The University of Oklahoma  
College of Continuing Education  
Advanced Programs – Course Syllabus

Course Title:  
Quantitative Methods in Geographical Research

Course Number:  
GEOG 5113-221

Course Description:  
This course is intended to develop statistical literacy in an environment that emphasizes 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 conclusions, rather than on the use of formulas.

Class Dates, Location and Hours:  
Dates:    July 17-22, 2012  
Location: SHAPE, Belgium. See Site Director for classroom location.  
Hours:    Tue-Fri 6:00-9:30 p.m.; Sat-Sun 8:30 a.m.-4:30 p.m.  
Last day to enroll or drop without penalty: June 18, 2012

Site Director:  
Valerie Peterson Borro.  Assistant: Merideth Carter.  Phone: 065-44-3654; DSN 423-3654; DSN Fax: 366-6230; E-mail: apshape@ou.edu

Professor Contact Information:  
Course Professor: Scott Greene, Ph.D.  
Mailing Address: Department of Geography  
University of Oklahoma  
100 E. Boyd St., Suite 684  
Norman, OK 73019  
Telephone Number: (405) 325-4319  
Fax Number: (405) 325-6090  
E-mail Address: jgreene@ou.edu  
Professor availability: The professor will be available via e-mail 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 Follett/AP Bookstore located in the Oklahoma Memorial Union, 900 Asp Ave., Norman, OK. Orders can be placed online at www.oklahomaunion.bkstr.com or by telephone at 866-369-9713 (toll free in the U.S.) or 405-325-5960 (outside the U.S.). E-mail orders may be sent to oklahomaunion@bkstr.com. Representatives are available from 8 a.m. to 6 p.m. CST Monday through Thursday and 8 a.m. to 5 p.m. CST on Friday. Summer hours: 8 a.m. to 4 p.m. CST. Faxed orders may be placed 24 hours a day to 866-223-5607 (toll free in the U.S.) or 405-325-7140 (outside the U.S.).


Note: The Follett/AP Bookstore is the Advanced Programs contractual textbook provider. Should text changes become necessary after publication of the course syllabus, Advanced Programs will facilitate text returns/refunds only for texts purchased through the Follett/AP Bookstore.

**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.

**Class Schedule**

I. Understanding Data and the Research Process  
   a) Types of Statistical Studies  
   b) Sampling  
   c) Data Types and Measurements

II. Describing Data  
   a) Picturing Distributions  
   b) Shapes of Distributions  
   c) Measures of Variation  
   d) Normality and the Central Limit Theorem

III. Understanding Relationships  
   a) Variables, Relationships, Measurement, Reliability and Validity  
   b) Correlation and Causation

IV. Statistical Inference  
   a) From Samples to Populations  
   b) Hypothesis Testing

**Assignments, Grading and Due Dates:**
The course format is lecture and group discussion.

1. Short assignments will earn 20% of your grade. This includes the assignments due the first day of class, as well as additional in-class assignments. These assignments will usually be extensions or modification of one of the discussion questions dealt with in class or raised by the readings. Students will form hypotheses and develop and analyze appropriate statistical methodology.

2. Participation: thoughtful participation throughout the course will help solidify your learning, as well as adding to the educational environment: 10% 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 30% of your grade.

4. Completion of the post seminar assignments will be worth 40% of your total grade.

**Additional Pre- and Post-Seminar Assignments:**
In addition to the outline above, there are two assignments that will be due before class, and two assignments that will be due after the course ends.

**Pre-Seminar Assignments:**
The first pre-seminar assignment is to complete the introduction and first unit of the ActivStats CD-ROM. It is advised that you complete as much of the CD-ROM as you can before class.

When loading the ActivStats CD for the first time, make sure you create a new student file. I will ask for a copy of this file later as proof you completed the assignments, so make sure you know where it is and make sure you open this same file for subsequent uses of Activstats. When creating your student file,
make sure to select “Bennett, Briggs, and Triola” as the book, and the statistical package you plan to use (e.g., Excel, SPSS, etc.) As you complete each activity, a checkmark will appear.

The second 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.

Post-Seminar Assignments:

The first post-class assignment is to complete all the assigned activities from the ActivStats CD, which will be assigned approximately one month before class starts. Email me your student file showing checkmarks for all the assigned activities. In addition, there will be selected questions from the homework section of the CD you will have to answer. We will go over and discuss these in class.

The second post-seminar assignment is to prepare a comparative critique (4-5 pages) of two 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 12, 2012

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. 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 make 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 Honesty

Honesty is a fundamental precept in all academic activities and … [you] have a special obligation to observe the highest standards of honesty. Academic misconduct in any form is inimical to the purposes and functions of the University and is therefore unacceptable and is rigorously proscribed. Academic misconduct includes:

- cheating (using unauthorized materials, information, or study aids in any academic exercise), plagiarism, falsification of records, unauthorized possession of examinations, intimidation, and any and all other actions that may improperly affect the evaluation of a student’s academic performance or achievement;
- assisting others in any such act; or attempting to engage in such acts.

All acts of academic misconduct will be reported and adjudicated as prescribed by the student code of the University of Oklahoma. All students should review the “Student’s Guide to Academic Integrity” found at http://www.ou.edu/provost/integrity

Accommodation Statement

The College of Continuing Education [Advanced Programs] is committed to making its activities as accessible as possible. For accommodations on the basis of disability, please contact your OU Site Director.

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.

Copyright

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 and Geography, University of California, Berkeley

Current Positions
- Advanced Programs Professor since 2000
- Professor of Geography and Environmental Sustainability, University of Oklahoma, Norman, OK
- Director, Environmental Verification and Analysis Center, University of Oklahoma

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 & Environmental Geography

Major Areas of Teaching and Research Interest
- Applied Climatology
- Environmental Impacts of Climate and Climate Change
- Statistical Techniques
- Renewable Energy and Sustainability

Representative Honors and Awards Received
- Tromp Scientific Award (This award is given by the International Society of Biometeorology every three years for outstanding research in biometeorology)
- University of Oklahoma Teaching Scholar’s Initiative Award for Outstanding Teaching
- College of Atmospheric and Geographic Sciences Award for Outstanding Research
- Innovator of the Year, by the Oklahoma City Journal Record

Major Professional Affiliations
- American Geophysical Union
- American Meteorological Society
- Association of American Geographers
- International Society of Biometeorology