

Geography 360  
Spring 2009  
Lecture MW 2:30-3:45  
1131 Humanities

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## Quantitative Methods in Geographical Analysis

**Catalog Description:** Application of descriptive and inferential statistics to geographic problems.

**Texts:** The required text is J.E. Burt, G.M. Barber, and D.L. Rigby, *Elementary Statistics for Geographers* (3rd ed.), Guilford Press, forthcoming. Students may obtain the text at no charge from the Geog 360 learn@uw course page. As indicated below, not all chapters and sections of the book will be covered this semester.

**Grades:** Course grades will be assigned on the basis of points earned on lecture exams (66%) and laboratory work (34%). There will be three exams, each covering about one-third of the course material. The first two exams are tentatively scheduled for weeks 5 and 11. The last exam will occur during the published final exam period (10:05 a.m., Wednesday, May 13). No makeup will be scheduled for any of the exams. If you will be out of town, become ill, or for some other reason cannot attend an exam, special arrangements must be made *beforehand*. Each exam will count 22% toward the course grade, with laboratory contributing the remaining 34%.

### Topics:

1. Introduction. The nature of statistics, measurement, accuracy and precision. Chapter 1 (pp. 3-8, 22-31, skim other pages).
2. Displaying Data. Histograms, dot plots, box plots, spatial displays. Chapter 2 (pp. 39-62, 69-73, 79-93).
3. Descriptive Statistics. Central tendency, dispersion, shape, measures for spatial data. Chapter 3 (pp. 95-118, 129-148).
4. Statistical Relationships. Dependence, covariance, correlation. Chapter 4 (pp. 156-171).
5. Probability. Random variables, probability distributions, counting rules. Chapter 5 (all pages).
6. Sampling. Sampling methods, sampling distributions, expectation, independence. Chapter 6 (pp. 254-257, 262-290).
7. Basic Inferential Statistics I. Point and interval estimation. Chapter 7 (all pages).
8. Basic Inferential Statistics II. One- and Two-sample hypothesis testing. Chapters 8 and 9 (all).
9. Nonparametric Methods. Sign test, runs test, chi-square, K/S, bootstrapping. Chapter 10 (pp. 376-393, 398-408, 418-428).
10. Bivariate Correlation and Regression. Chapters 4 (pp. 172-187) and 12 (all pages).
11. Spatial Statistics, Chapter 14 (pp. 535-538, 543-561).