

R for Economics I

Course Learning Objectives

1. To develop a foundational understanding of the R programming language and its relevance to economics
2. To gain practical understanding of R's basic data structures and syntax for data manipulation
3. To acquire programming skills in R, in order to use it effectively for future modeling techniques and economic analysis

Course Outcomes

1. Demonstrate concepts of R and its practical explanation
2. Apply R's basic structures to use R in practical scenarios for manipulation and analysis
3. Analyze and solve economic problems using programming skills in R

Module No	Module Topics	Duration
I	Introduction to R programming <ul style="list-style-type: none">- Overview of R programming language- Need and applications- Significance in Economics Installing and using R and RStudio <ul style="list-style-type: none">- Installing R and RStudio- Understanding RStudios interface- Understanding basic syntax- Installing and loading packages	08
II	Variable Types and Objects <ul style="list-style-type: none">- Numeric, Integers, Characters, Dates- Vector, Matrix, Array, Lists, DataFrames, Factors Operators, and Comments <ul style="list-style-type: none">- Assignment, Relational, Arithmetic, Logical- Comments Flow Control <ul style="list-style-type: none">- If, If/else, Nested If/else, Switch- For loop- While loop- Break, next, repeat	12
III	Basic Functions <ul style="list-style-type: none">- Math functions- Statistical functions- Number rounding functions- String functions Working with Data <ul style="list-style-type: none">- Reading and writing data from tables, csv files, and excel worksheets- Reading and writing excel worksheets- Loading existing datasets	10

Reference Books:

1. R Programming Fundamentals by Kaelen Medeiros, September 2018, Packt Publishing - https://www.oreilly.com/library/view/r-programming-fundamentals/9781789612998/?_gl=1*_q5a4o0*_ga*MTU4OTIyNDk4Ny4xNzA3NTcxODYz*_ga_092EL089CH*MTcwNzYyNjA1My4yLjEuMTcwNzYyNjA3OS4zNC4wLjA.
2. R Cookbook, James J.D Long and Paul Teetor, 2nd Edition, O'Reilly, 2019, <https://rc2e.com/>
3. Learning R Programming by Kun Ren, October 2016, Packt Publishing, <https://www.oreilly.com/library/view/learning-r-programming/9781785889776/>
4. Hands On Programming with R, Garrett Gloremund, O'Reilly, 2014, https://www.google.co.in/books/edition/Hands_On_Programming_with_R/uk4BBAAAQBAJ?hl=en&gbpv=0