

MAT 300 – Statistics

Course Description

This course examines the principles of probability and of descriptive and inferential statistics. Topics include probability concepts, measures of central tendency, normal distributions, and sampling techniques. The application of these principles to simple hypothesis testing methods and to confidence intervals is also covered. The application of these topics in solving problems encountered in personal and professional settings is also discussed.

Instructional Materials

Bluman, A. G. (2013). *Elementary statistics: a brief version* (6th ed.). New York, NY: McGraw-Hill.

Course Learning Outcomes

1. Describe the differences between the various types of data.
2. Apply various descriptive graphical techniques.
3. Calculate measurements of central tendency and dispersal.
4. Solve problems using probability, conditional probability, and counting principles.
5. Solve problems using discrete probability distributions, including the binomial probability distribution.
6. Solve problems using the normal frequency distribution.
7. Determine confidence intervals for data.
8. Describe the vocabulary and principles of hypothesis testing.
9. Apply linear regression to problems.
10. Conduct ANOVA and goodness of fit tests.
11. Discuss application of course content to professional contexts.
12. Use technological tools to solve problems in statistics.
13. Write clearly and concisely about statistics using proper writing mechanics.