

# JC Penney ACoE

## Introduction to R: Syllabus

We aim to provide a concise hands-on introduction to the R language in two 1.5-hours session. R, like any other programming language, is difficult to comprehensively cover in 2 hrs. Hence, we aim to equip you with a framework to approach data-analysis in R. We would make use of Data Science Pipeline defined by [Hadley Wickham](#) and make use of ‘tidyverse’ ecosystem to learn R. The session would serve as a base for the advanced topics to be covered later on.

### Session Outcome

- Introduction of R as programming language and the ecosystem
- Understanding the use of R in the context of Data Science Work-flow
- ‘Tidyverse’ introduction to learn the basics of data wrangling in R
- Preparation/Pre-requisite for Intermediate R session

## Session Outline

### R Ecosystem Overview

- Historical background
- R Adoption trend
- Industry usage of R
- Understanding R Ecosystem - RStudio, CRAN, Packages

### Base R

- R Objects: integers, doubles, characters, logical and factor
- Data Structures: vectors, matrix, list, data.frame

### Import using Tidyverse

- Tidyverse introduction
- readr
- readxl

### Data Transformation using Tidyverse

- five verbs of dplyr
- join using dplyr
- grouping using dplyr

### Things to Explore Further

- ggplot2
- plotly
- RShiny