

MATH 7608 STATISTICAL PROGRAMMING WITH R
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Spring, 2018
Time: MW 02:20pm-03:45pm
Room: DH 207

(A) Course Contents:

1. Brief overview on traditional R programming: Basic Data Structure, Expression, Basic Programming, Input and Output, Programming with functions, Advanced Data Structure in R.
2. Data Visualization with ggplot2.
3. Data Transformation with dplyr, Tibbles Versus data.frame, Data Import with readr, Tidy Data with tidyr, Relational Data with dplyr
4. Strings with stringr, Pipes with magrittr, and More about Functions and Vectors and Iteration with purrr

(B) Office Hours: 10am-11:30am MW (DH 219) or by appointment lihdeng@memphis.edu

(C) Textbook and recommended references:

- “R for Data Science”, by Hadley Wickham and Garrett Golemund. Publisher: O’Reilly. ISBN-13: 978-1491910399. ISBN-10: 1491910399.
- PC/Mac with access to internet will be required. Students will install R, which is a free programming language can be downloaded at <https://cran.r-project.org/>
- Recommended reference: The R Book, Second Edition, by Michael J. Crawley. Publisher: Wiley, ISBN-13: 978-0470973929, ISBN-10: 0470973927
- Recommended reference: “R Programming for Data Science”, by Roger D. Peng. pdf file available at <http://leanpub.com/rprogramming>
- Recommended reference: “R Graphics Cookbook” by Winston Chang, First Edition (2012), Publisher: O’Reilly, ISBN: 978-1-449-31695-2.

(D) Grading:

- mid-term exam 25 %
- final project (or final exam) 35 %
- homework 25 %
- class participation 15 %