Introduction to Data Science

Introduction to Data Science (IDS) is a survey course introducing the essential elements of data science: data collection and management, summarizing and visualizing data, basic ideas of statistical inference, and machine learning. Students will gain hands-on experience using the Python programming language and Jupyter notebooks. IDS can be viewed as a hybrid between a computing course focused on programming and algorithms and a statistics course focusing on estimation and inference. All undergraduates, not just students with primary interest in science or engineering. No previous exposure to programming or statistics is expected.


Why you need this course:

Basic understanding and hands-on experience with manipulating, analyzing, and presenting data are increasingly important during education and in the workplace.

Important decisions made by individuals and society at large are data-driven. Understanding the fundamentals of data science is essential for functioning as an informed citizen.

Results you can expect upon completion:

- Be able to list the steps involved in data science from data acquisition to insight and describe the role of each step
- Distinguish different ways of collecting data and their impact on the conclusions that can be drawn from the data
- Manage, summarize and visualize data using the **Python** programming language and **Jupyter** notebooks
- Explain the basic concepts of *statistial inference* and implement *simulation-based inference methods*
- Apply **machine learning** methods and assess the quality of predictions.

View course details for STAT 180 in MyPlan at: https://www.washington.edu/students/crscat/stat.html