Introduction To Business Analytics
ITAO60200

Office: 337 Mendoza

Email: seth.berry@nd.edu

Office Hours

MTW: 12:00 to 1:00

F: 10:00 to 12:00

These are the official times. If you find my door ajar to any degree (it will typically be less than 10° and the office will be dark), then you are more than welcome to drop in and chat with me about absolutely anything (stats, programming, career, etc.).

Class Days and Time

Monday and Wednesday – 10:00 to 11:50

Location – Mendoza 161

Course Objectives

- Develop hypotheses to solve business problems
- Identify different distributions and understand when to use each one
- Select the appropriate statistical technique to answer questions
- Analyze data to test hypotheses, reach conclusions, and defend positions
- Develop action plans based upon results

Attendance

Attendance in this course is not required, in that I will not be taking attendance; attendance is certainly recommended (and even encouraged). While the lecture presentations will be available, they are not verbatim recitations of what was covered and you may not rely on them to make it through everything in the course. Learning statistics takes effort and attending class is but one small part of that effort.

Although attendance is not required, we will have a weekly short comprehension check question. Each question is worth 5 points and is essentially a participation credit. These are meant to be done in class – if you are not in class when they are given, you cannot submit them.

Readings

There is no official textbook for this course, but there are going to be a few assorted readings and resources for topics. I will also share resources for topics. We will discuss these readings on Wednesdays of each week.

Homework

All homework assignments must be submitted in an html file knitted from R Markdown. The reasons for this requirement are mainly related to making sure that you have successfully gotten results from your code and that you are not just submitting code without running it first. Once you start using R Markdown, it will be hard for you to go back to writing in a traditional word processor.

A significant portion of your grade will come from the homework skills map (i.e., your path towards statistical enlightenment). The skills road map has different levels (bronze, silver, and gold). Each level must be completed in order (i.e., you cannot skip silver and go straight to gold from bronze). Silver and gold levels essentially act as modifiers to not only your grade, but also your understanding.

Please feel free to work together on the bronze level of homework, but each assignment needs to be your own work. Putting your heads together to formulate an analytic attack plan is perfect (we all stands on the shoulders of giants), but copying and pasting text from each other is unacceptable. In other words, your code and words should not look like one of your classmate's – you will be graded accordingly.

Exams

There will be one exam during the course of this semester.

Presentations

Team presentations will be used as a final exam.

R

There are many statistical programs available and you have likely had some exposure to many of them. In this course, we will be using R exclusively. R is a free and open-source

statistical computing language and it is *lingua franca* for modern statistics. We are going to dedicate some time to learning R and working through examples together; our arrangement will be very similar to the science labs that we all remember from our undergrad days. If you have never done any object-oriented programming, it will take a little work – I am only ever an email or visit away.

Grade Breakdown

Comprehension Checks and participation – 30 points (11%)

Homework – 90 points (31%)

Test – 100 points (34%)

Presentation – 70 points (24%)

Total – 290 points

A = 276+ points

A- = 261-275 points

B+ = 252-260 points

B = 244-251 points

B- = 232-250 points

C+ = 223-249 points

Schedule

Week	Date	Topic	Assignments
1	08/26 (M)	Introduction	
	08/28 (W)	Probability	
2	09/02 (M)	Distributions	Homework #1
	09/04 (W)	Point and Interval Estimation	
3	09/09 (M)	Hypothesis Testing	Homework #2
	09/11 (W)	Experiments	
4	09/16 (M)	The General Linear Model	
	09/18 (W)		
5	09/23 (M)	Midterm	
	09/25 (W)	Non-parametric models	
6	09/30 (M)	Optimization	Homework #3
	10/02 (W)	AI	
7	10/07 (M)		
	10/10 (W)	Presentations	