Section 7 (CB/LS)

* Nuisance factor – What are they?
* Handling nuisance influences (randomize or block)
* Randomization in CB design
* A way to check to see if blocking is useful in a CB design using the ANOVA table.
* How many blocks in the model for a CB design and LS design
* Structure and randomization of a Latin Square design

Section 7 (SP/RM)

* F-tests for factors in SP/RM designs
* What are the following items in SP/RM:
  + Factors
  + Equation
  + Levels of a factor
  + Treatments
  + Blocking
  + Experimental Units (two different types)
  + Creating partial ANOVA tables (Source and df)
  + Response Variable
  + Null and Alternative Hypotheses for main effects and interaction
  + Interaction
  + F-tests (degrees of freedom for each main effects and interaction)

Power for ANOVA

* F distribution for the null hypothesis
* Non-central F distribution
* Non-centrality parameter Φ2
* α, β, power and where they fall in either the non-central F and the F distribution for the null hypothesis
* Calculate Power and Sample size with Software

Section 11

* Orthogonal contrasts
* Formalizing a contrast in terms of model parameters (the three steps)

Section 14

* Check for interaction between covariate and main factor of interest.
* Know how to do an ANCOVA analysis using software
* For all effects of interest doing the following: i) state the null and alternative hypotheses, ii) give the test statistic, iii) give the degrees of freedom, iv) state the p-value, v) determine whether you should reject or not reject the null hypothesis, and vi) write a sentence which gives an appropriate conclusion
* Check for ANCOVA assumptions – equal variance and errors being normal

General

* Check the assumptions using software for **CB[1], SP/RM[1;1], LS[1]**
* Doing an ANOVA table using software for **CB[1], SP/RM[1;1], LS[1]**
* For all effects of interest doing the following: i) state the null and alternative hypotheses, ii) give the test statistic, iii) give the degrees of freedom, iv) state the p-value, v) determine whether you should reject or not reject the null hypothesis, and vi) write a sentence which gives an appropriate conclusion for **CB[1], SP/RM[1;1], LS[1]**
* Writing the null and alterative hypothesis for any model using the statistical model notation.
* Creating partial ANOVA tables (Source and df) for **BF[1]**
* The degrees of freedom for doing any type of ANOVA F test (both numerator and denominator df).
* Why do we randomize?
* Why do we replicate?
* What is the definition of an interaction? – pg 210
* Why do we do a “blinded” study?