Outline of Initial coverage and reading for Random effects models.

1. The one-way random effects model.
   Read section 15.2. Skip from Th. 15.2.2 to Th 15.2.5. In Th. 15.2.5 we are interested in the results in (1), (3)
   and (5). We will not go into any detail here concerning the other parts of this theorem.
   (a) The one-way random effects model and its relationship to two-stage cluster sampling.
   (b) Analysis of the standard one-way random effects model with equal sample sizes.
      i. The mean and variance covariance structure of the Y’s.
      ii. The generalized least squares estimator of the overall mean.
      iii. A result on the distribution of the usual sums of squares under normality.
      iv. Expected values of the usual sums of squares without normality and unbiased estimation of the
         variance components.
      v. Inferences for $\sigma^2$.
      vi. Inferences for $\sigma^2/\sigma^2$.
      vii. A confidence interval for $\sigma^2$.
   (c) A general approach to confidence sets for functions of parameters.

2. A general variance components model.
   Read Section 15.1, 15.3 and 15.6.

3. A remark on the argument for completeness and sufficiency in the general variance components model. This
   relates to Sections 15.7, the result in Th. 15.3.1 b) and discussion in Theorems 15.2.2, 15.2.3 and 15.2.4. We
   will not go into this in detail so don’t read these sections in any detail.

4. The two-way balanced random effects model.
   Sections 15.4.1 and 15.4.2. This is a straightforward application of results for the general variance components
   model.

5. The two-way mixed model followed by general linear mixed models. Lecture notes and other readings. Not
   covered in Graybill.