COURSE DESCRIPTION:
This course is an introduction to quantitative methods that are particularly useful to archaeologists. It is not intended to be a substitute for an introductory course in basic inferential statistics. Rather, the emphasis is placed on quantitative pattern-recognition techniques such as exploratory data analysis (EDA), cluster analysis, and principal components analysis. Topics in archaeological sampling, seriation, and spatial analysis will also be covered. During the semester, students will use two software packages – SYSTAT and TFQA – to analyze both real and constructed datasets.

COURSE REQUIREMENTS:
Besides attending class and doing the assigned readings, you are expected to spend considerable time on weekly take-home exercises. There will also be a final exam.

COURSE WEB SITE:
In addition to an electronic version of this syllabus, all the take-home exercises (including datasets and any necessary software besides SYSTAT) will routinely be posted on the web at <http://rla.unc.edu/anth226>. Also posted on the web site is detailed information on UNC's Honor Code and the course policy on collaborative work, which you should read carefully.

COURSE OUTLINE:

8/30 Introduction
9/1-9/8 Basics
9/13-9/15 More basics
9/20-9/22 Univariate distributions and graphs
9/27-9/29 More on graphs; transformations
10/4-10/6 Association and correlation
10/11-10/13 Sampling
10/18 Diversity
10/25-10/27 Classification and cluster analysis
11/1 Seriation [no class on 11/3]
11/8-11/10 Principal components analysis
11/15-11/17 (open)
11/22 Correspondence analysis
11/19-12/1 Spatial analysis (tentative)
12/6-12/8 Review and catch-up
Readings

Basics:


Graphs:


Velleman and Hoaglin (1981). *ABC's of EDA*, chapters 3-6 (ignore the computer programs).

Wilkinson, Leland (ed., 1990). *SYGRAPH: The System for Graphics*. This is one of the manuals for SYSTAT version 5 (DOS). Read chapters 1-3 and skim the rest. This is an excellent introduction to the graphing capabilities of SYSTAT, and virtually all the commands discussed here work equally well in version 10 (Windows). A difference worth mentioning is that you no longer have to type the command "SYGRAPH" to start the graphing routines (cf. p. 7).

Cleveland, William S. (1994). *The Elements of Graphing Data* (revised edition). Read the preface and chapters 1-2; skim chapter 3 (paying special attention to the figure captions); read chapter 4.

Association:

Shennan, Stephen (1997). *Quantifying Archaeology*, chapter 8 (read for the concepts, not for the math).


Sampling:


**Diversity:**


**Classification:**


[The above three articles are also reprinted in *Man's Imprint from the Past*, edited by James Deetz (1971).]


**Seriation:**


**Principal Components Analysis:**


**Correspondence Analysis:**


**Spatial Analysis:** [we may or may not get to this part]


Hodder and Orton (1976). *Spatial Analysis in Archaeology*, Chapter 3, 6. (Skim quickly, and don't get bogged down in the math.)

