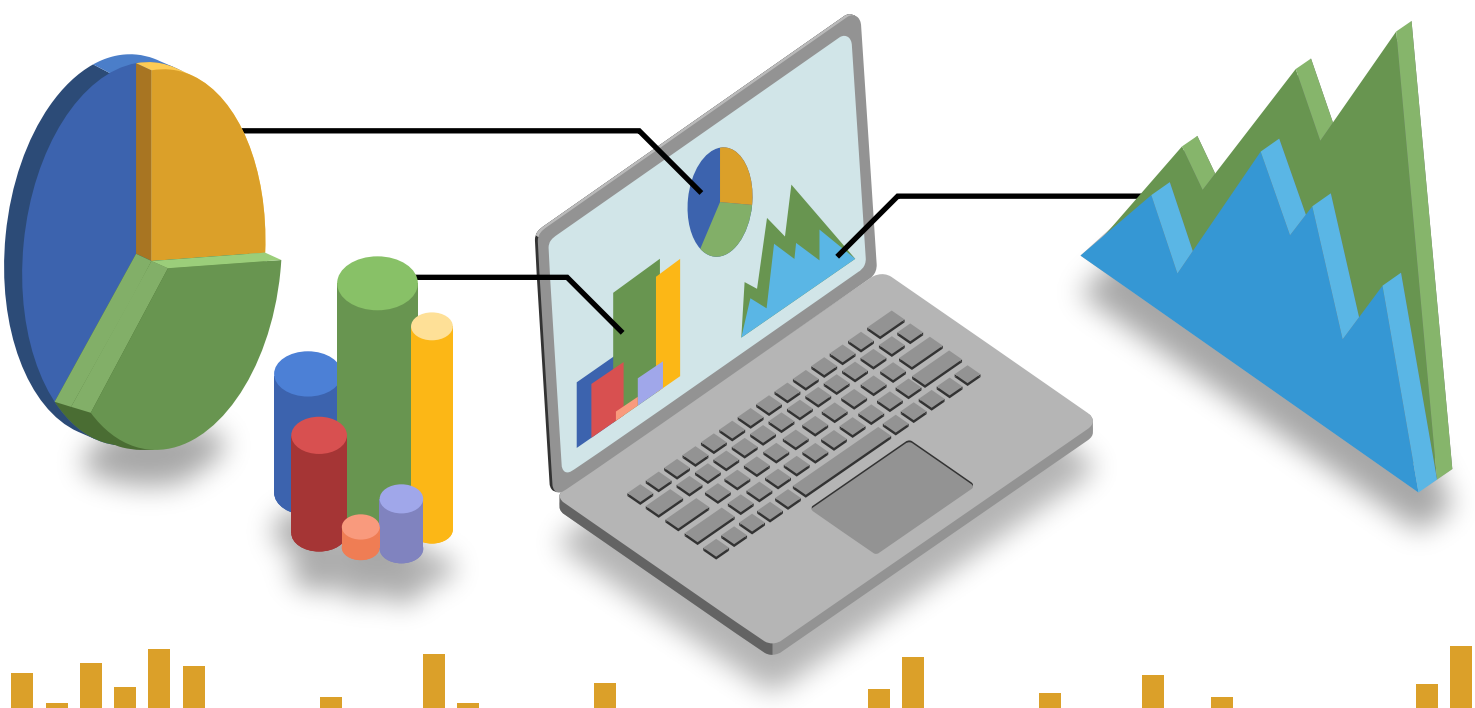
MAT 243

Applied Statistics for STEM



Course Description

Students will examine STEM applications of statistical inferential techniques. Students will learn how to solve statistical problems using a scripting language. Additionally, students will learn how to apply various statistical techniques such as probability distributions, sampling distributions, estimation, hypothesis testing, and linear regression.

Projects

The course goals are communicated through three competency statements instead of through course outcomes. Competencies represent the knowledge and skills relevant to your field. Additionally, there is not a single final project like you may have seen in other courses. Instead, there are three smaller projects, one tied to each competency. Still, the amount of material covered, the level of difficulty, and the workload expectations are all typical for a 200-level course.

Project One (Module Three Submission)

Use descriptive statistics, confidence intervals, and data visualizations to perform an exploratory data analysis on the performance of two basketball teams.

In this project, you will demonstrate mastery of the following competency:

- Apply statistical techniques to address research problems

Project Two (Module Five Submission)

Use hypothesis testing to test claims made about the performance of two basketball teams.

In this project, you will demonstrate mastery of the following competency:

- Perform hypothesis testing to address an authentic problem

Project Three (Module Seven Submission)

Create regression models to make predictions for the number of wins in a basketball season.

In this project, you will demonstrate mastery of the following competency:

- Perform regression analysis to address an authentic problem

Program Pathway

The following graphic is designed to give you a high-level view of the Data Analytics program and its suggested pathway. Be sure to discuss your plan with your advisor.