

FREC 408

EXAM 4 OVERVIEW

Wednesday, December 18, 2002

10:30 to 12:30 Gore 116

You may bring a single sheet of paper with as many notes on it as you can fit front and back. **It must be your paper and not a photocopy of someone else's notes.** Bring a calculator as well.

The Exam will consist of the following

- 5 True/False worth 3 pts each 15 pts
- 5 Multiple Choice worth 3 pts 15 pts
- Three problems with multiple questions 20 to 25 pts each

The Exam Covers

- Primarily the notes I covered in class, but review Chapters 10 and Chapter 11. If I didn't cover it in class it will not be on the exam.
- I will not require you to calculate the correlation coefficient or the slope and intercept coefficients.
- You will be required to fill in the ANOVA and Regression Table, conduct a test of an individual regression coefficient, interpret correlation and regression coefficients, and solve the regression equation for a predicted value

Terms and Concepts to Know

- ANOVA Table
- Response Variable
- Factors - quantitative and qualitative
- Factor levels
- Treatments
- Experimental unit
- Designed experiment
- Observational experiment
- Completely randomized design
- Sum of squares for treatment
- Sum of squares for Error
- Mean square for treatment or Error
- F-statistic
- F-Table
- Total Sum of Squares (Corrected Total)
- R-square
- Hypothesis test for ANOVA
- Alternative Hypothesis for Anova
- Randomized Block Design and Blocks
- Factorial Experiments
- Be able to figure out the ANOVA table if parts are whited out
- Correlation and Covariance
- Equation of a line
- Deterministic and Probabilistic equations
- Least squares Line
- Interpretation of slope and intercept
- Error term - its meaning and definition
- Assumptions of linear regression
- Assumptions about the error term
- Sources of Variation
- Total Sum of Squares
- Explained Sum of Squares or Sum of Squares Regression (SSR)
- Sum of Squares Error (SSE)
- degrees of freedom for each
- Mean Square Regression (MSR)
- Mean Square Error (MSE)
- Root MSE or Standard Error of Model
- Hypothesis Test for a slope coefficient
- Dependent and Independent Variable
- Dummy variables
- Dummy variable regression
- Interpretation of multiple regression coefficients - holding all else constant
- Solving the regression equation to predict the dependent variable for a given set of independent variables
- Understand Excel output for ANOVA, Correlations, and Regression