Chapter 1:

* Concept of Regression
* Model Assumptions and OLS
  + OLS is unbiased
  + Residuals is always observed – predicted.
  + What is MSE?
* Properties of Residuals

Chapter 2:

* Normal Assumption
* t-test for and .
* ANOVA (F-test) and properties of ANOVA table.
* Relationship between t and F test; .
* t-CI for and ; Standard error ( and ) for both.
* Inference for response mean/prediction; Standard error for response mean and prediction. Know difference.
* Know Conf Band/CI for response mean.
* Know difference between Conf Band, Pred Int, and Conf Int.
* NOTHING ON POWER; NO RANDOM DESIGN
* and interpretation; relationship to F.

Chapter 3:

* Various diagnoses and purposes
  + Graphical tools; know how to interpret, spot mistakes, etc.
* General difference between graphical vs formal test methods. Don’t use test when sample size is large; will always tell you something is wrong.
* Lack of fitting test. What does rejection mean?
* Remedy/Box-Cox transformation; power transformations.

Chapter 4:

* Concept/Method of Simultaneous Inference
  + Bonferroni Adjustment
  + Conference Band
  + Scheffe Interval for Prediction

Chapter 5:

* Simple LinReg, but in Matrix Form.
  + Translate from non-matrix form to matrix form, vise-versa.
* Don’t have to memorize Hat matrix.
* ;
* Confidence/Prediction Interval in Matrix Form