

Everyday Data
21-219-105 (3 Credits)

Course Description

This project-based hands-on course will guide students through the 6 phases of the data science workflow (Hypothesize, Acquire, Explore, Deep Dive, Communicate, Implement). The course is divided into 3 data science projects. With the completion of each project, students learn more rigorous data science techniques – a deeper dive into the data by expanding their Python coding, statistical, collaboration and communication skills.

Learning Objectives

This course is structured to provide students with exposure to working as both an independent and collaborative (team) data scientist. Completion of this course will provide students with the skills required to design, execute, and deliver analytic insights using real world data and popular data science tools.

Pre-Requisites

Students must have completed 21:640:114 (Pre-Calculus) or 21:640:119 (Applied Calculus) OR are concurrently enrolled in Pre-Calculus or Applied Calculus. See the [department website](#).

Course Materials

Anaconda (Python-Jupyter Notebook-Spyder): Anaconda is a free and open-source distribution of the Python language for scientific computing that aims to simplify package management and deployment.

You can install Anaconda by going to <https://www.anaconda.com/products/individual>.

SAS: SAS is a statistical software suite developed by SAS Institute for data management, advanced analytics, multivariate analysis, business intelligence, criminal investigation, and predictive analytics. To install on your computer, go to https://www.sas.com/en_us/software/on-demand-for-academics.html.

Computer: You will need access to a computer during class time as the course has a heavy emphasis on programming.

Topics Covered

- Hypotheses formulation
- Data Acquisition – Researching Publicly Available Datasets and sites
- Data Wrangling
- Descriptive statistics
- Inferential statistics
- Introduction to predictive models
- Communicating and Presenting Data Science Project Results