. Absences can be excused with proper documentation according to university policy. Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx.

Examination Policies and Reading Days: Course policies are consistent with University policies on during-term exams, final exams, reading days, and make-up exams. Students must notify the instructor as soon as possible in case of absence during an exam and provide documentation as to the reason for the absence. If deemed an excused absence, the student will be permitted a reasonable amount of time to make up the missed exam. More details can be found at https://catalog.ufl.edu/UGRD/academic-regulations/examination-policies-reading-days/.

Grading Policies for Assigning Grade Points: Information on current UF grading policies for assigning grade points may be found at https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx.

Grades of "Incomplete": The current university policy concerning incomplete grades will be followed in this course. An incomplete grade may be assigned at the discretion of the instructor as an interim grade for a course in which you have completed a major portion of the course with a passing grade, been unable to complete course requirements before the end of the term because of extenuating circumstances, and obtained agreement from the instructor and arranged for resolution of the incomplete grade. Instructors are not required to assign incomplete grades.

X. Course Policies: Technology and Media

Email: Each of you has a UF email address. It is vital that you maintain an active UF email account and that you **check it often**. This tentative syllabus is **subject to change**, and any changes will be transmitted to you via your UF email account and Canvas (see below). Students should email the instructor if they have questions about any of the lectures, readings, assignments, o r exams. You should expect a response within about 24 hours during weekdays. On holidays or weekends, expect a response on the next business day. The instructor will reasonably expect similar time frames for responses to emails sent to students.

Canvas: Course materials such as lectures, readings, the syllabus, and assignment instructions will be available through Canvas (<u>https://elearning.ufl.edu</u>). You will also find all due dates and grades on Canvas. Students must activate their UF GatorLink account in order to use Canvas. If you need help learning how to perform various tasks related to this course or other cours es

that utilize Canvas, please consult the above webpage. You may also contact the UF Computing Help Desk at (352) 392 - HELP(4357) or <u>helpdesk@ufl.edu</u>.

Online Course Evaluation: Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at https://evaluations.ufl.edu. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results/.

Recordings and Notes: It is not permitted to sell notes or recordings from this class without written consent of the instructor. Nor are students permitted to disseminate recordings of the instructor lecturing or post copies of assignments or exams on the internet.

XI. Course Policies: Student Expectations

Disabilities Statement:

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, <u>www.dso.ufl.edu/drc/</u>) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Academic Conduct Policy: As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity." You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, 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 that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. 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/honorcodes/honorcode.php.

XII. Campus Resources for Students:

Academic Resources

E-learning technical support, 352-392-4357 (select option 2) or email to <u>Learning-support@ufl.edu</u>. <u>https://lss.at.ufl.edu/help.shtml</u>.

Career Resource Center, Reitz Union, 352-392-1601. Career assistance and counseling. http://www.crc.ufl.edu

Library Support, <u>http://cms.uflib.ufl.edu/ask</u>. Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center, Broward Hall, 352-392-2010 or 352-392-6420. General study skills and tutoring. <u>http://teachingcenter.ufl.edu/</u>

Writing Studio, 302 Tigert Hall, 352-846-1138. Help brainstorming, formatting, and writing papers. <u>http://writing.ufl.edu/writing-studio/</u>

Student Complaints, https://www.dso.ufl.edu/documents/UF Complaints policy.pdf

Health and Wellness Resources

U Matter, We Care: If you or a friend is in distress, please contact <u>umatter@ufl.edu</u> or 352-392-1575 so that a team member can reach out to the student.

Sexual Assault Recovery Servies (SARS), Student Health Care Center, 352-392-1161. More information on resources to help students with sexual violence issues at <u>www.umatter.ufl.edu/sexual_violence</u>

Sexual Harassment, Information on UF policies, awareness, reporting, and counseling at <u>www.hr.ufl.edu/manager-resources/policies-2/sexual-harassment/</u>

Counseling and Wellness Center, http://counseling.ufl.edu/cwc/Default.aspx, 352-392-1575;

University Police Department, 352-392-1111 (or 9-1-1 for emergencies). http://www.police.ufl.edu/

XIII. Assigned Readings Citations:

Boeckel, M.A., and S.M. Otterstrom, 2009. From Wilderness to Megalopolis: A Comparative Analysis of County Level Sex Ratios in the United States from 1790 to 1910 Using a Historical GIS, *Social Science Computer Review*, 27:297-312.

Butler, D.C., S. Petterson, R.L. Phillips, and A.W. Bazemore, 2013. Measures of Social Deprivation That Predict Health Care Access and Need within a Rational Area of Primary Care Service Delivery, *Health Services Research*, 48:539-559.

Dai, D., Y. Zhang, C.A. Lynch, T. Miller, and M. Shakir, 2013. Childhood drowning in Georgia: A geographic information system analysis, *Applied Geography*, 37:11-22.

Florida, R., and C. Mellander, 2016. The geography of inequality: Difference and determinants of wage and income inequality across US metros, *Regional Studies*, 50:79-92.

Franklin, R., 2014. An Examination of the Geography of Population Composition and Change in the United States, 2000-2010: Insights from Geographical Indices and a Shift-Share Analysis, *Population, Space and Place*, 20:18-36.

Hester, L., X. Shi, and N. Morden, 2012. Characterizing the geographic variation and risk factors of fatal prescription opioi d poisoning in New Hampshire, 2003-2007, *Annals of GIS*, 18:99-108.

Hou, J., P.P. Walsh, and J. Zhang, 2015. The dynamics of Human Development Index, *The Social Science Journal*, 52:331-347.

Inagami, S., S. Gao, H. Karimi, M.M. Shendge, J.C. Probst, and R.A. Stone, 2016. Adapting the Index of Relative Rurality (IRR) to Estimate Rurality at the ZIP Code Level: A Rural Classification System in Health Services Research, *The Journal of Rural Health*, 32:219-227.

Jackson, S., R. Porter, and M. Tarrant, 2018. A GIS-Based Analysis of Longitudinal Sociodemographic Change(s) in North Georgia, *Recreation, Parks, and Tourism in Public Health*, 2:91-114.

Jia, P., Y. Qiu, and A.E. Gaughan, 2014. A fine-scale spatial population distribution on the High-resolution Gridded Population Surface and application in Alachua County, Florida, *Applied Geography*, 50:99-107.

Jurjevich, J.R., A.L. Griffin, S.E. Spielman, D.C. Folch, M. Merrick, and N.N. Nagle, 2018. Navigating Statistical Uncertainty: How Urban and Regional Planners Understand and Work With American Community Survey (ACS) Data for Guiding Policy, *Journal of the American Planning Association*, 84:112-126.

- Logan, J.R., B.J. Stults, and Z. Xu, 2016. Validating Population Estimates for Harmonized Census Tract Data, 2000-2010, Annals of the American Association of Geographers, 106:1013-1029.
- Logan, J.R., 2018. Relying on the Census in Urban Social Science, City & Community, 17:540-549.
- Major, E., E.C. Delmelle, and E. Delmelle, 2018. SNAPScapes: Using Geodemographic Segmentation to Classify the Food Access Landscape, *Urban Science*, 2:71.
- Martin, D., 2011. Directions in Population GIS, Geography Compass, 5:655-665.
- McKee, J.J., A.N. Rose, E.A. Bright, T. Huynh, and B.L. Bhaduri, 2015. Locally adaptive, spatially explicit projection of US population for 2030 and 2050, *Proceedings of the National Academy of Sciences*, 112:1344-1349.
- Permanyer, I., 2013. Using Census Data to Explore the Spatial Distribution of Human Development, *World Development*, 46:1-13.
- Porter, J.R., 2012. A Simplified Indicator of Social Well-Being in the United States: Examining the Ecological Impact of Family Formation within a County Level Framework, *Social Indicators Research*, 108:421-440.
- Rey, S.J., and R.J. Smith, 2013. A spatial decomposition of the Gini coefficient, *Letters in Spatial and Resource Sciences*, 6:55-70.
- Rutan, D.Q., and M.R. Glass, 2018. The Lingering Effects of Neighborhood Appraisal: Evaluating Redlining's Legacy in Pitts burgh, *The Professional Geographer*, 70:339-349.
- Schultz, J., and J.R. Elliott, 2013. Natural disasters and local demographic change in the United States, *Population and Environment*, 34:293-312.
- Singleton, A.D., and S.E. Spielman, 2014. The Past, Present, and Future of Geodemographic Research in the United States and United Kingdom, *The Professional Geographer*, 66:558-567.
- Waldorf, B., and A. Kim, 2015. Defining and Measuring Rurality in the US: From Typologies to Continuous Indices, Workshop on Rationalizing Rural Area Classifications, Keck Center, Washington, DC. <u>http://sites.nationalacademies.org/cs/groups/dbassesite/documents/webpage/dbasse_167036.pdf</u>
- Wardrop, N.A., W.C. Jochem, T.J. Bird, H.R. Chamberlain, D. Clarke, D. Kerr, L. Bengtsson, S. Juran, V. Seaman, and A.J. Tatem, 2018. Spatially disaggregated population estimates in the absence of national population and housing census data, *Proceedings of the National Academy of Sciences*, 115:3529-3537.
- Wong, D.W., and M. Sun, 2013. Handling Data Quality Information of Survey Data in GIS: A Case of Using the American Community Survey Data, *Spatial Demography*, 1:3-16.
- Yao, J., D.W.S. Wong, N. Bailey, and J. Minton, 2018. Spatial Segregation Measures: A Methodological Review, *Tijdschriftvoor Economische en Sociale Geografie*, in press. https://doi.org/10.1111/tesg.12305.



GIS 5XXX: Population GIS

Department of Geography College of Liberal Arts & Sciences, University of Florida

COURSE SYLLABUS

Instructor: Office:	Dr. Kevin Ash TUR 3128	Term: Class Meeting Days:	Spring 2019 MW
Phone:	352-294-6956	Class Meeting Hours:	TBD
Email:	kash78@ufl.edu	Class Location:	TUR 3018
Office Hours:	Tues & Wed 2-3 pm, or by appointment	Course Credits:	3 hours

I. Course Overview

This course provides students with basic skills and knowledge to utilize Geographic Information Systems (GIS) to map and analyze population data in geospatial formats that are widely available in the United States and many countries globally from public sources such as censuses and population surveys. Students will benefit from lab assignments using the software ArcGIS Pro (primarily) and other geospatial and quantitative analysis software platforms such GeoDa and R. This course is designed to build upon human geography and population concepts learned in lower level courses by empowering students to perform their own analyses of population data in various geographic contexts. The course thereby will provide critical training and experience for students interested to pursue more advanced applications of GIS utilizing geospatial population data to model human interaction with natural and/or built environments.

The first several weeks of the course will familiarize students with geospatial formats common for secondary population datasets such as census enumeration data, the American Community Survey, and similar publicly available population & socioeconomic surveys. Early assignments will instruct students on how to retrieve these population data, display and analyze them in GIS, how to conduct appropriate data processing steps such as data normalization in the form of rates, percentages, or ratios. Students will also learn to think critically about analysis and display of population data, including how to handle margins of error and mapping in areas with small sample sizes using smoothing methods. In the latter half of the course, students will learn how to conduct longitudinal change analyses with geospatial population datasets, including how to retrieve GIS files from the National Historical GIS database. In the final weeks of the course, we will cover multiple methods for mapping population density and measures of rurality with GIS data, and will learn how to calculate and map sociodemographic indicators pertaining to phenomena such as migration, fertility/mortality rates, segregation, poverty, and income inequality. In the final assignment, students will conduct geodemographic classification using geospatial clustering methods.

NOTE: This course is co-listed as GIS4XXX—an undergraduate course—and GIS5XXX which is a graduate course. While the two courses will meet together and complete similar assignments and exams, undergraduate and graduate students will be evaluated based on different criteria. Graduate students will be required to lead in-class discussions, complete a longer and more rigorous final project paper, deliver a longer and more comprehensive final project presentation, and graduate students will not be able to consult their notes during exams. More details are provided in section VI below.

II. Course Content Objectives

- By the end of the course, students will:
 - Demonstrate proficiency in the use GIS software for analysis of population, demographic, and socioeconomic data.
 - Identify and utilize public population data sources for geospatial analyses

- Extend understanding of concepts in population geography—such as demographic trends, migration, urban/rural differences, segregation, and socioeconomic inequality—through application of these concepts in quantitative and geospatial analyses
- Compare and contrast methodologies for the calculation and analysis of demographic and socioeconomic quantitative indicators
- Write a project paper in the style of a peer-reviewed scientific manuscript
- Give an oral and visual presentation to communicate their research methods and findings
- Constructively critique and discuss recently published peer-reviewed journal articles on the topics of population geography and GIS

III. Student Learning Outcomes

Through the course assignments and exams, students will learn to:

- Independently obtain, process, and map data generated through publicly available censuses and population surveys
- Organize, visualize, and analyze population, demographic, and socioeconomic data using ArcGIS Pro
- Conduct population analyses using a variety of geographic enumeration units
- Normalize population data using appropriate denominators, according to data quality and research goals
- Interpret and formulate conclusions with data that explicitly include uncertainty (survey margins of error)
- Understand and apply geographic data smoothing techniques
- Utilize historical census and survey data for calculation and analyses of population trends
- Map population density using a variety of cartographic techniques, including dasymetric methods
- Define, quantitatively estimate, and map population geographic patterns of rurality, segregation, inequality, human well-being, and poverty
- Generate a geodemographic classification using clustering methods

IV. Materials and Supplies: Laptop Computer

This course will be held in TUR 3018, which is a studio classroom with no computer terminals. <u>Students must provide their</u> <u>own laptop computer on which to work on assignments and exams during and/or outside of class</u>. Any required software (such as ArcGIS Pro) will be available on students' laptops through UF Apps at <u>https://info.apps.ufl.edu</u> or through student versions provided by the instructor.

V. Required Texts and Useful Online Resources

There is no required textbook for this course. The instructor will assign readings on a weekly basis and these will be available via Canvas. Citations for the required readings are provided at the end of this document.

VI. Course Format, Activities, and Basis for Evaluation

Class Participation: Class participation will be evaluated based on two components. The first is atten dance which will count for 5% of the final grade. Students are expected to attend the lecture and lab portion of the class for each of the 16 days of class during the semester. Students may be excused from absences with appropriate documentation according to the university policy (more information provided in Section IX below). The other 10% of class participation will be based on discussion of the weekly readings on Canvas and in class. Students will be required to post their own summaries and critiques of the papers and discuss the papers further during class periods; this will constitute half (5 percentage points) of the 10% participation grade constituted by discussion. Graduate students will be evaluated using the rubric provided on page 3 of the syllabus. For the other 5 percentage points of the 10% based on discussion, graduate students will be responsible for leading the online and in-class discussion at least once during the semester. A rubric for evaluation of discussion leaders is provided below.

Rubric for Evaluation: Online Readings Summaries/Critiques

Task: Write a 300-500 word summary and critique of the weekly assigned readings and submit it via Canvas prior to class. Consult the rubric below to make sure you include all required elements to receive full credit.

(Adapted from two sources: Solan & Linardopoulos 2011, <u>http://jolt.merlot.org/vol7no4/linardopoulos_1211.htm</u>; Reflection/Discussion Critique Rubric, <u>http://www.rcampus.com/rubricshowc.cfm?sp=yes&code=D97AAC&</u>.

Evaluation Category	Standards for Excellent Work	Points	Instructor Comments
Summary of Key Concepts	-Demonstrate comprehension of key concepts from readings -Recognize & define key concepts in summary -Use terms & concepts appropriately in context	/4	
Evaluation & Synthesis of Key Concepts Critique Strategies	 -Construct generalized judgments and/or arguments about key concepts in readings -Support arguments using specific instances or examples from the readings -Employ one or more critique strategies such as: Compare/contrast between readings Deconstruction of language or logic 	/6	
	 Identification of methodological shortcomings 		
Writing & Communication Proficiency	 Organize writing with clear structure: Introduction Body Conclusion Avoid spelling, grammar, syntax, punctuation, or other writing errors 	/4	

Rubric for Evaluation: Leading Class Discussions

(adapted from rubric published by Stevens & Levi 2004, http://www.humber.ca/centreforteachingandlearning/)

Task: Identify key themes for discussion from the two assigned weekly readings. One week before leading your class discussion, select and distribute one additional reading that supplements the two assigned readings. Conduct a 30-minute discussion with the class and use the rubric to assist you in planning and leading the discussion.

Evaluation Category	Standards for Excellent Work	Points	Instructor Comments
Preparation	 -Additional reading given out a week before discussion -Focus questions given at least 3 full days prior to discussion 	/3	
Content	 Themes of readings summarized clearly via email and at beginning of discussion Additional reading relevant & appropriate for weekly topic 	/4	

Discussion & Debate Methods	 Engage students & promote participation Make sure everyone contributes and no one dominates Maintain professional & constructively positive tone to discussion Promote alternative viewpoints to diversify & broaden discussion Highlight key points of debate & why they are important Use different discussion formats such as with pairs or small groups Promote debate on theoretical & methodological strengths & weaknesses Promote rigorous critique of ideas & methods, not of people Encourage synthesis of themes across readings as part of discussion summary 	/5	
Discussion Guiding Questions	 Be challenging & thought provoking Use understandable language Use references to specific passages from the readings Ask questions that take discussion in fruitful new directions Use questions to identify frontiers of current knowledge 	/5	
Facilitation Skills	 -Respectful attention & eye contact -Active listening -Asking respectfully for clarification -Paraphrasing to aid understanding -Redirecting questions to various students -Tactfully steer discussion to remain on topic, if needed -Summarizing themes to conclude 	/3	
		/20	

GIS Assignments: There will be 14 lab assignments which will amount to 35% of the final grade. The grade will be determined using the best 13 grades out of the 14 assignments, with the lowest grade being dropped. Lab assignments will be due one week after they are assigned.

Exams: In total, the two exams will account for 20% of the final grade, 10% each for the Midterm and Final exams. Both exams will be one hour in duration. The exams will be a written format and will cover concepts the students are learning in the course using short answer and essay questions. Graduate students will NOT be permitted to consult any notes during the exams.

Final Project: For the final project, students will use one or more of the GIS methods for analysis of population data covered in the course to perform their own analysis for a location and context of their choosing. The final project paper should be about

3500 words in length and include at least 10 academic citations, data tables, and maps and graphs as appropriate. The class project will be worth 30% of the total grade. The majority of the points (25 out of the 30 percentage points) will be related to the paper which each student will write. The remaining 5 percentage points will be for a 15 minute presentation given in the last class period of the semester. More detailed instructions about the final project will be provided to students via Canvas and in class.

Assignments and Exams (GIS5XXX)	Percent of Final Grade
Class Participation	15%
Lab Assignments	35%
Final Project	30%
Exam #1: Midterm	10%
Exam #2: Final	10%

Grading Scale (%)	
92.5-100	А
89.5-92.4	A-
86.5-89.4	B+
82.5-86.4	В
79.5-82.4	B-
76.5 – 79.4	C+
72.5 – 76.4	С
69.5 – 72.5	C-
66.5-69.4	D+
62.5-66.4	D
59.5-62.4	D-
< 59.5	E

VII. Important Dates to Remember: The due dates below are tentative and can be changed at the discretion of the instructor.

Drop/Add Ends:	Fri, Jan 11 th 2019
No Class, MLK Day*	Mon, Jan 21 st 2019
Midterm Exam	Wed, Feb 27 th 2019
No Class, Spring Break	Mon-Fri, Mar 4 th -8 th 2019
Reading Days	Thurs-Fri, Apr 25-26 th 2019
Final Project Due	Mon, Apr 29 th 2019
Final Exam	Thurs, May 2 nd 2019
Spring 2019 Grades Visible on https://one.uf.edu/dashboard/	Wed, May 8 th 2019

VIII. Weekly Topic Schedule, Assignments, and Exams (Schedule is provisional and subject to change)

Date	Day	Class Topics & Assignments	Read Before Class
Week 1	Μ	Course Introduction; GIS Assignment #1	None
Week 2	м	Working with Census Datasets in ArcGIS; GIS Assignment	Martin 2011 · Logan 2018
Treek 2		#2; Assignment #1 due	Martin 2011) Logan 2010
Week 3	М	American Community Survey, Uncertainty, & GIS; GIS	Wong & Sun 2013: Jurievich et al. 2018
WCCK 5	101	Assignment #3; Assignment #2 due	
Week 4	N.4	Data Normalization in GIS; GIS Assignment #4;	Boeckel & Otterstrom 2009; Rutan &
vveek 4	IVI	Assignment #3 due	Glass 2018

Week 5	М	Small Area Estimation & Geographic Data Smoothing; GIS Assignment #5; Assignment #4 due	Hester et al. 2012; Dai et al. 2013	
Week 6	М	Methods for Mapping Population Density; GIS Assignment #6; Assignment #5 due	Jia et al. 2014; Wardrop et al. 2018	
Week 7	М	Measuring & Mapping Rurality Using GIS; GIS Assignment #7; Assignment #6 due	Waldorf & Kim 2015; Inagami et al. 2016	
Week 8	М	Midterm Exam		
Week 9	М	Longitudinal Population Change Using GIS; GIS Assignment #9; Assignment #8 due	Schultz & Elliott 2013; McKee et al. 2015	
Week 10	М	Mapping the Human Development Index; GIS Assignment #10; Assignment #9 due	Permanyer 2013; Hou et al. 2015	
Week 11	М	Spatial Segregation & Diversity Indices; GIS Assignment #11; Assignment #10 due	Franklin 2014; Yao et al. 2018	
Week 12	М	GIS & Inequality Measures; GIS Assignment #12; Assignment #11 due	Rey & Smith 2013; Florida & Mellander 2016	
Week 13	М	GIS and Indices of Poverty & Deprivation; GIS Assignment #13; Assignment #12 due	Porter 2012; Butler et al. 2013	
Week 14	М	Geodemographic Regionalization; GIS Assignment #14; Assignment #13 due	Singleton & Spielman 2014; Major et al. 2018	
Week 15	М	Assignment #14, Final Project Presentations, and Final Project Papers Due		
Exam Week	?	Final Exam Date/Time TBA		

IX. Course Policies: Attendance, Make-Ups, and Grades

Attendance: Students are expected to attend each and every class period. Absences can be excused with proper documentation according to university policy. Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx.

Examination Policies and Reading Days: Course policies are consistent with University policies on during-term exams, final exams, reading days, and make-up exams. Students must notify the instructor as soon as possible in case of absence during an exam and provide documentation as to the reason for the absence. If deemed an excused absence, the student will be permitted a reasonable amount of time to make up the missed exam. More details can be found at https://catalog.ufl.edu/UGRD/academic-regulations/examination-policies-reading-days/.

Grading Policies for Assigning Grade Points: Information on current UF grading policies for assigning grade points may be found at https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx.

Grades of "Incomplete": The current university policy concerning incomplete grades will be followed in this course. An incomplete grade may be assigned at the discretion of the instructor as an interim grade for a course in which you have completed a major portion of the course with a passing grade, been unable to complete course requirements before the end of the term because of extenuating circumstances, and obtained agreement from the instructor and arranged for resolution of the incomplete grade. Instructors are not required to assign incomplete grades.

X. Course Policies: Technology and Media

Email: Each of you has a UF email address. It is vital that you maintain an active UF email account and that you **check it often**. This tentative syllabus is **subject to change**, and any changes will be transmitted to you via your UF email account and Canvas (see below). Students should email the instructor if they have questions about any of the lectures, readings, assignments, or

exams. You should expect a response within about 24 hours during weekdays. On holidays or weekends, expect a response on the next business day. The instructor will reasonably expect similar time frames for responses to emails sent to students.

Canvas: Course materials such as lectures, readings, the syllabus, and assignment instructions will be available through Canvas (<u>https://elearning.ufl.edu</u>). You will also find all due dates and grades on Canvas. Students must activate their UF GatorLink account in order to use Canvas. If you need help learning how to perform various tasks related to this course or other courses that utilize Canvas, please consult the above webpage. You may also contact the UF Computing Help Desk at (352) 392 - HELP(4357) or <u>helpdesk@ufl.edu</u>.

Online Course Evaluation: Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at https://evaluations.ufl.edu. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results/.

Recordings and Notes: It is not permitted to sell notes or recordings from this class without written consent of the instructor. Nor are students permitted to disseminate recordings of the instructor lecturing or post copies of assignments or exams on the internet.

XI. Course Policies: Student Expectations

Disabilities Statement:

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, <u>www.dso.ufl.edu/drc/</u>) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Academic Conduct Policy: As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity." You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, 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 that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. 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/honorcodes/honorcode.php.

XII. Campus Resources for Students:

Academic Resources

E-learning technical support, 352-392-4357 (select option 2) or email to <u>Learning-support@ufl.edu</u>. <u>https://lss.at.ufl.edu/help.shtml</u>.

Career Resource Center, Reitz Union, 352-392-1601. Career assistance and counseling. http://www.crc.ufl.edu

Library Support, <u>http://cms.uflib.ufl.edu/ask</u>. Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center, Broward Hall, 352-392-2010 or 352-392-6420. General study skills and tutoring. http://teachingcenter.ufl.edu/

Writing Studio, 302 Tigert Hall, 352-846-1138. Help brainstorming, formatting, and writing papers. <u>http://writing.ufl.edu/writing-studio/</u>

Student Complaints, https://www.dso.ufl.edu/documents/UF Complaints policy.pdf

Health and Wellness Resources

U Matter, We Care: If you or a friend is in distress, please contact <u>umatter@ufl.edu</u> or 352-392-1575 so that a team member can reach out to the student.

Sexual Assault Recovery Servies (SARS), Student Health Care Center, 352-392-1161. More information on resources to help students with sexual violence issues at <u>www.umatter.ufl.edu/sexual_violence</u>

Sexual Harassment, Information on UF policies, awareness, reporting, and counseling at <u>www.hr.ufl.edu/manager-resources/policies-2/sexual-harassment/</u>

Counseling and Wellness Center, http://counseling.ufl.edu/cwc/Default.aspx, 352-392-1575;

University Police Department, 352-392-1111 (or 9-1-1 for emergencies). http://www.police.ufl.edu/

XIII. Assigned Readings Citations:

- Boeckel, M.A., and S.M. Otterstrom, 2009. From Wilderness to Megalopolis: A Comparative Analysis of County Level Sex Ratios in the United States from 1790 to 1910 Using a Historical GIS, *Social Science Computer Review*, 27:297-312.
- Butler, D.C., S. Petterson, R.L. Phillips, and A.W. Bazemore, 2013. Measures of Social Deprivation That Predict Health Care Access and Need within a Rational Area of Primary Care Service Delivery, *Health Services Research*, 48:539-559.
- Dai, D., Y. Zhang, C.A. Lynch, T. Miller, and M. Shakir, 2013. Childhood drowning in Georgia: A geographic information system analysis, *Applied Geography*, 37:11-22.
- Florida, R., and C. Mellander, 2016. The geography of inequality: Difference and determinants of wage and income inequality across US metros, *Regional Studies*, 50:79-92.
- Franklin, R., 2014. An Examination of the Geography of Population Composition and Change in the United States, 2000-2010: Insights from Geographical Indices and a Shift-Share Analysis, *Population, Space and Place*, 20:18-36.
- Hester, L., X. Shi, and N. Morden, 2012. Characterizing the geographic variation and risk factors of fatal prescription opioid poisoning in New Hampshire, 2003-2007, *Annals of GIS*, 18:99-108.
- Hou, J., P.P. Walsh, and J. Zhang, 2015. The dynamics of Human Development Index, The Social Science Journal, 52:331-347.
- Inagami, S., S. Gao, H. Karimi, M.M. Shendge, J.C. Probst, and R.A. Stone, 2016. Adapting the Index of Relative Rurality (IRR) to Estimate Rurality at the ZIP Code Level: A Rural Classification System in Health Services Research, *The Journal of Rural Health*, 32:219-227.
- Jackson, S., R. Porter, and M. Tarrant, 2018. A GIS-Based Analysis of Longitudinal Sociodemographic Change(s) in North Georgia, *Recreation, Parks, and Tourism in Public Health*, 2:91-114.
- Jia, P., Y. Qiu, and A.E. Gaughan, 2014. A fine-scale spatial population distribution on the High-resolution Gridded Population Surface and application in Alachua County, Florida, *Applied Geography*, 50:99-107.

- Jurjevich, J.R., A.L. Griffin, S.E. Spielman, D.C. Folch, M. Merrick, and N.N. Nagle, 2018. Navigating Statistical Uncertainty: How Urban and Regional Planners Understand and Work With American Community Survey (ACS) Data for Guiding Policy, *Journal of the American Planning Association*, 84:112-126.
- Logan, J.R., B.J. Stults, and Z. Xu, 2016. Validating Population Estimates for Harmonized Census Tract Data, 2000-2010, Annals of the American Association of Geographers, 106:1013-1029.
- Logan, J.R., 2018. Relying on the Census in Urban Social Science, *City & Community*, 17:540-549.
- Major, E., E.C. Delmelle, and E. Delmelle, 2018. SNAPScapes: Using Geodemographic Segmentation to Classify the Food Access Landscape, *Urban Science*, 2:71.
- Martin, D., 2011. Directions in Population GIS, Geography Compass, 5:655-665.
- McKee, J.J., A.N. Rose, E.A. Bright, T. Huynh, and B.L. Bhaduri, 2015. Locally adaptive, spatially explicit projection of US population for 2030 and 2050, *Proceedings of the National Academy of Sciences*, 112:1344-1349.
- Permanyer, I., 2013. Using Census Data to Explore the Spatial Distribution of Human Development, *World Development*, 46:1-13.
- Porter, J.R., 2012. A Simplified Indicator of Social Well-Being in the United States: Examining the Ecological Impact of Family Formation within a County Level Framework, *Social Indicators Research*, 108:421-440.

Rey, S.J., and R.J. Smith, 2013. A spatial decomposition of the Gini coefficient, Letters in Spatial and Resource Sciences, 6:55-70.

- Rutan, D.Q., and M.R. Glass, 2018. The Lingering Effects of Neighborhood Appraisal: Evaluating Redlining's Legacy in Pitts burgh, *The Professional Geographer*, 70:339-349.
- Schultz, J., and J.R. Elliott, 2013. Natural disasters and local demographic change in the United States, *Population and Environment*, 34:293-312.
- Singleton, A.D., and S.E. Spielman, 2014. The Past, Present, and Future of Geodemographic Research in the United States and United Kingdom, *The Professional Geographer*, 66:558-567.
- Waldorf, B., and A. Kim, 2015. Defining and Measuring Rurality in the US: From Typologies to Continuous Indices, Workshop on Rationalizing Rural Area Classifications, Keck Center, Washington, DC. <u>http://sites.nationalacademies.org/cs/groups/dbassesite/documents/webpage/dbasse_167036.pdf</u>
- Wardrop, N.A., W.C. Jochem, T.J. Bird, H.R. Chamberlain, D. Clarke, D. Kerr, L. Bengtsson, S. Juran, V. Seaman, and A.J. Tatem, 2018. Spatially disaggregated population estimates in the absence of national population and housing census data, *Proceedings of the National Academy of Sciences*, 115:3529-3537.
- Wong, D.W., and M. Sun, 2013. Handling Data Quality Information of Survey Data in GIS: A Case of Using the American Community Survey Data, *Spatial Demography*, 1:3-16.
- Yao, J., D.W.S. Wong, N. Bailey, and J. Minton, 2018. Spatial Segregation Measures: A Methodological Review, *Tijdschriftvoor Economische en Sociale Geografie*, in press. https://doi.org/10.1111/tesg.12305.

UF FLORIDA

UCC: External Consultations

(ternal Consultation Results (departments with potential overlap or interest in proposed course, if any)		
Department	Name and Title	
Phone Number	E-mail	
Comments		
Department	Name and Title	
Phone Number	E-mail	
Comments		
Department	Name and Title	
Phone Number	E-mail	
Comments		