**BAIS:3500 - Data Mining:**

In this course you will learn the basic concepts and techniques of data mining and knowledge discovery as applied to business problems. The focus will be on using recent data mining software to solve practical problems. Students will learn the process of turning raw data into intelligent decisions, and the algorithms that are commonly used to build predictive models and find relevant patterns in data.

**Students will learn:**

* R
* Knowledge discovery process
  + data mining problem formulation
  + data cleaning & transformation
  + data visualization
  + model evaluation & comparison
  + dimensionality reduction
* Predictive modeling techniques
  + regression
  + decision trees
  + support vector machines
  + artificial neural networks
  + ensemble models (random forest, adaboost, and gradient boost)
* Clustering
  + hierarchical clustering
  + k-means
* Model Evaluation metrics

**Students will be able to:**

* Understand the business prediction and model selection process
* Discuss their theoretical appreciation for a variety of data mining methods
* Apply practical knowledge of the uses and limitations of data-mining
* Build data mining models to solve practical problems using a software package
* Evaluate, compare and select models using a variety of metrics