

# R (BGU course)

*Jonathan D. Rosenblatt*

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# Chapter 1

## Preface

This book accompanies BGU’s “R” course, at the department of Industrial Engineering and Management.

It has several purposes:

- Help me organize and document the course material.
- Help students during class so that they may focus on listening and not writing.
- Help students after class, so that they may self-study.

At its current state it is experimental. It can thus be expected to change from time to time, and include mistakes. I will be enormously grateful to whoever decides to share with me any mistakes found.

I am enourmously grateful to Yihui Xie, who’s *bookdown* R package made it possibly to easily write a book which has many mathematical formulae, and R output.

I hope the reader will find this text interesting and useful.



## Chapter 2

# Introduction





## Chapter 3

# Exploratory Data Analysis



## Chapter 4

# Linear Models



## Chapter 5

# Generalized Linear Models



## Chapter 6

# Linear Mixed Moxeld





## Chapter 7

# Multivariate Data Analysis



## Chapter 8

# Supervised



## Chapter 9

# Unsupervised



## Chapter 10

# Reports





## Chapter 11

# Parallel Computing



## Chapter 12

# Memory Efficiency



## Chapter 13

# Sparse Representations



## Chapter 14

# Convex Optimization





## Chapter 15

# RCpp



## Chapter 16

# Numerical Linear Algebra



## Chapter 17

# Writing Packages



# Bibliography