# Week 3

Goal: In these assignments, students refine their understanding of the terms “random sampling”, “random allocation”, and “randomization test”. They first learn about what “random” means to a statistician, and then distinguish sampling and allocation, and their utility to statisticians. Interactions with the instructor in small group discussion boards help hone their definitions.

## Part 1

One word that will come up a lot in this course is the word random. Of particular importance are random sampling and randomization. But, what does random mean?

#### Part A:

(a) Create your own definition for the word random. Try to explain this in your own words.

(b) Read the following attachment, which contains excerpts from a research study investigating how students use the word random. [Excerpts from Lexical Ambiguity \_Kaplan et al., 2009\_](https://blackboard.gwu.edu/bbcswebdav/pid-11083880-dt-content-rid-83993534_2/xid-83993534_2)

(c) What misconceptions about what the word random means did the researchers find?

#### Part B:

(a) Read Sections 1.2 - 1.3 and Appendix A Chapter 1 (p. 738). How do statisticians define random, random sampling, and randomization?

(b) Compare your definition to statisticians' definition. What was similar? What was different?

(c) How has your notion of the word random changed as a result of the readings and the activity?

Submit your answers to each of these questions in a .docx or .pdf document by **Thursday**.

## Part 2

This activity will focus on two terms we'll use a lot in the course, random sampling, and, random allocation (a.k.a. randomization). In Part 1, we explored what the word random means. Now, we will explore what "sampling" means, and what "allocation means", and what makes a "random sample" unique from other samples, and what makes a "random allocation" unique from other allocations.

Consult the text book, additional readings, and audio lectures. Share with your classmates a post that addresses "random sampling" and "random allocation" by doing the following:

(1) Create a definition each term.

(2) Explain what each term is and what it means. Try to use every day English.

(3) Provide and describe an example of what each term looks like in practice. Be sure to connect your example to the words you used in your definition.

(4) Finally, summarize how the purpose of each is different.

Post your definition and explanation to the discussion board by **Thursday**

## Part 3

Respond to at least two other colleagues' posts. For one colleague, comment on their definition of "random sampling", and for the other colleague, comment on their definition of "random allocation".  Comment on the communication of statistical information. Ask clarifying questions. This is your chance to practice and improve your statistical communication and understanding.

Answer any questions that your classmates or instructors ask about your post.

due **Sunday**.