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.

- Read Section 1.2 - 1.4
- Skim Sections 1.1. and 1.5

(b) **Videos to Watch** (All videos from Blitzstein's Math 110 YouTube channel, unless otherwise noted)

- Lecture 1: Probability and Counting (Start at the 14:00 mark; content prior to 14:00 covers logistics for Blitzstein's specific class)

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

- Describe applications of probability theory.
- Define the sample space for an experiment, and manipulate events using the language of sets.
- State the 'naive' definition of probability, and compute the probabilities of outcomes using the multiplication rule, symmetries, and the inclusion-exclusion principle.
- Give examples of 'story proofs' for probability problems.

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

1) In your own words, describe the difference between **an event** and **an outcome**.
2) A coin is flipped 3 times in succession and the sequence of Heads / Tails is recorded. Write down the sample space for this experiment. Assuming that each outcome in the sample space is equally likely, what is the probability that at least 1 heads is obtained?
3) How many 4-digit ID numbers are possible, assuming that the first digit can't be 0? Suppose I randomly generate 20 ID numbers (repeats possible) so that each number is equally likely, and that the numbers I generate are independent of each other. What is the probability that I generate the number 1234 at least once?

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.*