Welcome to HCIP 5122

Students:

Welcome to HCIP 5122 Visual Analytics for Fall 2022. This class is currently in person on Mondays from 530-830, and all course content and assignments will be available on this Canvas site. We will be using Datacamp for supporting tutorials along with Tableau. We will be learning the overall concepts of building quality data visualizations along with some tools and resources to apply these concepts.

Course Objectives

In this course you will:

- Evaluate and critique visualization designs
- Learn visualization techniques & theory
- Implement interactive data visualizations
- Develop a substantial visualization portfolio

Specifically, you should:

- Understand the principles of data and graphic design
- Evaluate the credibility, ethics, and aesthetics of data visualizations
- Create well-designed data visualizations with appropriate tools
- Share data and graphics in open forums
- Articulate best practices in data visualization
- Develop and interpret a wide range of charts and graphs in Tableau
- Enhance and customize visualizations as needed for a specific business context
- Verbally communicate persuasive, data-driven business insights supported by Tableau visualizations

Tableau

Students will be given a product code to download Tableau Desktop and will have access for the duration of the course. We will be using Tableau for the first half of the class where students will learn to develop basic and advanced charts/graphs, create calculated fields, maps, and put it all together in a stunning dashboard with many other Tableau features.

Python Jupyter Notebook/R and R Studio

Outside of Tableau You we will be using open source (and free!) programming languages R and Python . You will use RStudio as the main program to access R and Jupyter notebook for Python. Think of R/Python as engines and RStudio/Jupyter Notebook as a car dashboard—R/Python handle all the calculations and the actual statistics, while RStudio/Jupyter Notebook

provide a nice interface for running R/Python code. The whole second half of the course we will be utilizing R shiny to build interactive web applications and dahsboards.

You can find instructions for installing R, RStudio, and all the tidyverse packages here.

Required Textbooks (All free!)

- Kieran Healy, Data Visualization: A Practical Introduction (Princeton: Princeton University Press, 2018), http://socviz.co/. [FREE online; $30.62 new at Amazon]
- Claus E. Wilke, Fundamentals of Data Visualization (Sebastopol, California: O'Reilly Media, 2018), https://serialmentor.com/dataviz/. [FREE online; $36.94 new at Amazon]
- Hadley Wickham and Garrett Grolemund, R for Data Science: Import, Tidy, Transform, Visualize, and Model Data (Sebastopol, California: O'Reilly Media, 2017), http://r4ds.had.co.nz/. [FREE online; $18.17 new at Amazon]
- Hadley Wickham, Mastering Shiny (O'Reilly Media, 2020), https://mastering-shiny.org/. Online version

Online help and Slack

Computer programming can be difficult. Computers are stupid and little errors in your code can cause hours of headache (even if you've been doing this stuff for years!).

Fortunately there are tons of online resources to help you with this. Two of the most important are StackOverflow (a Q&A site with hundreds of thousands of answers to all sorts of programming questions) and RStudio Community (a forum specifically designed for people using RStudio and the tidyverse (i.e. you)).

Additionally, we have a class chatroom at Slack where anyone in the class can ask questions and anyone can answer. Ask questions about the readings, problem sets, and projects in the class Slack workspace. I will monitor Slack regularly, and you should also all do so as well. You'll likely have similar questions as your peers, and you'll likely be able to answer other peoples' questions too.

Office hours for our TA will be posted in Canvas.

I am looking forward to meeting each one of you and working with you this fall. Class will be officially available Monday August 23rd, and I look forward to meeting you all then!

CLASSROOM POLICIES

BE NICE. BE HONEST. DON'T CHEAT.

Orderly and productive classroom conduct

I will conduct this class in an atmosphere of mutual respect. I encourage your active participation in class discussions. Each of us may have strongly differing opinions on the various topics of class discussions. The conflict of ideas is encouraged and welcome. The orderly questioning of the ideas of others, including mine, is similarly welcome. However, I will exercise my responsibility to manage the discussions so that ideas and argument can proceed in an orderly fashion. You should expect that if your conduct during class discussions seriously disrupts the atmosphere of mutual respect I expect in this class, you will not be permitted to participate further.

Recording in the classroom

Electronic video and/or audio recording is not permitted during class unless the student obtains permission from the instructor. If permission is granted, any distribution of the recording is prohibited. Students with specific electronic recording accommodations authorized by the Office of Disability Services do not require instructor permission; however, the instructor must be notified of any such accommodation prior to recording. Any distribution of such recordings is prohibited.

Discussion of grades and performance

Such discussion shall occur between the student and the instructor(s). Sharing information regarding grades and performance in places such as discussion forums or email blasts is prohibited.

Code of Student Responsibility

"The purpose of the Code of Student Responsibility (the Code) is to protect the campus community and to maintain an environment conducive to learning. University rules for student conduct are discussed in detail. The procedures followed for any Student, Student Organization or Group charged with a violation of the Code, including the right to a hearing before a Hearing Panel or Administrative Hearing Officer, are fully described." (Introductory statement from the UNC Charlotte brochure about the Code of Student Responsibility). The entire document may be found at this site: https://legal.uncc.edu/policies/up-406

Academic Integrity

All students are required to read and abide by the Code of Student Academic Integrity. Violations of the Code of Student Academic Integrity, including plagiarism, will result in

disciplinary action as provided in the Code. Students are expected to submit their own work, either as individuals or contributors to a group assignment. Definitions and examples of plagiarism and other violations are set forth in the Code. The Code is available from the Dean of Students Office or online at: https://legal.uncc.edu/policies/up-407.

Assignments and Grades

Assignment	Percent
Data Camp Courses	**10%**
HW & Problem sets	**30%**
Quizzes	**10%**
Design Contest	**25%**
Final Project	**25%**