

Module 1 – Welcome

- Course Expectations
- The Course Data
 - Iris Data Set
 - Adult Census Income Data Set
 - Titanic Data Set

Module 2 – R and RStudio

- The History of R
 - A Language for Data Analysis
 - R's Popularity Explosion
- Similarities Between Excel and RStudio
 - Excel's Data Analysis Ecosystem
 - R's Data Analysis Ecosystem
 - Excel Users Write Code
 - Excel Code Is Like R Code
 - Extending the Excel & R Ecosystem

Module 3 – Data Analysis Is All About Objects

- Objects in Excel and R
- It All Starts with Tables
 - Excel Tables
 - R Tables
 - Cells of Data
 - Columns of Data
- Vectors of Data
 - Excel Cell Ranges
 - R Vectors
- Data Types
 - Excel Data Formats
 - R Data Types
- Math with Vectors
 - Excel-Style Vector Math
 - R Vector Math

Module 4 – Filtering R Tables

- Logical Filtering
 - Excel Logical Filtering
 - R Logical Filtering
 - Filtering with %in%
- R Filtering
 - Filtering with Numbers
 - Filtering with Names
 - Filtering with Direct Logic
- Hands-on Lab #1

Module 5 – Basic Functions

- Missing Data
- Common Stats Functions
 - Mapping Excel Functions to R Functions
 - Missing Values
- The summary Function
 - Summary Stats in Excel
 - R's summary Function
- The data.frame Function
- The cbind and rbind Functions
- The aggregate Function
 - Excel Data Aggregation
 - R Data Aggregation
- Hands-on Lab #2

Module 6 – Pivoting Data

- The Mighty dplyr
- Another Kind of Table – tibbles
- Making Your Own Data
 - Making Data in Excel & R
 - Making Vectors of Data
- Selecting and Filtering Data
- Grouping and Summarizing Data
 - Pivoting Data in Excel and dplyr
 - Grouping Data

- Summarizing Data

Module 7 – Multiple Tables of Data

- Joining Data
 - Joining Data in Excel
 - Joining Data in dplyr
- Sorting Data
- Hands-on Lab #3

Module 8 – Data Visualization

- Introducing ggplot2
- Box Plots
- Histograms
- Bar Charts
- Scatter Plots
- Hands-on Lab #4

Module 9 – Course Wrap-Up

- Additional Resources