DATA 4000: Data Science Communication

3 Credit Hours

Prerequisite: STAT 2332 or (DATA 3010 and (STAT 3120 or STAT 3125))

This course equips students to orally communicate data analysis results adapted to both technical and non-technical audiences. Students learn and practice essential data presentation skills, such as using narratives and visuals to communicate data analysis insights for solving business problems.

DATA 4030: Programming in R

3 Credit Hours

Prerequisite: DATA 3010 or STAT 3125

In this course, students will learn R programming to effectively manage, explore, visualize, and present data. The course covers practical statistical-computing issues, including reading, manipulating, and analyzing data, using control statements, existing functions, and user-created functions. Reporting results using R packages, such as R Markdown, may also be covered.

DATA 4140: Python for Data Science

3 Credit Hours

Prerequisite: DATA 3010 and (STAT 3130 or IET 3403 or ISYE 3600)

This course introduces students to analytic methods using Python. The core focus is the development of Python knowledge within an analytic model development focus. Students will learn fundamental data structures, key algorithms and their application in applying analytic/machine learning methodologies.

DATA 4310: Statistical Data Mining

3 Credit Hours

Prerequisite: STAT 3130 or permission of the instructor.

Data Mining is an information extraction activity whose goal is to discover hidden facts contained in databases, perform prediction and forecasting, and generally improve their performance through interaction with data. The process includes data selection, cleaning, coding, using different statistical, pattern recognition and machine learning techniques, and reporting and visualization of the generated structures. The course will cover all these issues and will illustrate the whole process by examples of practical applications. The students will use recent SAS Enterprise Miner software.