

# STAT 217    Spring 2011

## Final Exam Preparation

### *Logistics:*

- Fri June 3, 7:10-10am or 8:10-11am (your choice)
- Open-notes, open-handouts
  - You may bring anything that I have provided or that you produce yourself
- Bring calculator, normal table,  $t$ -table
  - No computer use
- Roughly one-half to two-thirds on material since most recent exam
  - Handouts 19-24, Quizzes 19-24, HW14-17
- Roughly one-third to one-half on earlier material
  - Focusing on big ideas

### *Overview (since most recent exam):*

- We have learned how to apply several more statistical methods:
  - Chi-square goodness-of-fit test (categorical variable with more than two categories)
  - Chi-square test for two-way table (two categorical variables, possibly with more than two categories)
  - Simple linear regression (two quantitative variables)
    - Association, scatterplot, correlation, least squares line
  - Multiple regression (more than two quantitative variables)
  - Analysis of variance (quantitative response variable and categorical explanatory variable with more than two categories)

### *Outline (since most recent exam):*

- Handout 19: Chi-Square Goodness-of-Fit Test
  - Expected counts, chi-square test statistic
- Handout 20: Chi-Square Test for Two-Way Tables
  - Expected counts, chi-square test statistic, independence
- Handout 21: Scatterplots, Association, Correlation
  - Scatterplot, association (form, direction, strength), correlation coefficient (properties, calculation from  $z$ -scores)
- Handout 22: Least Squares Regression
  - Residual, least squares criterion, least squares equation, prediction, interpretation of slope coefficient, influential observation, coefficient of determination, residual standard deviation, extrapolation, calculation of least squares equation from summary statistics
- Handout 23: Inference for Regression
  - $t$ -test and  $t$ -interval for population slope,  $t$ -test for population correlation, confidence interval for mean value of response at a particular value of

explanatory, prediction interval, comparison of confidence and prediction intervals

- Handout 24: Choice of Procedure
  - Multiple regression, overall F-test for model, individual  $t$ -tests for coefficients, analysis of variance (ANOVA), F-test, choice of procedure

*Advice:*

- Organize notes for efficient retrieval of information/formulas
- Don't plan to use notes too much
  - Prepare as if exam were closed book/notes
  - Focus on understanding, not memorization
  - Be cognizant of time constraint
- Expect similar questions to what we answer in class every day, in quizzes, on HW, on first two exams
- Be prepared to think/explain/interpret
  - Not just plug into formulas
  - Be ready to explain process of how you would do calculations
- Be ready to interpret computer output
  - Possibly exclude irrelevant output
- Read carefully
  - Be sure to answer the question asked
- Take advantage of information provided
  - Perhaps including computer output
- Relate conclusions to context
- Justify/explain your answers
  - Unless you are explicitly told not to bother
- Arrive on time!
- Prepare as thoroughly as you would for a closed-book exam
  - Re-study previous exam preparation documents
  - Re-read handouts
  - Re-work in-class examples
  - Re-work quiz questions
  - Re-work HW questions
  - Come to Wed class prepared with questions
  - Bring questions to office hours (Tues 2-4, Wed 1-2, extra office hours on Wed from 2-3, Thur from 10-11, 1-2)