

ESRM 6990V: Advanced Seminar - Intro to R

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1 Web Books

1. Introduction to Data Science Part I - Data Wrangling and Visualization with R by *Rafael A. Irizarry*
2. Introduction to Data Science Part II - Statistics and Prediction Algorithms Through Case Studies by *Rafael A. Irizarry*
3. R for Data Science - Visualize, Model, Transform, Tidy and Import Data by *Hadley Wickham & Garret Grolemund*
4. Yet Again: R + Data Science by *Albert Rapp*
5. Happy Git and GitHub for the useR by *Jennifer Bryan*
6. R Programming for Data Science by *Roger D. Peng*

2 R Community

1. RWeekly.org

3 Publications

4 Outline

1. R Basics
2. Data Visualization
3. Data Wrangling
4. Productive Tools

5 Why ITDS?

This book is free and comprehensive for a broad R tasks of data analysis. For example, the book covers R programming (**basics of R**), data wrangling with **dplyr**, data visualization with **ggplot2**, file organization with **Unix/Linux shell**, version control with **Git/Github**, and reproducible document preparation with **Quarto** and **knitr**.

6 Schedule

Following materials are only allowed for previewing for students registered in ESRM 64503. DO NOT DISTRIBUTE THEM on the internet. They will be removed after the course ends.

Week	Date	Topic	Reading	HW/ Data
1	01/13	Lecture 1: Basics of R	ITDS Ch.1	
2	01/20	Martin Luther King Holiday (No Class)		
3	01/27	Lecture 2: Programming Basics		
4	02/03	Lecture 3: Write academic reports with R projects and Quarto markdown		
5	02/10	Lecture 4: Data summarization with <i>tidyverse</i>		
6	02/17	Lecture 5: Data cleaning with <i>tidyverse</i>		
7	02/24	Lecture 6: Data transformation with <i>tidyverse</i>		
8	03/03	Lecture 7: Data Importing		
9	03/10	Lecture 8: Data Visualization I with <i>ggplot2</i>		
10	03/17	Lecture 9: Data Visualization II with <i>ggplot2</i>		
11	03/24	Lecture 10: Data Visualization III (No class)		
12	03/31	Spring Break		
13	04/07	Lecture 11: File Organizing with Terminal / Powershell		
14	04/14	Lecture 12: Git and GitHub	Pro Git Book	
15	04/21	Final Project		
16	04/28	Final Project		
17	05/05	Final Project		