

# STAT 200

## EXAM 3 OVERVIEW

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.** I will include any tables you need with the exam. I will also include the STAT 200 Review sheet of formulas for confidence intervals and hypothesis tests of the mean, a proportion, or two means or proportions.

### The Exam will consist of the following

- 5 True/False worth 3 pts each 15 pts
- 5 Multiple Choice worth 3pts 15 pts
- Three data problems with multiple questions involving Hypothesis Tests and Confidence Intervals for means and proportions 20 or 25 pts each

### The Exam Covers

- Chapter 6
- Chapter 7
- Chapter 8 (but not calculating Type II Errors and Inferences about Population Variance)
- Chapter 9 (but not determining the sample size, comparing population variances,)
- Course notes on correlation and regression (you can also review Chapter 11) - **NO FORMULAS!**  
The exam questions on correlation and regression will be limited primarily to interpretation.
- All In-Class Notes and Handouts

### Terms and Concepts to Know

- Sampling distributions
- Central Limit Theorem
- Sampling Distribution of the mean
- Inferences based on a single large sample for the mean and for proportions using a Confidence Interval
- Inferences based on a single small sample for the mean using a Confidence Interval
- Bound of Error
- Parts to computing a % C.I.
- The meaning of a Confidence Interval
- t-distribution
- degrees of freedom
- Inferences based on a single large sample for the mean and for proportions using a Hypothesis Test
- Inferences based on a single small sample for the mean using a Hypothesis Test
- Alpha and Type I Error
- Type II (only in terms of its meaning, not in terms of calculating it)
- Parts of a Hypothesis Test - Null Hypothesis, Alternative Hypothesis, Assumptions, Test Statistic, Rejection Region, Conclusion
- One and Two-Tailed Hypothesis Tests
- Observed significance or p-value
- Comparing Two Means - Hypothesis Test for Large sample, small sample,
- Comparing Two proportions - Hypothesis Test for Large sample
- Confidence Interval for the Difference of Two Means or Proportions - Large and Small Sample
- Paired Difference Test
- Understanding Excel output for the difference of means tests
- Properties of correlation coefficients
- Basic interpretation of correlation coefficients
- Basic properties of regression
- Interpretation of regression coefficient
- Solving for a predicted value
- Hypothesis test of regression coefficient