GGS 704 Spatial Analysis and Modeling of Population/Spatial Demography

Spring 2016, Tuesdays 7:20 – 10:00 pm, Exploratory 2310
Professor David Wong
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Office Hour: Mondays 11am - noon, Tuesdays, 5-6 pm or by appointment

"Demography is Destiny". While the validity of that statement is debatable, it is quite certain that all issues or problems on earth are somehow related to human. People are not distributed evenly across the earth surface and people in different places are different. This course will review demographic concepts, provide students an understanding of the spatial aspects of population, and discuss some spatial analytical techniques and spatial models to study population. Some of these techniques are indices or measures to quantify different characteristics of the population, such as location quotient and segregation indices. Some techniques focus on modeling population changes and population spatial dynamics (such as spatial interaction models). Exposure to and developing a comprehension of these spatial techniques will allow students to analyze population issues/problems. Both descriptive and analytical techniques will be covered. The primary **objective** is to provide students a solid background to understand population issues in general, and an exposure to the spatial dimension in analyzing population issues.

Outcome: After finishing this course, students are expected to have a better appreciation of global and local population issues. The students are also expected to develop a basic understanding of major population theories, models, and methods, both spatial and aspatial, in analyzing population, and be aware of sources of population data. Therefore, students will be evaluated by how much they comprehend these aspects and how well they can apply the knowledge acquired to analyze and interpret data and situations.

Text: Lundquist, J. H., D. L. Anderton, and D. Yaukey 2015. *Demography: The Study of Human Population*. Waveland Press.

Major References:
Clark, W. A. V. (1986) *Human Migration*. Sage Publications.
Howell, F. M., J. R. Porter and S. A. Matthews (2015) *Recapturing Space: New Middle-Range Theory in Spatial Demography*. Springer.
Newbold, K. B. (2013) *Population Geography: Tools and Issues*. Rowman & Littlefield.
Peters, G. L. and R. P. Larkin (2010) *Population Geography: Problems, Concepts, and Prospects*. Kendall/Hunt Publishing Company.
Plane, D. A. and R. A. Rogerson (1994) *The Geographical Analysis of Population with Applications to Planning and Business*. Wiley & Sons. (PR)
Porter, J. R. and F. M. Howell. (2012) *Geographical Sociology: theoretical foundations and methodological applications in the sociology of location*. Springer.
Rogers, A. (1985) *Regional Population Projection Models*. Sage Publications.
Weeks, J. R. (2015, 12th ed.) *Population: An Introduction to Concepts and Issues*. Wadsworth.

Assessment Methods:

3 Article Reviews	30 (10 each)
3 exercises	30 (in total)
Term Paper/Project/Presentation	40

Total points based upon the selection will be prorated to 100 points as the final course score. Distribution of the total final scores will be used to determine the final grades. Percentages of students receiving the corresponding grades are approximately: 25-50% (A), 50 – 75% (B), ??% (C and others)

Reviews: at the end of each month (Feb, March, and April), each student submits a review (750-1000 words) of an article on a population topic/issue published in reputable **newspapers or magazines** (only) during that month, or an article in an **academic journal**, demonstrating the relevancy of course material in understanding daily population issues.

* All materials submitted to meet the evaluation criteria should be done in accordance with the student Honor Code (University Catalog). Also no "double dipping" of term paper/project is allowed unless permission is secured.

Incomplete will be handled strictly according to the University policy. Make-up exams are not given unless under unusual circumstances such as serious illness. Proof (documentation) is necessary to be eligible for make-up exams. No <u>early</u> exams will be given. **Final exam: May 10.**

Major Topics:

(1) Introduction (Ch. 1)
What is Human Geography? Systematic Geography? Population Geography?
Population Geography vs. Demography vs. Population Statistics vs. Spatial Demography
Importance of Population Geography/Demography
Population and Environment

(2) Data Sources, Internet Resources, Census Geography (Ch. 2)
International
United States: Census and Census Geography (US)
SFs, PUMS, and American Community Survey
Issues on Spatial Data Quality

(3) Global Population: through space and time (Ch. 3)
Current population distribution
Historical growth
Theories and modeling population growth/decline
(Ex. 1 Modeling growth and global population pattern)

(4) Demographic Characteristics
Age, Sex and Race/Ethnicity (Ch. 4, 11)
Mortality (Ch. 5, 6)

Fertility (Ch. 7)
(Ex.2 Analysis of demographic characteristics)

(5) Spatial Distribution of Population
Urban Geography (Ch. 10)
Measures of Population Distribution
Segregation and Integration
Location Quotient
(Ex. 3 Spatial Analysis of Population)

(6) Dynamics of Population: Mobility/Migration (Ch. 9)
Defining migration
Theories of migration
Internal migration
International migration
Residential mobility