



EXTENDED CAMPUS

COLLEGE of PROFESSIONAL
and CONTINUING STUDIES

GEOG 5113-101: Quantitative Methods in Geographical Research

Course Description:

Statistics is pervasive in our everyday lives whether we recognize it as such or not. Market reports, opinion polls, political analysis, environmental and economic reports all use (and misuse) statistics and statistical data. Professionally, statistics is very widely used in research and is almost indispensable for summarizing, characterizing, revealing, and understanding hidden patterns and relationships in data. Therefore, understanding basic statistical concepts is important, even necessary, in helping you make sense of your world. This course will help you develop or improve your statistical literacy by emphasizing concepts and critical thinking over computation. Emphasis will be placed on the logic of the scientific method and how to analyze data to identify patterns and draw valid conclusions

Class Dates, Location and Hours:

Dates: July 29 – August 4, 2019

Location: Hurlburt Field, Florida. Class will be held in Bldg. 90220, 221 Lukasik Ave.

Hours: Monday - Friday 6:00 p.m.-9:30 p.m.; Saturday 8:00 a.m.-4:30 p.m.; Sunday 8:00 a.m.-12:00 p.m.

Last day to enroll or drop without penalty: June 30, 2019

Site Director:

This military installation is not open to the general public. In order to take courses at this installation, students must have a current military or Department of Defense identification card which allows them to access the installation.

Email: aphurlburt@ou.edu. Phone: 850-581-3000.

Professor Contact Information:

Course Professor: John S. Greene
Mailing Address: 100 East Boyd Street
Sarkeys Energy Center
Norman, OK 73019

Telephone Number: (405) 325-4319

E-mail Address: jgreene@ou.edu

Professor availability: The professor will be available via email to students before and after the class sessions. On-site office hours are half an hour before and after each class session, by appointment.

Textbook(s) and Instructional Materials:

Student materials are available at the OU Bookstore Website at <https://ou.textbookx.com/institutional/index.php>. There is no longer a physical bookstore, the store will remain, but textbooks will not be stocked. The website has book selling, renting, buying, returning, and order tracking capabilities. If you need help with an order, or if you have any questions contact the toll-free phone at 1-(855)-790-6637, agents are available from 9a – 5p (EST) Monday – Friday. For more information or questions about textbooks, feel free to contact apsyllabi@ou.edu. Text prices are available online

1. Bennett, J.O., Briggs, W., & Triola, M.F. (2017). *Statistical reasoning for everyday life* (5th ed.). Boston: Addison-Wesley. ISBN 9780134494043 (Text prices are available online.)
2. Materials posted on the OU Canvas learning management system: Access Canvas at <https://canvas.ou.edu>, enter your OU NetID and password, and select course to access material. If you require assistance with Canvas, please click on the Help icon. You can search the Canvas guides, chat with Canvas support, or contact OU IT. Materials will be posted no later than one month before the start of the class.

Course Objectives:

The objective of this course is to gain an understanding of statistical principles and their uses. We will learn how to collect data, summarize data, examine data for patterns and relationships, and analyze data so we can draw conclusions. We will also learn to interpret and judge statistical information, including information embedded in computer output.

Course Outline:

- I. Understanding Data and the Research Process (1-2)
 - a. Types of Statistical Studies
 - b. Sampling
 - c. Data Types and Measurements
 - d. Dealing with errors
- II. Describing Data (3-5)
 - a. Frequency Tables
 - b. Picturing Distributions
 - c. Shapes of Distributions
 - d. Measures of Variation
 - e. Normality and the Central Limit Theorem
- III. Understanding Probability and Relationships (6-7)
 - a. Probability
 - b. Variables, Relationships, Measurement, Reliability and Validity
 - c. Correlation and Causation
- IV. Statistical Inference (8-9)
 - a. Sampling Distributions
 - b. Estimating population means and proportions
 - c. Hypothesis Testing
- V. Practical Use of Statistics (10)
 - a. t-tests, Two way Tables and ANOVA
 - b. Hypothesis testing with two-way Tables

Assignments, Grading and Due Dates:

The course format is lecture and group discussion.

Pre-Seminar Assignment:

The pre-class assignment is to bring to class an article from the popular literature (e.g., newspaper, magazine, Internet) that uses statistics. Write up a brief description (two pages) of the use of statistics in the article. Explain what the article means, and evaluate their results. This includes thinking about the following questions: Do the authors do a good job of explaining what's involved? Do the conclusions follow from the information given? Do you consider this a good use or a bad use of statistics? What additional information would you like to have? Be prepared to discuss the article and its use of statistics on the first night of class. This will be worth 10% of your course grade.

1. The second pre-class assignment is to download and install a trial version of the software SPSS. The trial version only lasts for a short time period, so please do **this as close to the start date of the class as possible**. For this assignment I need you to make sure that you install SPSS on a laptop that you can use in class. This will be worth 5% of your course grade.
2. Participation: thoughtful participation throughout the course will help solidify your learning, as well

as adding to the educational environment. This will include a number of assignments and activities to be completed in class during the week and will be worth 30% of your course grade.

3. A final examination will be given in class on the last day. This will be based on material covered during the class discussions and may also require elaboration or extension of these materials and ideas. This will be worth 25% of your course grade.

Post-seminar assignment

The post-seminar assignment is to prepare a comparative critique (8-10 pages) of four studies published in a journal related to international relations (e.g., Political Studies, European Journal of International Relations, International Relations, etc.) journal during the last five years. The paper should describe the studies, and point out the comparative strengths and weaknesses of each, relative to a student-generated set of criteria for what comprises a good study, based on the material and discussion that we have had in class. Also attach a PDF copy of each study, or provide an appropriate link. Recall that one key goal of this class is to promote statistical literacy. With that in mind, read the papers with an eye for understanding the statistical methods and focus on the following: a) What are they measuring? b) What conclusions did they come to? c) Compare Evaluate their results i) Do the authors do a good job of explaining what's involved? ii) Do the conclusions follow from the information given? iii) Do you consider this a good use or a bad use of statistics? Why? iv) Please list at least three examples of additional information or analysis you would like to see. **Due Date: August 18, 2019** This will be worth 30% of your overall grade.

Grading:

This is a letter-graded course: A, B, C, D, or F.

Notice: Failure to meet assignment due dates could result in a grade of I (Incomplete) and may adversely impact Tuition Assistance and/or Financial Aid.

POLICIES AND NOTICES

Attendance/Grade Policy

Attendance and participation in interaction, individual assignments, group exercises, simulations, role playing, etc. are valuable aspects of any course because much of the learning comes from discussions in class with other students. It is expected that you attend all classes and be on time except for excused emergencies.

Excused absences are given for professor mandated activities or legally required activities such as emergencies or military assignments. It is the policy of the University to excuse absences of students that result from religious observances and to provide without penalty for the rescheduling of examinations and additional required class work that may fall on religious holidays. Unavoidable personal emergencies, including (but not limited to) serious illness; delays in getting to class because of accidents, etc.; deaths and funerals, and hazardous road conditions will be excused.

If you are obtaining financial assistance (TA, STAP, FA, VA, Scholarship, etc.) to pay all or part of your tuition cost, you must follow your funding agency/institution's policy regarding "I" (Incomplete) grades unless the timeline is longer than what the University policy allows then you must adhere to the University policy. Students who receive Financial Aid must resolve/complete any "I" (Incomplete) grades by the end of the term or he/she may be placed on "financial aid probation." If the "I" grade is not resolved/completed by the end of the following term, the student's Financial Aid may be suspended making the student ineligible for further Financial Aid.

Students are responsible for meeting the guidelines of Tuition Assistance and Veterans Assistance. See the education counselor at your local education center for a complete description of your TA or VA requirements.

Academic Integrity and Student Conduct

Academic integrity means honesty and responsibility in scholarship. Academic assignments exist to help students learn; grades exist to show how fully this goal is attained. Therefore all work and all grades should result from the student's own understanding and effort.

Academic misconduct is any act which improperly affects the evaluation of a student's academic performance or achievement. Misconduct occurs when the student either knows or reasonably should know that the act constitutes misconduct. Academic misconduct includes: cheating and using unauthorized materials on examinations and other assignments; improper collaboration, submitting the same assignment for different classes (self-plagiarism); fabrication, forgery, alteration of documents, lying, etc...in order to obtain an academic advantage; assisting others in academic misconduct; attempting to commit academic misconduct; destruction of property, hacking, etc...; intimidation and interference with integrity process; and plagiarism. All students should review the Student's Guide to Academic Integrity at http://integrity.ou.edu/students_guide.html

Students and faculty each have responsibility for maintaining an appropriate learning environment. All students should review policies regarding student conduct at <http://studentconduct.ou.edu/>

Accommodation Statement

The University of Oklahoma is committed to making its activities as accessible as possible. For accommodations on the basis of disability, please contact your local OU Site Director.

Adjustment for Pregnancy/Childbirth-Related Issues

Should you need modifications or adjustments to your course requirements because of documented pregnancy-related or childbirth-related issues, please contact me as soon as possible to discuss. Generally, modifications will be made where medically necessary and similar in scope to accommodations based on temporary disability. Please see <http://www.ou.edu/content/eoo/faqs/pregnancy-faqs.html>.

Title IX Resources

For any concerns regarding gender-based discrimination, sexual harassment, sexual misconduct, stalking, or intimate partner violence, the University offers a variety of resources, including advocates on-call 24/7, counseling services, mutual no-contact orders, scheduling adjustments, and disciplinary sanctions against the perpetrator. Please contact the Sexual Misconduct Office at smo@ou.edu or (405) 325-2215 (8-5), or the Sexual Assault Response Team at (405) 615 -0013 (24/7) to report an incident. To learn more about Title IX, please visit the Institutional Equity Office's website at <http://www.ou.edu/content/eoo.html>

Course Policies

Advanced Programs policy is to order books in paperback if available. Courses, dates, and professors are subject to change. Please check with your OU Site Director. Students should retain a copy of any assignments that are mailed to the professor for the course. Advanced Programs does not provide duplicating services or office supplies.

Any and all course materials, syllabus, lessons, lectures, etc. are the property of professor teaching the course and the Board of Regents of the University of Oklahoma and are protected under applicable copyright.

For more information about Advanced Programs, visit our website at: <http://www.goou.ou.edu/>

INSTRUCTOR VITA

John Scott Greene, Ph.D.

Education

- 1994 Ph.D., Climatology, University of Delaware
- 1990 M.A., Geography, University of Hawaii, Manoa
- 1987 B.A., Majors in Applied Mathematics & Geography, University of California, Berkeley

Current Positions

- Advanced Programs Professor since 2000
- Professor of Geography and Environmental Sustainability, University of Oklahoma, Norman, OK
- Associate Chair, Geography and Environmental Sustainability,

Frequently Taught Advanced Programs Courses

- GEOG 6413 Seminar on the Socio-Economic Impacts of Climate Change
- GEOG 5113 Quantitative Methods in Geographic Research
- GEOG 6240 Seminar in Resource Geography

Major Areas of Teaching and Research Interest

- Applied Climatology
- Environmental Impacts of Climate and Climate Change
- Geography of Renewable Energy
- Statistical Techniques

Representative Publications

- Castleberry, B., and J. S. Greene, 2018: Wind Power and Real Estate Prices in Oklahoma, *International Journal of Housing Markets and Analysis*, Vol. (5):808- 827
- Castleberry, B., and J. S. Greene, 2017: Impacts of wind power development on Oklahoma's public schools *J. Energ Sustain Soc*, 7: 34.
- Greene, J.S., and M. Geisken, 2013: Socioeconomic Impacts of A Wind Farm Development: A Case Study of Weatherford, Oklahoma, *Energy, Sustainability, and Society*, 3(2):1-9.
- Greene, J.S., M. Chatelain, Morrissey, M.L., and S. Stadler, 2012: Estimated Changes in Wind Speed and Wind Power Density over the Western High Plains, 1971-2000, *Theoretical and Applied Climatology*, 109:507-518.
- Greene, J.S., Kalkstein, L.S., K. R. Kim, J-Y. Choi, and D. G. Lee, 2016: The Application of the European Heat Wave of 2003 to Korean Cities to Analyze Impacts on Heat-Related Mortality, *International Journal of Biometeorology*, 60(2):231-243.
- Greene, J.S., Kalkstein, LS., Mills, D., and Samenow, J., 2011: An examination of climate change on extreme heat events and climate/mortality relationships in large US cities, *Journal of Weather, Climate, and Society*, 3, 281-292.
- Greene, J.S., M.L. Morrissey, and S. Johnson, 2010: Wind Climatology, Climate Change, and Wind energy, *Geography Compass*, 4/11, 1592-1605.

Representative Honors and Awards Received

- Tromp Scientific Award (This award is given by the International Society of Biometeorology once every three years for outstanding research in biometeorology)
- University of Oklahoma Excellence in Research Award
- University of Oklahoma Teaching Scholars Initiative Award for Outstanding teaching
- University of Oklahoma Regents Award for Superior Teaching
- US Department of Energy National award for Outstanding Wind Energy Research and Outreach