I. **Pre-class material** Either read the indicated textbook sections OR watch the indicated video.

   (a) **Sections to Read** (All content from Blitzstein and Hwang's *Introduction to Probability* unless otherwise noted). A digital copy of the textbook is available for free via the authors' website.
      - Sections 5.2, 5.3
   (b) **Videos to Watch** (All videos from Blitzstein's Math 110 YouTube channel, unless otherwise noted)
      - Lecture 12: Discrete vs. Continuous (from 29:00 to end)
      - Lecture 13: Normal distribution (from beginning to 16:00)

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

   - Give the PDF, CDF and a story description for a uniform distribution.
   - Calculate the mean and variance of the uniform distribution.
   - Explain what is meant by 'Universality of the Uniform.'
   - State the definition of the *quantile function*.
   - Compute the expectation of a variety of continuous variables by integrating the survival function.

III. **Reflection Questions** (Submit answers on Gradescope https://www.gradescope.com/courses/425901)

   1) True or False: If $U \sim \text{Unif}(0, 1)$, then $2U + 1$ is also a uniform random variable.
   2) Suppose 50 students take a statistics exam with scores spread (not necessarily uniformly) in the interval 0 to 100. Explain why we do not have enough information to determine how many students scored 90 points or higher on the exam. Nevertheless, calculate the number of students who scored above the 90th **percentile** on the exam.
   3) Suppose you have a computer program that is capable of generating numbers uniformly on the interval $(0, 1)$, but cannot generate any other numbers. Describe a procedure you could implement in order to generate values of a random variable whose probability density function is $f(x) = 2x$ for $0 \leq x \leq 1$.

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.*