DATA MANAGEMENT AND ANALYSIS

Summer 2020
Tuesday and Thursday (5/28-7/2) and Wednesday (6/24)
ACCT-GB.6416.C1, 9:00-11:55 am
ACCT-GB.6416.C2, 1:00-3:55 pm

Instructor

Yiwei Dou
Email: ydou@stern.nyu.edu
Phone: 212-998-0025
Office: KMC 10th Floor, Suite 10-77
Office Hours: By appointment

Course Description

The practice of accounting is fundamentally tied to data and our ability to analyze them. Whether the data reside in spreadsheets, databases, text documents, or public web sites, we can use them to gain valuable insights into the financial performance of a business. You may also hear popular terms like data science, big data, and advanced analytics and wonder what they mean for a career in industry or professional services. This course provides concepts and tools for making sense of data and performing data analysis. From simple calculations to sophisticated statistical models, data analysis calls for (1) asking the right questions, (2) acquiring, transforming, and analyzing data, and (3) effective presentation of results. We introduce concepts in data management and analysis, review the use of spreadsheets and SQL (Structured Query), and introduce tools for visual analytics and statistical programming. We discuss how to apply these skills to accounting-related areas such as fundamental analysis, management consulting, and auditing. In addition, we survey topics such as machine learning and XBRL (eXtensible Business Reporting Language) and consider the impact of analytics in industry and on the accounting profession. The course concludes with a final project to demonstrate end-to-end data analysis skills.

The objectives for the course are:
1. Demonstrate knowledge of terms, methods, and tools for data management and analysis
2. Demonstrate knowledge of trends in data management and analysis
3. Demonstrate how to acquire, transform, analyze, and visualize data
4. Demonstrate how to solve problems in accounting using data and analytics

Course Materials

The course will require the following software:
- Microsoft Excel or equivalent spreadsheet software
- DB Browser for SQLite (open source)
- Tableau (academic license)
- Notepad++ or equivalent text editor (open source)
- R (open source)
- Rstudio (open source)

NYU Classes: I will be using NYU Classes regularly to post class materials such as lecture slides, data, codes, and homework assignments, and to communicate with you throughout the term. Please make sure you are correctly registered and checking the course site on a regular basis.

Grading Policy

Final grades will be determined as follows:

Homework Assignments	50%
Final Project	35%
Class Participation	15%

Homework Assignments: There will be 4 homework assignments to practice the application of key tools (Excel, SQL, R, and Tableau) to data analysis problems. You must submit your completed homework via NYU Classes <u>by 9 am on the due date</u>; late homework will not be accepted. I will <u>not</u> accept assignments in my mailbox, over the web, through e-mail, etc. Solutions to homework will be posted to NYU Classes.

Final Project: Students will be assigned to groups of 4-5 to collaborate on a final project that demonstrates end-to-end data analysis skills. Details of this project will be introduced following the midterm. Students can expect that successful projects will involve the following:

- Execution of analytics on a sample data set
- Original analysis of the sample data set
- Presentation of novel insights based on the team's analysis
- Supporting documentation, scripts, and files

Class Participation: I encourage you to participate fully and contribute to in-class discussions to get the most out of the curriculum. I will consider your level of participation and professionalism in your final grade. Because this curriculum incorporates in-class exercises, case studies, demonstrations, and discussions, your success depends on your attendance. Although we understand there are times when you may not be able to attend a class, habitual absences will hurt your performance. **During class, please silence all mobile devices.**

STERN POLICIES

General Behavior: The School expects that students will conduct themselves with respect and professionalism toward faculty, students, and other present in class and will follow the rules laid down by the instructor for class room behavior.

Code of Conduct: As a student at Stern, you are expected to conduct yourself as a young business professional. The Stern School does not tolerate cheating, nor does your future employer. Please know that the penalty for cheating is an automatic grade of F for the course and appearance before the Student Disciplinary Committee. I am very strict on this issue. I will do what I can to help you learn the material in this course. All I ask is that you do not cheat yourself, your fellow classmates or the Stern School. Please see www.stern.nyu.edu/uc/codeofconduct for more information.

Students with Disabilities: If you have a qualified disability and will require academic accommodation, please contact the Henry and Lucy Moses Center for Students with Disabilities (CSD) and provide me with a letter from them verifying your registration and outlining the accommodations they recommend. Please see www.nyu.edu/csd for more information. If you will need to take an exam at the CSD, you must submit a completed Exam Accommodations Form to them at least two weeks prior to the scheduled exam time to be guaranteed accommodation.

CLASS SCHEDULE

The following is a tentative schedule of classes, readings and assignments. I may make adjustments as circumstances require.

CLASS#	DATE	TOPICS	DUE
1	5/28 (Thursday)	Introductory Concepts	
2	6/2 (Tuesday)	Getting Started with Excel	
3	6/4 (Thursday)	Relational Databases and SQL I	HW1: Excel
4	6/9 (Tuesday)	SQL II and Statistical Programming with R I	
5	6/11 (Thursday)	Statistical Programming with R II	HW2: SQL
6	6/16 (Tuesday)	Statistical Programming with R III	
7	6/18 (Thursday)	Visual Analytics and Tableau I	HW3: R
8	6/23 (Tuesday)	Visual Analytics and Tableau II	
9	6/24 (Wednesday)	Industry Perspective on Data Analytics (meet together)	
10	6/25 (Thursday)	Big Data, XBRL, and Text Analytics	HW4: Tableau
11	6/30 (Tuesday)	Project Work	
12	7/2 (Thursday)	Final Project Presentations	