

R for Economics Graduate Students
Syllabus
January 2024

Location: Rudder 301

Dates:

Wednesday, January 10, 2024 8:00 am to 5:00 pm

Thursday, January 11, 2024 8:00 am to 5:00 pm

Friday, January 12, 2024 8:00 am to 12:00 pm

Videos for Downloading and Installing R and RStudio:

For Windows: <https://www.youtube.com/watch?v=YrEe2TLr3MI>

For MacOS: <https://www.youtube.com/watch?v=iFzVl8ehVPk>

Teaching Structure

- Taught in-person
- Learning support available in the room from multiple teaching assistants and instructors
- 10 minute breaks every hour
- 1 hour lunch break on full-day sessions
- Helpdesk sessions available during 2nd and 3rd days of workshop

Requirements

- No prior experience in coding/R required
- Students will bring laptops with ability to install additional free software and related packages
- It is **STRONGLY** recommended that students install R and RStudio prior to the start of the workshop

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Learning Outcomes:

- Orientation and Introduction
 - Motivate the use of R for Economics
 - Familiarity with the RStudio IDE
 - Understand general programming concepts
- Programming Skills
 - Core concepts: Variables, Operators, Numeric Functions
 - Data Types and Structures
 - Flow Control (e.g. for loops, if-else statements)
 - Importing and Exporting Data
 - Packages: ggplot2, xts, dplyr
- Data Skills
 - Data manipulation and handling: subsetting, sorting, filtering, labeling
 - Data Visualization: histograms, scatterplots
 - Data presentation: report generation via R markdown methods

Schedule

Day	Time	Topic	Instructor
Wednesday 10 Jan 2024	8:00-8:50	Installing R and R packages	All
	9:00-9:50	Installing R packages, R Studio tour	W. Brashear
	10:00-10:50	Numeric operations, Data Types, and Variables	R. Lawrence
	11:00-11:50	Numeric operations, Data Types, and Variables (cont.); Built-in Functions	R. Lawrence
	12:00-1:00	LUNCH	NA
	1:00-1:50	Vectors	W. Brashear
	2:00-2:50	Matrices	W. Brashear
	3:00-3:50	Data Frames and Tibbles	Z. He
	4:00-4:50	Data Frames and Tibbles	Z. He

Day	Time	Topic	Instructor
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Thursday 11 Jan 2024	8:00-8:50	Helpdesk	All
	9:00-9:50	Flow Control	W. Brashear
	10:00-10:50	Time Series	R. Lawrence
	11:00-11:50	dplyr	W. Brashear
	12:00-1:00	LUNCH	
	1:00-1:50	Importing and Exporting Data	J. Winchell
	2:00-2:50	Plotting in R (base functions)	W. Brashear
	3:00-3:50	Plotting in R (ggplot2)	W. Brashear
	4:00-4:50	Helpdesk	All

Day	Time	Topic	Instructor
Friday 12 Jan 2024	8:00-8:50	Helpdesk	All
	9:00-9:50	User-created Functions	W. Brashear
	10:00-10:50	Rmd Project	W. Brashear
	11:00-11:50	Rmd Project	W. Brashear