

Math 10 - Instructional Objectives and Student Learning Outcomes

The goals of this course are to teach students to collect, organize, and describe data using graphical and numerical techniques.

Learning Objectives	Student Learning Outcomes
Students enrolled in this course will:	Students that successfully complete this course will be able to:
1. Learn to collect, organize, and describe data using graphical and numerical techniques	a. Define the difference between the descriptive and inferential statistics. b. Identify simple random sampling procedures and types of data. c. Identify other sampling procedures along with possible abuses of statistics.
2. Learn to make measurements on a set of data with the aid of a calculator	a. Organize data in a tabular and graphical format b. Calculate descriptive measures such as measures of central tendency, measures of variation and measures of relative standing.
3. Select which probability distribution to use depending on the problem situation..	a. Identify random variables, and sampling distributions. b. Calculate probabilities of simple and compound events. c. Define discrete random variables and calculate probabilities using Binomial and Poisson distributions. d. Define continuous random variables and calculate probabilities using the normal distribution. e. Calculate the mean and standard deviation of discrete random variables. f. Define the sampling distribution of the mean. g. Define the mean and standard deviation of the sample means.
4. Formulate hypotheses about the population and test them by means of the measurements made on the sample.	a. Calculate the confidence interval for one population mean. b. Perform hypothesis testing for one population mean. c. Calculate the confidence interval for the difference of two population means. d. Perform hypothesis testing for two population means. e. Calculate the confidence interval for one population proportion. f. Perform hypothesis testing for one population proportion. g. Calculate the confidence interval for the difference of two population proportions. h. Perform hypothesis testing for two population proportions i. Perform Chi-Square procedures to calculate the confidence interval and hypothesis testing for population variances.
5. Formulate regression and correlation and perform analysis of variance	a. Calculate and interpret the linear correlation coefficient. b. Perform hypothesis test for correlation. c. Determine the regression equation. d. Calculate the coefficient of determination. e. Perform one-way ANOVA