LIST OF REVIEW TOPICS
MIDTERM EXAM, FEBRUARY 6\textsuperscript{TH}, 2003

CSC 323 – DATA ANALYSIS AND STATISTICAL SOFTWARE

You should be able to…

Chapter 1:

1. Define statistics
2. Understand the process of statistics
3. Distinguish between qualitative and quantitative variables
4. Construct bar graphs, pie charts, stem-and-leaf plots, histograms
5. Identify the shape of a distribution
6. Determine the mean from raw data
7. Determine the median from raw data
8. Determine the mode from raw data
9. Use the mean and median to determine the shape of a distribution
10. Determine the variance from raw data
11. Determine the standard deviation from raw data
12. Use the empirical rule
13. Determine and interpret the z-score
14. Determine and interpret percentiles
15. Determine and interpret quartiles
16. Determine the five number summary
17. Draw and interpret boxplots
18. List the characteristics of a normal density curve
19. Describe the role of mean and standard deviation in constructing the normal density curve
20. Find the area under standard normal curve
21. Find the z-scores for given areas

Chapter 2:

22. Draw scatterplots and interpret them
23. Compute and interpret the linear correlation coefficient
24. Understand the properties of the linear correlation coefficient
25. Find the least-squares regression line
26. Interpret the slope and y-intercept of the least-squares regression line
27. Predict the value of the response variable, based upon the least-squares regression line
28. Determine residuals, based upon the least-squares regression line
29. Compute the sum of squared residuals
30. Compute and interpret the coefficient of determination

Chapter 3:
31. Explain the difference between a population and a sample
32. Discuss why sampling is used in statistics
33. Define a statistic and a population parameter
34. Understand the concept of sampling distribution
35. Define bias and large variability and give modalities of avoiding high bias and large variability
36. Explain the difference between descriptive statistics and inferential statistics
37. Obtain a simple random sample (SRS)
38. Compute the mean and standard deviation of a sample distribution of the mean
39. Distinguish between observational study and experiment
40. What is a placebo effect?