ECON 8320 – Tools for Data Analysis
Date & Time – Room: TBA

Instructor: Dustin White
MH 332M
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Office Hours: TBA, and by appointment.

Materials: Python Lectures PDF from Quant-Econ.net
Course Slides (hosted on Blackboard)
Course Notes (also hosted on Blackboard)
Data Science from Scratch (ISBN: 978-1-4919-0142-7)

Prerequisites: ECON 2200 or BSAD 8150 (or equivalent); BSAD 2130 or equivalent. No previous programming experience is required.

Description: The course will cover basic principles of programming languages, as well as libraries useful in collecting, cleaning and analyzing data in order to answer research questions. The course will utilize basic Economic principles and Econometric methods as inspiration for assignments and projects throughout the duration of the course, and will do so in a way that is accessible to non-Economists. This course is intended to introduce the student to the Python programming language as a tool for conducting data analysis. While the course uses Python, the student should be able to move to other languages frequently used in data analysis using the principles taught in this course.

Course Outline:

Data Types and Documentation	approx 1 day
Functions	approx 1 day
Classes	approx 2 days
Threading	approx 1 day
Numpy and Scipy	approx 2 days
Pandas (pandasql and sqlite3)	approx 1 day
Matplotlib	approx 1 day
Statsmodels	approx 1 day

Scikit-Learn ..... approx 1 day
Regex ..... approx 1 day
Scrapy, JSON ..... approx 1 day
Geolocation API's ..... approx 1 day
Twitter API ..... approx 1 day
Dash (web apps) ..... approx 1 day

Grade Policy:

Lab Completion ..... 400 points
Attendance and Participation ..... 100 points
Project 1 ..... 250 points
Project 2 ..... 250 points

Grades will be distributed according to the following grade scale:

Score	Letter Grade	Score	Letter Grade
A	> 939	C+	775 - 799
A-	900 - 939	C	725 - 774
B+	875 - 899	C-	700 - 724
B	825 - 874	D	600 - 699
B-	800 - 824	F	< 600

Course Objectives: After this course, students should be capable of:

1. Collecting data from websites, using API's, or from other sources, for analysis
2. "Cleaning data" by preparing the data collected for analysis
3. Analyzing data in order to draw conclusions about the real world from which decisions can be made

Grading: All assignments are to be submitted through the appropriate dropboxes on the course website. Rubrics will be posted, and will contain detailed information on the assignment grading policy.

Homework: Late work is not accepted, except as outlined in University policy.

Academic Honesty: UNO's requirements for Academic Integrity and Behavior All students are required to adhere to the highest standards of academic integrity and behavior and must satisfy the UNO Academic Integrity Policy www.unomaha.edu/student-life/student-conduct-and-community-standards/policies/academic-integrity.php and Student Code of Conduct www.unomaha.edu/student-life/student-conduct-and-community-standards/policies/code-of-conduct.php. It is the student's responsibility to read, understand and abide by these policies. If I find that you have plagiarized, been dishonest in completing your assignments, or cheated an an exam or assignment, then I reserve the right to award you no points on the entire exam, project, or assignment and to report the behavior to the university. If this behavior is repeated, I reserve the right to award a failing grade, independent of your score on other assignments. Academic integrity is essential to education, and I take it very seriously.

Extra Help: Dot not hesitate to come to my office during office hours or by appointment to discuss a homework problem or any aspect of the course.