

PH 718 Data Management and Visualization in *R*

Part 0: Syllabus Review & Introduction to *R*

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Contact

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- Tutor: Don Cramer
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- Lectures
 - Tue/Thur 16:00–17:15 via Zoom
- Office Hours
 - By appointment

Grading

- Assignments (60%)
 - Submitting digital copies
 - Attaching (if applicable) both outputs and source codes
 - Including necessary interpretation
 - Organized in a CLEAR and READABLE way
 - Accepting no late submission
- Final project (40%)
 - TBD
- Bonus points (TBD)
 - Irregular quiz held on Canvas

Materials

- Reading list
 - [R4DS] H. Wickham, M. Cetinkaya-Rundel, & G. Grolemund. (2023). *R for Data Science: Import, Tidy, Transform, Visualize, and Model Data*, 2nd Ed. Sebastopol: O'Reilly Media. (Accessible at r4ds.hadley.nz)
 - [ISL] G. James, D. Witten, T. Hastie, & R. Tibshirani. (2021). *An Introduction to Statistical Learning: with Applications in R*, 2nd Ed. New York: Springer. (Accessible at www.statlearning.com)
- Lecture notes and beyond
 - Posted at Canvas and zhiyanggeezhou.github.io
 - Subject to update **without prior notice**

Why using *R*?

- Open source: Freely accessible to everyone.

- Powerful for data analysis: Extensive libraries created and maintained by statisticians; built-in methods for advanced statistical modeling.
- Data visualization: High-quality plots with libraries like *ggplot2*.
- Cross-platform: Working on Windows, macOS, and Linux.

Be careful when using *R*

- NO quality control: Packages developed by small groups without extensive testing

How to learn *R*?

- Self-learning with regular practice
- Be sophisticated in statistics

How to find solutions when using *R*?

- Help manual (reliable)
- Online resources (not always reliable)
 - Search engines: Google, etc.
 - Q&A communities: Stack Overflow, Reddit, Posit Community, etc.
 - Large language models: ChatGPT, Claude, etc.

Installation

- Base *R*: <https://cran.r-project.org>
- *Rstudio*: <https://www.rstudio.com>