

Agenda

(all times in Eastern)

Introduction to Data Science and Visualization in Excel

November 9th 2:00-4:00 PM

- **Before Class:** Come prepared and ready to learn. Have Microsoft Excel pre-installed on their computer.
- **Covering:** Tall vs Wide Data; Database Design Elements; Understanding Microsoft Access; Excel Power Pivot; Querying and Loading Data; Transforming Data; Merging Data in Power Query; Pivot Tables and Pivot Charts; Chart Types; Creating a databas; Useful Plug-Ins; Creating forecasts with the Analysis ToolPak.
- **Key Takeaways:** Participants will learn how to clean data in Excel using Power Query/Pivot and create a dashboard that visualizes IPEDS completer data by CIP code, matched with SOC data for their LDD.

Introduction to Tableau

November 10th 2:00-4:00 PM

- **Before Class:** Download either Tableau Public or Tableau Desktop. Be familiar with all materials listed in the [Tableau Basic Pre-Recorded Sessions \(Download Here\)](#).
- **Covering:** Tableau basics and workspace; Connecting to a file; Creating a text table; Creating Sets and Parameters; Inserting a sheet in a tooltip; Creating an interactive map; Formatting – Mark Labels, Detail, Coloring; Actions; Creating an interactive drill down map.
- **Key Takeaways:** Participants will learn how to create a drilldown map that uses parameters, sets, and actions to rotate between county-level and multi-county-level views of migration into and out of a geography using IRS Statement of Income data.

Dashboard Design and Interactive Visualizations in Tableau

November 16th 2:00-4:00 PM

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- **Before Class:** Have a great Veteran's Day. If you have not already, familiarize yourself with all materials listed in the [Tableau Basic Pre-Recorded Sessions \(Download Here\)](#).
- **Covering:** 'Case, When' and 'If, then' functions; Converting data types; Using parameters across data sources; Creating a line chart; Creating a zoomable chart; Using Level of Detail Expressions; Formatting Dashboards.
- **Key Takeaways:** Participants will learn how to create an interactive dashboard that allows users to visualize population projections data and migration data for a selected county or Economic Development District using interactive features.

Introduction to R and R Packages

November 17th 2:00-4:00 PM

- **Before Class:** Complete R Studio [Primer 1](#) and [Primer 2](#).
- **Covering:** Introduction to R; Assigning Objects; Object Names and Syntax; Data Types; Installing R Packages; Importing Data with readxl; Pipe Operator; Introduction to Tidyverse; Selecting data; transforming data and splitting/merging columns; Mutate data with dplyr; Creating summary statistics; Calculating difference between rows; joining data; Converting data types;
- **Key Takeaways:** Participants will learn how to perform basic operations in R, load R packages, and join and mutate data to transform data to produce unemployment rate summary statistics.

Visualizing your data in R with ggplot

November 19th 2:00-4:00 PM

- **Homework:** Complete R Studio [Primer 3](#) and [Primer 4](#) and explore the remaining [R primers](#)!
- **Covering:** Introduction to GGplot; Loading ggplot; AES to define aesthetics; Changing axis labels and titles; faceting data; Installing the blscrapeR package; importing data; cleaning data; bar charts; histogram; box plots; month to month line plots; plotting maps.
- **Key Takeaways:** Participants will learn how to visualize and map LAUS data for their LDD using the blscrapeR package.