

DATA 510

Data Cleaning, Organization, and Visualization

Instructor: Brandan Scully | e-mail: scullybm@cofc.edu | Office: None

Class Webpage:

Class Meeting Times:

Section 1: W 5:30 PM - 8:15 PM Harbor Walk East 300

Office Hours:

By appointment, schedule via email.

Course Description:

This course will cover the systems and strategies for cleaning, wrangling, organizing, querying, and visualizing data streams and big data.

Pre-requisites: DATA 505 and DATA 506

Course Goals:

- To understand the difference between the different types of data (structured, semi-structured, unstructured, and metadata) and how this impacts underlying storage mechanisms.
- Be able to select and implement the optimal data management system and associated workflow as a function of the data's volume, velocity, variety, and veracity.
- To construct and perform queries to select data for assembly into an analysis workflow for data science.
- To understand the need for and to use an available tool to carry out data cleaning and other data pre-processing activities in preparing data resources integrated from various sources.
- To understand common patterns of data flow through data science analysis workflows, such as big data processing patterns using a parallel processing paradigm such as map-reduce.
- To understand and compare common data visualization methods for data science.

Course Policies:

- Attendance: I strongly encourage you to attend all classes. Regardless of actual attendance, you are responsible for announcements made in class, assignment due dates, etc.
- How to report an absence: Students should...Go to 67 George Street (white house next to Stern Center) to discuss absences and fill out the appropriate forms. Any questions should go directly to either Constance Nelson or get forms online at: http://www.cofc.edu/studentaffairs/general_info/absence. Forms can be faxed to the College at 953-2290. Students will need documentation for health, personal or emergency situations. Students

DATA 510

on athletic teams or school- sponsored trips are responsible for reporting their activity to me.

- Disability Accommodation: Any student who feels that he or she may need an accommodation due to a disability should speak to me individually to discuss your specific needs. For additional help please contact the College of Charleston Center for Disability services at <http://www.cofc.edu/~cds/>.
- Additional Help: Please e-mail me to schedule help outside of class.
- Electronics Devices: Be respectful about unnecessary distractions to you and to others seated around you.

Grading Scale:

Letter	Grade	Quality Points
A	Superior	90-100
B+	Very Good	85-89
B	Good	80 - 84
C+	Fair	75 - 79
C	Acceptable	70 - 74
F	Failure	< 70

Course Components:

Component	Grade Weight
5 Homeworks	40%
1 Midterm	25%
1 Final Project	35%

Important Dates:

Friday, October 28: Last day for students to withdraw with a grade of "W"
 Wednesday, November 23: Thanksgiving; no class
 Wednesday, November 30, Last day of class.

Mental & Physical Well-being:

At the college, we take every students' mental and physical wellbeing seriously. If you find yourself experiencing physical illnesses, please reach out to student health services (843.953.5520). And if you find yourself experiencing any mental health challenges (for example, anxiety, depression, stressful life events, sleep deprivation, and/or loneliness/ homesickness) please consider contacting either the Counseling Center (professional counselors at <http://counseling.cofc.edu> or 843.953.5640 3rd Robert Scott Small

DATA 510

Building) or the Students 4 Support (certified volunteers through texting "4support" to 839863, visit <http://counseling.cofc.edu/cct/index.php>, or meet with them in person 3rd Floor Stern Center). °These services are there for you to help you cope with difficulties you may be experiencing and to maintain optimal physical and mental health.

Food & Housing Resources:

Many CofC students report experiencing food and housing insecurity. If you are facing challenges in securing food (such as not being able to afford groceries or get sufficient food to eat every day) and housing (such as lacking a safe and stable place to live), please contact the Dean of Students for support ([http:// studentaffairs.cofc.edu/about/salt.php](http://studentaffairs.cofc.edu/about/salt.php)). Also, you can go to [http:// studentaffairs.cofc.edu/student-food-housing-insecurity/index.php](http://studentaffairs.cofc.edu/student-food-housing-insecurity/index.php) to learn about food and housing assistance that is available to you. In addition, there are several resources on and off campus to help. You can visit the Cougar Pantry in the Stern Center (2nd floor), a student-run food pantry that provides dry-goods and hygiene products at no charge to any student in need. Please also consider reaching out to Professor ABC if you are comfortable in doing so.