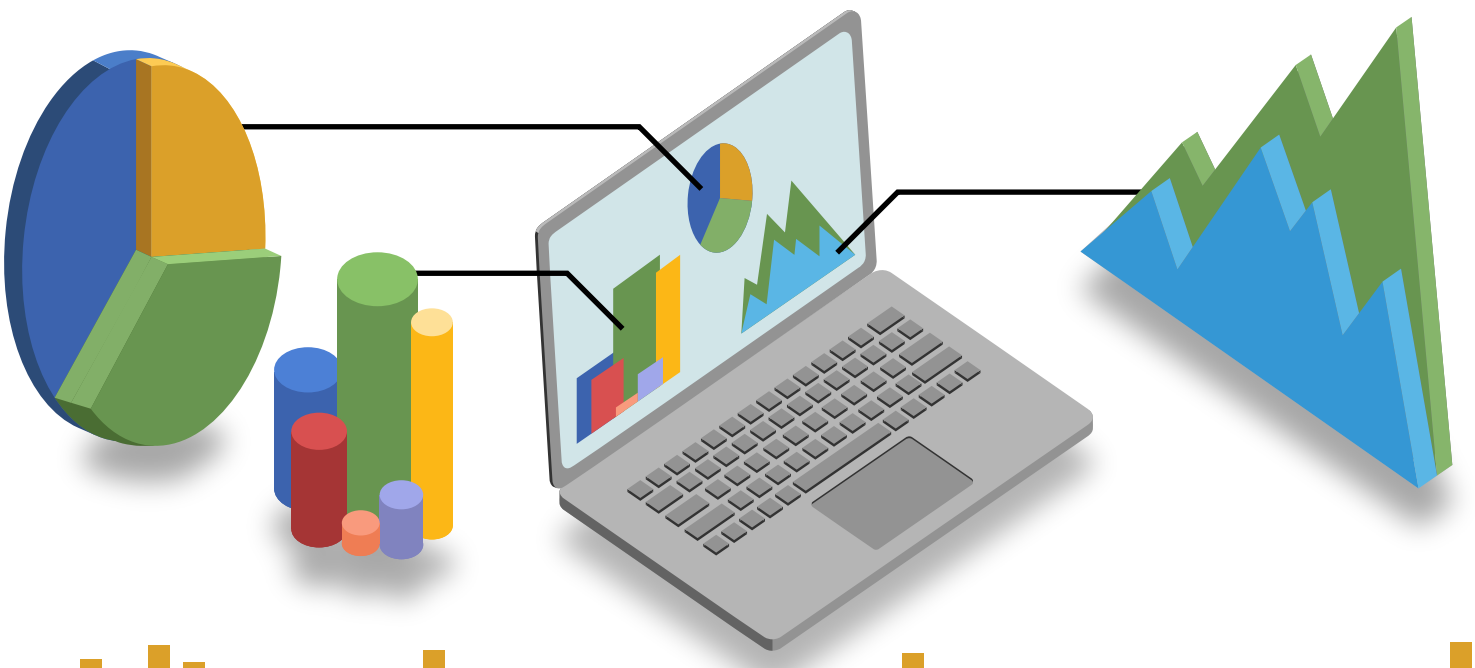
MAT 303

Applied Statistics II for STEM



Course Description

In this course, students will build upon the knowledge and skill gained in Applied Statistics for STEM. Students will learn to build statistical models and implement regression models with a scripting language for various authentic STEM applications. In addition, students will learn to apply quantitative and qualitative models for making estimations and predictions. Students will also gain experience conducting regression diagnostics to validate models utilized for statistical analysis.

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 two smaller projects that cover the three competencies. Still, the amount of material covered, the level of difficulty, and the workload expectations are all typical for a 300-level course.

Project One (Module Four Submission)

Apply regression models to explore how different quantitative and qualitative variables affect the price of housing.

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

- Implement statistical analysis using quantitative and qualitative variables
- Apply statistical techniques to address research problems

Project Two (Module Seven Submission)

Apply regression and random forest models to explore how different factors predict heart disease.

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

- Apply quantitative models for estimation and prediction
- Apply statistical techniques to address research problems