I. **Sections to Read** (All content from DeGroot and Schervish's *Probability and Statistics* unless otherwise noted) A digital copy of the textbook is available for on our class PWeb site, under the Day One Access tab.

   (a) Section 11.3 (read pages 707 - 708 and 711 - 715, along with the **statement** of Theorem 11.3.2 on page 709; you can skim the proof of Theorem 11.3.2 if you'd like, but be warned, it is very dense!)

II. **Objectives** (By the end of the day's class, students should be able to do the following:)

   - State the joint distribution for the regression coefficient estimates, and discuss how to use the assumptions of the linear regression model to verify this distribution
   - Conduct hypothesis tests for regression coefficients

III. **Reflection Questions** (Submit answers on Gradescope `https://www.gradescope.com`)

   1) In the proof of Theorem 11.3.3, where did we use the assumption that $\hat{\sigma}^2$ is independent of $\hat{\beta}_0$ and $\hat{\beta}_1$?

   2) Suppose we are ultimately interested in hypothesis tests for regression coefficients of the form $H_0 : \beta_0 = c_*$ or $H_0 : \beta_1 = c_*$. Explain why it is sufficient to have a procedure for general hypotheses of the form $H_0 : c_0\beta_0 + c_1\beta_1 = c_*$, where c_0, c_1 are fixed but arbitrary real numbers.

IV. **Additional Feedback** Are there any topics you would like further clarification about? Do you have any additional questions based on the readings / videos? *If not, you may leave this section blank.*