

In Math 1040, students learn how to:

- recognize different ways of collecting data and decide what method would be the best for a given situation
- distinguish between various sampling techniques and decide what sampling technique would work the best in a given situation
- use different tables and graphs to organize and analyze data
- calculate the mean, median, mode, range, quartiles, interquartile range, outlier(s), find percentile that corresponds to a value and interpret the results in a variety of ways
- find the z-score (the standard score) and compare the z-scores from different data sets
- find the mean, variance and standard deviation; interpret standard deviation using Empirical Rule (68-95-99.7 rule) for the bell-shaped distribution; interpret standard deviation in connection with a distribution that is not bell-shaped or it is unknown using Chebychev's Theorem; find the standard deviation for grouped data (using classes and midpoints)
- determine the probability of an event using the Fundamental Counting Principle, conditional probability, the multiplication rule, and the addition rule
- create and use probability distributions; find the mean and standard deviation
- recognize a binomial experiment and calculate the binomial distribution using the Binomial Probability Formula
- recognize normal (bell-shaped) distribution and standard normal distribution; calculate the areas/probabilities using the standard normal distribution table
- use the standard normal distribution table to find probabilities or values in connection with real-life applications
- explain the meaning of different values of the correlation coefficient and relate the concept to the strength/weakness of linear relationship between two variables when examining different scatter plots