University of Cincinnati
Syllabus BANA 7025

I. Course Information:

Title: Data Wrangling
Course #: BANA 7025
Credit Hours: 2
Term: Fall 2021 second half
Room: Lindner Hall 2120
Days & Times: Mo 6:00PM - 9:50PM
Data: Oct 13, 2020-Dec 4, 2020
Course Web Page: https://xiaoruizhu.github.io/data-wrangling

II. Instructor Information:

Name: Xiaorui Zhu
Office Information: LCB, Room 3329.2
Email: zhuxr@mail.uc.edu
Office Hours: Mo 5:00PM – 6:00PM
Communication Policy: Students are encouraged to contact me anytime via **email**. A response will be given within 36-48 hours except on weekends.

III. Link to Pace:

This course aligns with PACE, the Lindner College of Business platform for developing the *total* business professional.

P – Professionalism
- Enhance oral & written ***communication***, express ideas clearly, logically and persuasively.
- Develop and practice ***teamwork*** skills through group projects and exercises.
- Practice professional habits of punctuality, preparation, respect and participation.

A – Academics
- Develop foundational knowledge of core ***business functions*** and their interactions within firms.
- Begin applying functional and cross-functional knowledge ***to critically analyze business problems***; for example applying techniques for business plan development.

C – Character

- Learn and apply *leadership* techniques for project management (plan, brief, execute, debrief).
- Build an understanding and initial skills of *managing diversity*, including understanding cultural differences, and challenges and opportunities of global business.
- Understand importance of *ethics and social responsibility* in business and personal settings.

E – Engagement

- Build understanding of importance and practices of *networking* through interactions with business professionals and guest speakers.
- Develop awareness and appreciation of *involvement* in social organizations, community service, and professional group opportunities.

IV. Course Materials

Recommended

- R for Data Science, Garrett Grolemund. Hadley Wickham. url: https://r4ds.had.co.nz/

V. Course Description:

This course provides an intensive, hands-on introduction to the R programming language. You will learn the fundamental skills required to acquire, munge, transform, manipulate, and visualize data in a computing environment that fosters reproducibility. Welcome!

VI. Student Learning Outcomes:

Upon successfully completing this course, you will be able to:

- Perform your data analysis in a literate programming environment
- Import and manage structured and unstructured data
- Manipulate, transform, and summarize your data
- Join disparate data sources
- Methodically explore and visualize your data
- Develop your own functions
- And perform basic predictive analytic modeling

VII. Instructional Methods:

This course utilizes the Canvas learning management system to provide student-centered online learning that will enhance the teaching and learning process. You can access Canvas by going to the [Canopy home page](#) and clicking on the Canvas login button. You will be automatically enrolled in a Canvas 101 course that will introduce you to the basics of how to use Canvas – you'll see that course when you log in.

Given the current situation, we will adopt a pure online synchronous/asynchronous (50% / 50%) instruction schema. More specifically, the synchronous part will be online streaming lasts around 2 and half hour, while asynchronous will be practical exercises and labs.

Each week you will read and work through selected tutorials on specific data wrangling activities in R. In this class I blend external interactive reading modules via R for Data Science where you will complete specified modules prior to each Saturday session. Then in each class I'll spend the first part of class reviewing the data wrangling activity and answer any burning questions. Then you will break up into defined small groups and work together to complete a data wrangling problem prior to the end of class. Thus, the majority of class time will be spent practicing and applying what you learned outside of the classroom.

VIII. Course Communication:

University policy requires that the email set up in Canvas is the primary means of communication. It is advisable that you use your UC email for this purpose and that you check it often. If you choose to change your email in Canvas to a non-UC email it is your responsibility to ensure you check it frequently.

To make sure that your message is not accidentally deleted as junk, please include '**BANA7025**', your course number and section number in the email subject line. Also, be sure to identify yourself in the message.

IX. Course and Grading Policies:

Course Structure:
Changes to the syllabus, due dates, course requirements or grading requirements will be made as far in advance as possible. Due dates will be clearly marked.

Criteria for letter grades:
Your course grades will be based on your performance on the following:

Point Allocation:

Four equally weighted homework assignments	20%
Mid-term Project Evaluation	20%
Final Project	50%
Engagement	10%
Final grade	**100%**

Grading Scale

94% – 100% = A		
90 – 93% = A-	87 – 89% = B+	83 – 86% = B
80 – 82% = B-	77 – 79% = C+	73 – 76% = C

70 – 72% = C-   60 – 70% = D   Below 60% = F

Absolutely **NO extra credit** request after the exams. However, please feel free to impress the instructor through active class participation, volunteering and HW presentation etc. DURING the semester.

Description of Major Assignments

Homework:

- We will have four homework. Due date will be specified. The default due date will be the beginning of the next class. Late submission of homework subjects to at least 20% penalty. Except under exceptional circumstances, as judged by the instructor, no late submitted assignments after that will be graded.
- Homework submission will be checked by an automated anti-plagiarism algorithm. Any submission with high similarity scores will be flagged and subject to further action.

Mid-term Project Evaluation:

- Throughout the term you will progressively create your final project. You will submit your final project progress midway through the course for a progress evaluation. This progress checks will provide you direction for final completion. Further guidance regarding expectations for this midway project evaluation will be provided in class.
- Participation in class is critical to understanding the material. I will be covering material not in the book. Class notes are important for these topics. Please arrive on time and be prepared to participate in various in-class activities. As we only have 6 full lectures, every absence without approval will lead to lower class participation score.

Final Exam:

The purpose of the final project is to import an existing data set on the web, clean and tidy the data, and perform exploratory data analysis; all while using R Markdown to produce an HTML report that is fully reproducible. This project puts to work the tools and knowledge that you gain throughout this course and will provide you with multiple benefits:

- It will provide you with more experience using data wrangling tools on real life data sets.
- It helps you become a self-directed learner. As a data scientist, a large part of your job is to self-direct your learning and interests to find unique and creative ways to find insights in data.
- It starts to build your data science portfolio. Establishing a data science portfolio is a great way to show potential employers your ability to work with data.

The course is structured in a way that allows you to work on your project as you progress through the weeks. Thus, you should not have to cram during the last two weeks of the term to complete your project. Rather, I plan to have you work on the project and use some of the in-class time to do peer evaluation of your code.

Engagement:

Engagement will include participating in class discussions, small group work, providing quality peer review of code, and being involved in discussions on Canvas Discussion.
At the end of the term, I will have all students perform a peer assessment of their small group members. This assessment will rate each member from 0-5 in several areas regarding:

- Reviewing and providing constructive feedback regarding your code
- Engaging in quality discussions with the group to improve code knowledge
- Working well as a team member in the small group activities
- etc.

I will use this feedback to help in determining your level of engagement.

X. Course Schedule (Tentative, may subject to change):

See course website: https://xiaoruizhu.github.io/data-wrangling

Syllabus Revision Policy:

The instructor reserves the right to revise the syllabus.

XI. LCB policy

Academic Integrity:

As with all Lindner College of Business efforts, in this course you will be held to the highest ethical standards, critical to building character. Ensuring your integrity is vital and ultimately is your responsibility. To help ensure the alignments of incentives, the Lindner College of Business has implemented a "Two Strikes Policy" regarding Academic Integrity that supplements the UC Student Code of Conduct.

- All academic programs at the Lindner College of Business use this "Two Strikes Policy"; Any student who has been found responsible for two cases of academic misconduct may be dismissed from the College.
- All cases of academic misconduct (e.g., copying other students assignments, failure to adequately cite or reference, cheating, plagiarism, falsification, etc.) will be formally reported by faculty; and
- Students will be afforded due process for allegations as outlined in the policy.
  Note to Faculty Member: Please include your proposed sanctions for academic misconduct in your course syllabus.

Special Needs Policy:

The University of Cincinnati is committed to providing all students with equal access to learning opportunities. Accessibility Resources is the official campus office that works to arrange for reasonable accommodations for students with identified physical, psychological, or cognitive disability (learning, ADD/ADHD, psychological, visual, hearing, physical, cognitive, medical condition, etc.). If you have a disability which may influence your performance in this course, you must meet with the Accessibility Resources Office to arrange for reasonable accommodations to ensure an equitable opportunity to meet all the requirements of this course. If you require accommodations due to disability, please contact Accessibility Resources at (513) 556-6823, Campus Location: 210 University Pavilion,

Counseling Services, Clifton Campus:

Students have access to counseling and mental health care through the [University Health Services](#) (UHS), which can provide both psychotherapy and psychiatric services. In addition, students can receive three free professional counseling sessions upon request through the [Counseling and Psychological Services](#) (CAPS). These sessions are not associated with student's insurance coverage. Students are encouraged to seek assistance for anxiety, depression, trauma/assault, adjustment to college life, interpersonal/relational difficulty, sexuality, family conflict, grief and loss, disordered eating and body image, alcohol and substance abuse, anger management, identity development and issues related to diversity, concerns associated with sexual orientation and spirituality concerns, as well as any other issue or concern. After hours, students may call UHS at (513) 556-2564 or CAPS Cares at (513) 556-0648. For urgent physician consultation after-hours students may call (513) 584-7777.

Title IX:

Title IX is a federal civil rights law that prohibits discrimination on the basis of a person's actual or perceived sex, gender, gender identity, gender expression, or sexual orientation. Title IX also addresses instances of sexual violence, dating or domestic violence, and stalking. If a student discloses a Title IX issue to me, I am required to forward that information to the Title IX Office. The Title IX Office will follow up with the student about how the University can take steps to address the impact on the student and the community. They will also inform the student of their rights and direct them to available resources. The priority is to make sure students are safe and successful here at the University of Cincinnati. Students are not required to talk to anyone in the Title IX Office. Students may also directly report any instances of sex or gender-based discrimination, harassment or violence to the Title IX office at (513) 556-3349. Students who wish to know more about their rights and resources on campus can consult the [Title IX website](#) or contact the Title IX office directly at (513) 556-3349.

[Reports may be filed](#) through the Title IX Office website.

LCB Weather Related and Emergency Protocol:

When inclement weather threatens the safety of the University of Cincinnati community, the Senior Vice President for Administration and Finance may invoke University Rule [3361: 10-55-01](#) and declare an emergency closing. There will be an announcement posted on Canvas and if possible, on the local news channels (TV and radio). Communications related to University closures will also be sent to the student's cell phone number on record through the automatic University emergency text messaging system. Students should notify the University if they change their cell phone number to ensure they will receive these important emergency communications.

The Lindner College of Business will observe the university emergency closing protocol <u>for all on-campus classes</u>. During a university emergency closing, all college offices will be closed.

Students should clarify with their course instructors how the closure will affect assignments and deadlines, and whether class information from the missed session(s) will be posted on Canvas, and/or if the class will meet virtually during the closure.