Probability & Statistics

The following learning targets represent the major concepts studied and assessed in this course.

Unit 1 ***Intro to Statistics***	**1.1** I can represent data with plots on the real number line (dot plots, histograms, and box plots). **1.2** I can use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets. **1.3** I can interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers).
Unit 2 ***Normal Distribution***	**2.1** I can identify Normal curves based upon their properties. **2.2** I can find the standardized value(z-score) of an observation and interpret the z-score in context. **2.3** I can determine a percentile of a value from any Normal distribution and the value that corresponds to a given percentile.
Unit 3 ***Inference***	**3.1** I can explain the components necessary for making an inference. **3.2** I can use confidence intervals. **3.3** I can understand how the margin of error of a confidence interval changes with the sample size and level of confidence.
Unit 4 ***Experimental Design/Survey Techniques***	**4.1** I can identify the population and the sample in a statistical study. **4.2** I can distinguish observational studies from experiments. **4.3** I can identify a valid survey, sampling method and sources of bias. **4.4** I can identify the experimental design being used in an experiment.
Unit 5 ***Probability***	**5.1** I can calculate simple probabilities or Venn diagrams and tree diagrams to find the probabilities of events that are formed from other events, including unions, intersections, and complement probabilities. **5.2** I can calculate probabilities of events using the rules of probability. **5.3** I can use permutations and combinations to compute probabilities of compound events and solve problems. **5.4** I can develop probability distributions (experimentally or theoretically) and compute and interpret the expected value (weighted mean).