Final Exam Review

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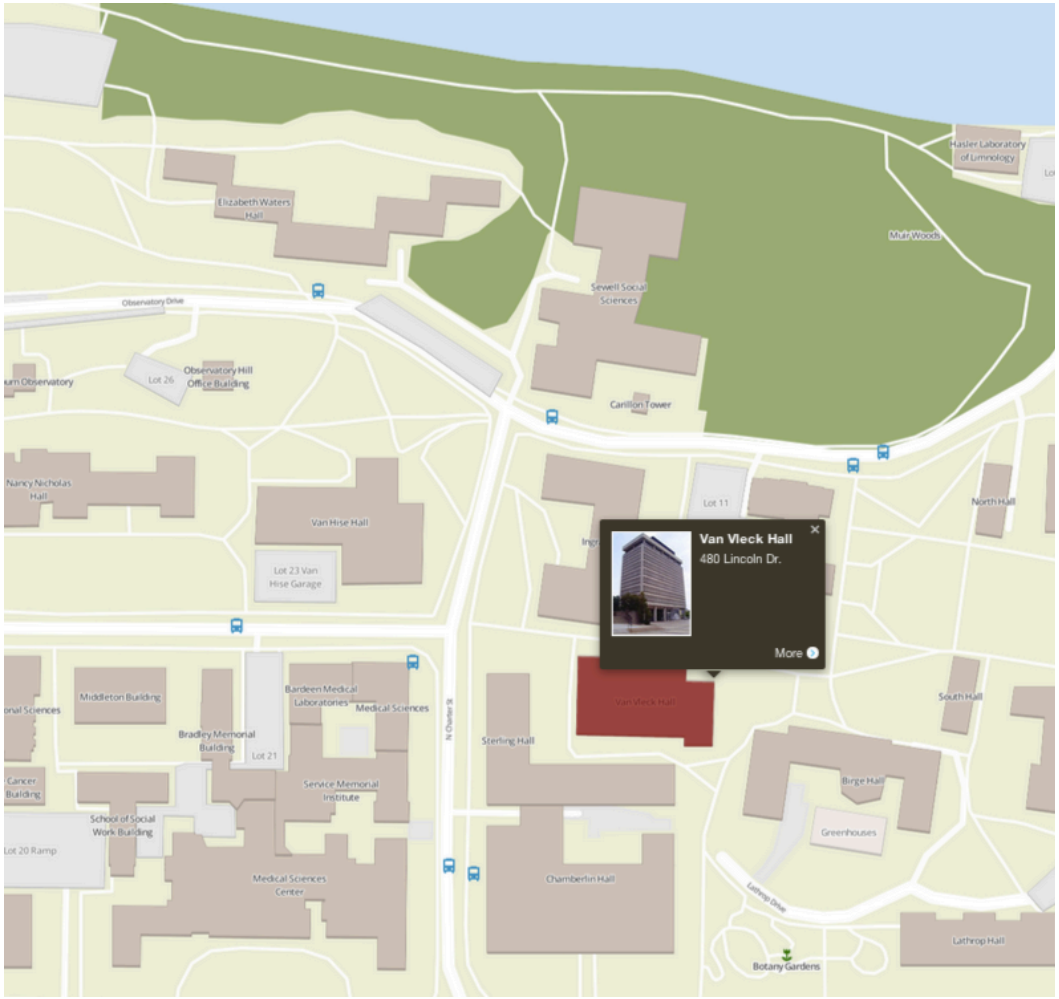
Final – Sunday, May 11th 2:45-4:45pm



Van Vleck B130

Please leave at least one empty seat between you and your neighbor when you arrive

What to Bring

1. Notes sheets – **TWO** sheets of double-sided 8.5”x11”-sized paper of hand-written formulas

2. Calculator – Graphing or Scientific

3. Something to write with

Statistical Tables will be provided (just like Exam 1 and 2)

Format

9 Problems, each with multiple subparts:

- 2 Problems entirely multiple choice, short answer, fill-in-the-blank, and/or true/false (no calculation)
  - These will come from chapters 1-9 (cumulative), but with more emphasis on chapters 7-9

- 7 Problems that require calculation
  - 2 Problems from chapters 1-4
  - 2 Problems from chapters 5-6
  - 3 Problems from chapters 7-9

Chapter 7: Correlation and SLR

- Correlation and coefficient of determination:
  - Definition and properties
  - Interpretation
- Simple Linear Regression:
  - Calculating coefficients from summary statistics (e.g. sample means, sample standard deviations and correlation coefficient)
  - Interpreting coefficients
  - Assumptions 1-4 and how to check
  - CIs/HTs for coefficients
  - CIs for mean response/PIs for new observation
  - Purpose of transformation

Chapter 8: Multiple Linear Regression

- Multiple Linear Regression
  - Using coefficient estimates from R output
  - CIs/HTs for coefficients using R output
  - F test for the null hypothesis that all slope coefficients are zero
  - Assumptions 1-4 and how to check
  - Problem of collinearity
  - Principles of model selection
  - Coefficient of determination and adjusted R^2

Chapter 9: ANOVA

- One-way Analysis of Variance
  - Calculate sums of squares from summary statistics (e.g. sum of squared values, sum of squared treatment means, grand mean)
  - Fill in values for the ANOVA table
  - Interpret F test for the null that all treatment means are equal
  - What conclusions can be drawn from a set of pairwise comparisons
  - Assumptions 1 and 2
- Two-way Analysis of Variance
  - The three F tests (interaction and two main effects)
  - How to interpret the ANOVA table

Chapter 1-6

- See review slides for Exam 1 and 2

- Additional pointers:
  - You will not be asked to calculate power
  - Be familiar with CLT and normal approximation to the Binomial
  - You will not be asked to calculate expected values or variances of distributions

Good Luck!