

Module 1: Overview

<https://canvas.asu.edu/courses/161955/files/69957455/download?wrap=1>

Module Overview

In this module, you will learn about how this course will operate to guide you through answering a research question. You will learn about the specific research question we are asking, how it arose, and why it is important to the scientific community to answer that question. Specifically, you will learn about the role of sex chromosomes in cancer and the Cancer Cell Line Encyclopedia (CCLE) resource data set. You will also perform a biological data analysis tutorial in R to gain the programming skills necessary to do the required analysis for this research.

Module Learning Objectives

1.1 Biology/Stats (1.5 hours)

1. Understand research aims for this course
2. Become familiar with the CCLE data set
3. Understand sex chromosome biology
4. Understand the features of cancer cells
5. Understand what is currently known about the effect of sex on cancer incidence and cancer cell biology

1.2 Coding (2 hours)

1. Use RStudio to run R code
2. Understand how to read and store data in R
3. Understand how to create and subset data frames in R

1.3 Professional Development (30 min)

1. Use Google to search for useful R solutions to solve specific computational problems
2. Read published scientific articles