Although you are responsible for all material taught in Statistics 141/151 here is checklist of the 141/151 material that I assume you already know going into Stat 252.

Introduction
        a) Population vs. Sample
        b) Parameter vs. Statistic
        c) Descriptive vs. Inferential statistics

Sample Data
        a) Categorical vs. Numerical data
        b) Discrete vs. Continuous numerical data
        c) Observational studies vs. Randomized experiments
        d) Confounding variables
        e) Sampling techniques (simple random sample)
        f) Types of sampling bias (response, selection, non-response) and their effects.

Graphical Methods
        a) Frequency, Relative frequency (distribution)
        b) Histogram, Boxplot, Scatterplot
        c) Describing these plots (shape, skew, center, spread, outliers, etc.)

Numerical Measures
        a) Mean, Median
        b) Proportion
        c) Standard deviation, Variance
        d) Quartiles, Interquartile range, outliers
        e) Z-scores
        f) Percentiles
        g) The Empirical Rule (or 68-95-99.7 Rule)

Probability and Sampling Distributions
        a) What is a probability?
        b) Population Distribution
        c) Discrete vs. Continuous variables
        d) Density curve
        e) Normal distribution
        f) Standardized variable, z-score
        g) Standard normal distribution
        h) Sampling distributions
        i) Sampling variability
        j) Central Limit Theorem
        k) Sampling distribution of the sample mean
        l) Sampling distribution of the sample proportion

One Sample Inference for the Population Mean
        a) The t-distribution
        b) Confidence Intervals for the Population Mean
        - Point estimate
        - Confidence level and critical values
        - Standard error
        - Sample size calculation

c) Hypothesis Testing for the Population Mean
- Null and alternative hypothesis
- 1-sided and 2-sided tests
- Type I error, Type II error
- Level of significance
- Test statistics
- P-value

Two Sample Inference for the Difference in Population Means
a) Confidence Intervals for the difference in population means: paired samples, independent samples.
b) Hypothesis testing for the difference in population means: paired samples, independent samples.

Simple Linear Regression
a) Scatterplots
b) Pearson's correlation
c) Fitting a line: Least squares method
d) Coefficient of determination.
e) Assumptions of simple linear regression (known to some extent)

ANOVA
a) The F-test
b) Assumptions
c) Sums of squares (also known as sum-of-squares residuals)
d) Degrees of freedom for different sources of variation
e) F distribution
f) ANOVA tables