

**Department of Decision and Information Sciences**  
**BZAN6351/4397: Selected Topics in Business Analytics:**  
**Basic Programming for Business Analytics**  
**Fall 2019**

**Instructor:** Dr. Jinghui (Jove) Hou (“Hou” is pronounced as / hōl/)

**Email:** [jhou@bauer.uh.edu](mailto:jhou@bauer.uh.edu)

**Course format:** Hybrid

**Course website:** see Blackboard

**Class meetings:** Online (asynchronous), or Mondays 11:30 AM – 1:00 PM (Melcher Hall 127)

**COURSE DESCRIPTION:**

This course is designed to introduce the fundamental of programming for business analytics using R. R is a powerful language for data management, visualization, and predictive modeling; it is now one of the most popular languages in business analytics. In this course, you'll be learning about the basics of R, and you'll end with the confidence to write your own R scripts.

**LEARNING OBJECTIVES:**

This course takes you from having no previous experience in programming to an intermediate level in R. Upon completion of this course, students should be able to:

- Use RStudio, read R documentation, and write R scripts.
- Use R programs to perform data manipulation/management and analysis tasks.
- Produce basic graphics and more advanced graphics using ggplot2 library.
- Report results of statistical analyses with R Markdown.
- Learn further R on your own, or other programming languages.
- Develop professional skills: creative thinking, critical thinking, and self-directed learning.

**PREREQUISITE:**

1. STAT 3331, BZAN6310/6320, or equivalent. Basic knowledge of statistics is presumed.
2. Prior programming experience is useful, but neither required nor presumed.
3. Basic computer skills are expected, including accessing Blackboard and your email, downloading and uploading files, connecting to the internet and using a search engine.

**TEXTBOOKS:**

Required materials:

- The following texts are available for free online. Students may find it useful to own a personal copy of one or two of the texts.

[\*R for Data Science\*](#), by Garrett Grolemund and Hadley Wickham

[\*R Programming for Data Science\*](#), by Roger Peng

**COURSE METHODS:**

**Hybrid format<sup>1</sup>.** This class uses a hybrid format. Course contents will be delivered online through the Blackboard course system. On the course site, you will access online lessons, course materials, and additional resources. We will also hold some sections in the classroom. These face-to-face sections are scheduled for exams and reviews.

### **COURSE POLICIES:**

**Missed Classes:** The student is responsible for obtaining material, which may have been distributed in class when he/she was absent. Missed or late exams cannot be made up under any circumstances, unless an official excuse is provided. **Any uncoordinated, unexcused missed exam will result in a score of 0 for that exam.**

**Academic Dishonesty:** Plagiarism and cheating are serious offenses and may be punished by failure on exam, paper or project; failure in course; and or expulsion from the University. For more information, refer to the "Academic Honesty Policy" accessible here (<http://www.uh.edu/provost/policies/honesty/>). The University of Houston Academic Honesty Policy is strictly enforced by the C. T. Bauer College of Business. No violations of this policy will be tolerated in this course. Students are expected to be familiar with this policy.

**Need for Assistance:** If you have any condition, such as a physical or learning disability, which will make it difficult for you to carry out the work as outlined in this document, or which will require academic accommodations, please notify me as soon as possible. I will recommend that you contact the Center for Students with Disabilities. The contact person is Justin Dart in the CSD building #568, room 110. The numbers for the CSD office are Ph: 713-743-5400; TDD: 713-749-1527; Fax: 713-743-5396 or email: [uhcsd@central.uh.edu](mailto:uhcsd@central.uh.edu). Also available to you is *Counseling and Psychological Services (CAPS)*, which can help students who are having difficulties managing stress, adjusting to college, or feeling sad and hopeless. You can reach CAPS ([www.uh.edu/caps](http://www.uh.edu/caps)) by calling 713-743-5454 during and after business hours for routine appointments or if you or someone you know is in crisis. In addition, there is no appointment necessary for the "Let's Talk" program, which is a drop-in consultation service at convenient locations and hours around campus. [http://www.uh.edu/caps/outreach/lets\\_talk.html](http://www.uh.edu/caps/outreach/lets_talk.html).

**Inclement Weather or Technical Problems:** In case of inclement weather or technological problems that prevent the University from providing access to course materials you may contact the Professor by phone via the numbers given above or send the Professor an email inquiry. In addition, the Professor will notify students as soon as possible in such instances and provide instructions on how the course will proceed.

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<sup>1</sup> According to UH guidelines, "Hybrid classes at the University of Houston combine traditional classroom instruction with online class instruction. Hybrid courses have required meetings, and meet less than half of the time in a traditional face-to-face classroom environment, with the remainder of the course delivered online."

**COURSE SCHEDULE:**

**Important:** If necessary, this syllabus will be modified. Any modifications to the syllabus will be posted on the course site and email notification will be distributed to course participants.

<b>WK</b>	<b>Date</b>	<b>Topics</b>	
1	Aug. 19	Unit 1. Introduction and Set-up (Aug. 19)	Homework 0
2	Aug. 22 - 28	Unit 2. R Basics and Introduction to Data	
3	Aug. 29 - Sep. 4	Unit 3. Data Frames	Homework 1
4	Sep. 5 - 11	Unit 4. R Programming Fundamentals	Homework 2
		Review Section # (Sep. 9)	
5	Sep. 12 - 18	Exam #1 (Sep. 16)	
6	Sep. 19 - 25	Unit 5. R Packages and dplyr	
7	Sep. 26 - Oct. 2	Unit 6. Data Manipulation with dplyr	Homework 3
8	Oct. 3 - 9	Unit 7. Data Visualization with ggplot2	Homework 4
		Review Section #2 (Oct. 7)	
9	Oct. 10 - 16	Exam #2 (Oct. 14)	
10	Oct. 17 - 23	Unit 8. Statistics and Comparison Tests	
11	Oct. 24 - 30	Unit 9-A. Correlation and Regression	Homework 5
12	Oct. 31 - Nov. 6	Unit 9-B. Multiple Regression	Homework 6
		Review Section #3 (Nov. 4)	
13	Nov. 7 - 13	Exam #3 (Nov. 11)	
14	Nov. 14 - 20	Unit 11. Course Summary	
15	Nov. 21	Open Office	
16	Dec. 3 - 11	Final Exam Period	Final Project due Dec 5