GEOG 517 DATA HANDLING AND MAP SYMBOLIZATION 10:00-10:50 MWF
SPRING 2006

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Office Hours: MWF 11:00-11:45 AM, 1:30-3:00 PM, and by Appt.

Focus of the Course

This course will focus on the following topics:

1) The difference between map communication and geographic visualization.
2) Selecting a proper mapping method given a particular set of spatial data.
3) Principles of data classification.
4) How to use color properly.
5) Interpolation (contouring) methods.

Students with Disabilities

The staff of Services for Students with Disabilities (SSD), 135 Strong, 785-864-2620 (v/tty), coordinates accommodations and services for KU courses. If you have a disability for which you may request accommodation in KU classes and have not contacted them, please do so as soon as possible. Please also see me privately in regard to this course.

Grading

Your grade in the course will be based on 3 papers (90% of your grade) and class attendance (10% of your grade). Each paper should be approximately 7-10 pages in length, excluding illustrations. These are not "research papers," but rather involve synthesizing material learned in class. The first two papers may be re-written after the initial grade is assigned.

Data for the Papers

At the beginning of the course, I would like you to begin thinking about a data set that you would like to map. The data set should provide raw totals (or counts) for enumeration units (e.g., counties or states). You will be able to map these raw totals directly using the proportional symbol method. To utilize the choropleth and isarithmic methods, you will need to standardize these raw totals. Your geographic region should consist of at least 50 enumeration units.

Storage for Data and Maps

Since we will be making use of the microcomputers in room 226, I recommend that you acquire a USB flash drive (or other storage device) appropriate for backing up maps and data stored on these microcomputers.

Required Text

Slocum, Terry A., McMaster, Robert B., Kessler, Fritz C. and Howard, Hugh H. 2005. Thematic Cartography and Geographic Visualization. Second Edition. Upper Saddle River, NJ: Pearson Prentice Hall.

Note: The home page for the book is http://www.ku.edu/~cagis/slocumNew.htm.

Other Potential Texts

Brewer, Cynthia. 2005. Designing Better Maps: A Guide for GIS Users. Redlands, CA: ESRI Press.

Dent, Borden D. 1999. Cartography: Thematic Map Design. Fifth Edition. Boston, Massachusetts: WCB/McGraw-Hill.

Kraak, Menno-Jan and Ormeling, Ferjan. 2002. Cartography: Visualization of Geospatial Data. Pearson Education.

Krygier, John. and Wood, Denis. 2005. Making Maps: A Visual Guide to Map Design for GIS. New York: The Guilford Press.

Monmonier, Mark. 1991. How to Lie with Maps. Chicago: The University of Chicago Press.

Monmonier, Mark. 1993. Mapping it Out: Expository Cartography for the Humanities and Social Sciences. Chicago: The University of Chicago Press.

Robinson, Arthur H.; Morrison, Joel L.; Muehrcke, Phillip C.; Kimerling, A. Jon; and Guptill, Stephen C. 1995. Elements of Cartography. Sixth Edition. New York: John Wiley and Sons.

Topics to be Covered

Introduction	Chapter 1
How are thematic maps used?	Chapter 1 (p. 3)
Basic steps for communicating map information	Chapter 1 (pp. 3-6)
Geographic visualization	Chapter 1 (pp. 11-12)
Components of geographic phenomena spatial arrangement	Chapter 4 (pp. 57-60)
levels of measurement	Chapter 4 (pp. 60-61)
Visual variables	Chapter 4 (pp. 61-64)
Selecting a general symbolization method	Chapter 4 (pp. 64-70) Chapter 13 (pp. 250-252)
Selecting a visual variable for choropleth maps	Chapter 4 (pp. 70-73)
Elements of Map Design	Chapter 11 (pp. 199-212, 214 218-226)

	Chapter 13 (pp. 262-265)

Paper #1: Proportional Symbol Versus Choropleth Mapping

Data classification methods	Chapter 5 (pp. 74-89)
How color is processed by the human visual system	Chapter 10 (pp. 181-186)
Selecting color schemes for choropleth mapping	Chapter 13 (pp. 253-258)
Models for specifying color	Chapter 10 (pp. 192-197)
Details of color specification	Chapter 13 (pp. 258-262)

Paper #2: Data Classification and the Use of Color on Choropleth Maps

Classed versus unclassed maps	Chapter 13 (pp. 265-268)
Interpolation methods for isarithmic mapping	Chapter 14

Paper #3: Interpolation Methods for Isarithmic Mapping

Data Exploration	Chapter 21