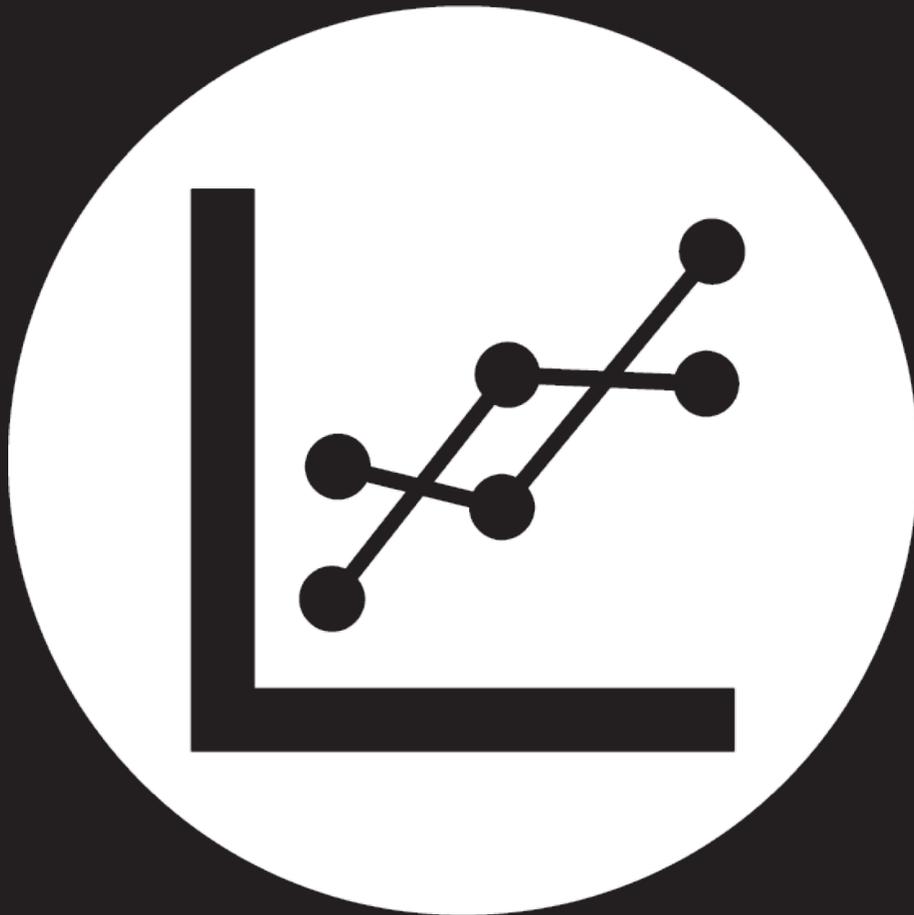


DATA SCIENCE & ANALYTICS





DATA SCIENCE & ANALYTICS

Data Science & Analytics is a one-of-a-kind, 10-week course that teaches the fundamentals of data analytics, using easy-to-understand and engaging data exercises. Offered by Startup Institute and Western New England University, this class includes hands-on training with R and Tableau, empowering students to take their career to the next level by moving beyond simple spreadsheets to impressive dashboards and visualizations.

Students learn what to expect in their next roles from experienced analytics professionals and startup veterans who have hired and grown successful data science teams. The best part: students learn these skills using data that they know and love.

COURSEWORK

Pre-work includes review of websites that provide background for the first class and a survey to gauge the level of instruction and activities that best fit with students' needs.

Topics and Outcomes for Each Class:

Data Science Overview

In this session, students learn about what data science is and why it matters. Students learn what kind of roles data scientists play in startups and larger companies. They gain knowledge of tools that data scientists use and a clear understanding of what to expect from the course.

Rstudio setup and build on pre-work exercises. Students select a sports question for their capstone projects.

ETL and Excel Basics

Students begin with critical practices for working with data files. They learn how to question the source and quality of the data. Working with a raw data file in Excel, they start to transition to R. From this activity, students develop skills in creating a better-formatted data file.



R Intro and APIs

During the third class, students learn how to read data into R from various sources. They will understand how data APIs differ from batch files. Students will be able to make a simple API call to read game scores from recent events directly into R. As a result of this learning, they will be able to obtain live data.

Week Four: Data Exploration with R

In this session, students will parse and explore data using summary and aggregation techniques in R. They learn how to subset and combine different data sets. With exercises and analysis, students identify problems with the data and missing data points. At the completion of this session, students are not only better able to detect problems, they also will have discussed processes and used tools to resolve them. This session also includes a brief introduction to Tableau Public and how to publish a workbook with extracted data.

Data Visualization

Students learn to explore data visually using ggplot2 in R. They build understanding of the basics of ggplot2 such as data, aesthetics and geometries. They will learn how to determine when to use various types of charts (bar chart, scatter diagram, facet, etc.).

Scripting and Reproducibility

Students set up multi-steps scripts that help automate data acquisition and formatting. Further developing skills in these areas, they request updates from databases and receive up-to-date stats. They identify the advantages to repeating an analysis in R instead of Excel. As a result of this learning, students will be able to create reproducible R scripts that can be updated with live data from APIs.

Interactive Dashboards with Shiny

During this session students learn how to create and deploy an app to Shinyapps.io in preparation for their week 8 presentations. This Shinyapps.io dashboard, combined with Tableau Public, will serve as a public portfolio of the work they completed in the course.

Project Presentations

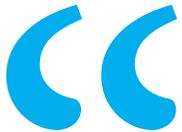
In the last class, students review the sports question that they chose in week one. Their presentations include findings and conclusions. Feedback and advice from instructors and peers help students focus on skills and tactics for not only communicating findings, but on the approach they use for using data to support decisions as a catalyst for action.



ABOUT OUR PART-TIME CLASSES

Our part-time classes provide you with a supportive community as you learn introductory technical skills. We combine instructors from around the local tech community, in-person evening classes, and online resources to create a personalized learning network.

Whether you are aiming for a promotion, exploring a new career path, or looking for a new hobby—our intro classes will get you started.



The course is taught for you to learn at your own pace. In the community, you are surrounded by ambitious and smart people. You will have the opportunity to share honest conversations with the teaching mentors and have their help guide you closer to your personal goals. For anyone who is looking to grow their network, this is a great place to be.

— Dennis Yip, Part-Time Class Alumnus

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