University of CINCINNATI

Course Policies
Fall 2025

Stats 1041– Sections 001

Stats-1041 MWF 1:25 pm- 2:20 pm Clifton Court Hall 2101

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Office Hours:
Drop-in office hours MWF By appointment on other days, email to set up.

Course Overview, Description, Purpose

This course will get you started in the exciting world of data science! You'll use a variety of technologies and learn the fundamentals of R programming to collect and analyze data.

By the end of the course, you'll be able to create stunning data visualizations, build statistical models for estimation and prediction, and apply both supervised and unsupervised learning techniques. You'll also explore the ethical considerations of collecting and using data, helping you become a more responsible data scientist.

Course Format

This is a face-to-face, project-based course that will culminate in a student portfolio. Due dates for graded assessments will be posted in Canvas and announced in class.

Pre- & Co-requisites, Breadth of Knowledge (BOK) areas, Baccalaureate Competencies

Knowledge of high school algebra is a prerequisite for this course. Also, an ALEKS placement test score of 30 or above is recommended. This course fulfills the Critical Thinking, Quantitative Reasoning, Foundational Skills, Information Literacy, Effective Communication, and Social Responsibility areas of the UC General Education Program.

Course Materials

Required readings/equipment/technology.

- Books (all free and available online):
  - Modern Data Science with R. Found here: https://mdsr-book.github.io/mdsr2e/
  - Statistical Inference via Data Science, A Modern Dive into R and the Tidyverse. Found here: Welcome to Modern Dive (v2) | Statistical Inference via Data Science
  - Data Computing 2e, out of print, so I will provide chapters as needed.
- **Laptop/iPad brought to class daily–** We will be programming in R and using software almost daily. If you only have these devices, you may need to find a way to access a different laptop on the days we are using Excel in class. If needed, please discuss this with me during the first week of class.
- Applications (all free to download):
  - R and R Studio
  - BlueSky Statistics (blueskystatistics.com

Course Learning Outcomes

- Data Collection and Preparation:
  - Distinguish between data types and different data sources.
  - Acquiring raw data from different sources.
  - Organize and clean data to make it clear, complete, and reliable.
- Data Visualization:
  - Classify and summarize data using traditional plots.
  - Select appropriate charting techniques based on the type of data and number of variables they intend to present.
  - Compare traditional and dynamic graphing techniques and justify/know when to use each.
  - Locate data visualizations and evaluate their effectiveness.
- Statistical Modeling and Machine Learning:
  - Develop and evaluate the effectiveness of an analytical model.
  - Write and implement generative models.
  - Understand how to estimate the parameters of a model.
  - Use simulation methods to understand the implications of statistical models.
  - **Define** machine learning and statistical learning and **differentiate** between supervised and unsupervised learning.
  - Classify data using machine learning techniques and utilize predictive techniques.
  - Use an algorithm to draw inferences from datasets consisting of input data without labeled responses.
- Ethics and Critical Thinking:
  - Consider the local legislation and identify relevant laws, rules, and regulations about the protection of personal data.
  - Discern bias from fairness in finance, medicine, and society to prevent incorrect or distorted conclusions.
  - Identity clarity in methods of analysis of data, and demonstrate how conclusions can be misleading

Assessments/Activities and Grading Policy

Grading Scale: 100-93 A, 93-90 A-, 87-89 B+, 83-87 B, 80-83 B-, 77-79 C+, 73-77 C, 70-73 C-, 67-69 D+, 63-67 D, 60-63 D-,

Students who complete the course without earning at least a C- will be assigned the grade of NP, signifying “not proficient.” An NP does not lower your grade point average; however, it also does not count as a passing grade or earning course credit. If this course is an essential part of your academic plan and you earn an NP (Not Proficient) as your final grade, you must retake the course successfully in a future semester.

Students who receive an NP might have earned enough points for a D+, D, or D- grade. These students can request a change in their grade from NP for up to one year after the NP grade was assigned. It is important to consider that D grades will affect your GPA and might affect your academic standing. Contact your academic advisor for help deciding whether to request this change, and/or if you have questions about the effect of the NP in your academic program.

IMPORTANT: A Student must academically attend class to be eligible for an NP; this is especially important for students receiving financial aid. **Attending just one class meeting does not qualify as “academic attendance."**

More information about academic attendance can be found here:
https://mailuc.sharepoint.com/sites/Registrar/SitePages/Class-Academic-Attendance-and-Title-IV-Compliance.aspx

Course Grade:

Your grade is calculated based on the following weighting:

Quizzes	22%
Homework and presentations	11%
Engagement/Coding checks	7%
Projects	40%
Final Portfolio	20%

Explanation of Grading Components

Engagement/Coding Checks:

Attendance is key to your success in this course, so we expect you to be here for every class! A big part of our time together will be hands-on, so you'll be coding along with me and working on your skills.

Most days, you'll be graded on your engagement. On days with no coding check, your presence and participation are all you need to get credit. On days we do have a coding check, you'll upload your work to Canvas at the end of class. These checks are graded for completion and are a great way for you to get immediate feedback. We all have bad days, so your lowest four grades will be dropped. Just know that there is no makeup for missed checks.

Homework:

Homework will be assigned regularly and will always be relevant to what we're learning in class. I'll let you know about class assignments, and you can also find them in the weekly Canvas module. **Late homework** is penalized by 10% for each day it's late.

Presentations:

We'll have a few **short presentations** throughout the semester, which will be graded using a rubric I'll provide. These also follow the same late policy as homework.

Projects:

You'll also get to apply your skills through several projects. This is a chance for you to dive deeper into the topics we cover. They'll be graded with a rubric, and late submissions will also be penalized by 10% per day.

Final Portfolio:

Instead of a final exam, you'll put together a **final portfolio**. This is a great way to show off everything you've learned! It's a collection of your work, revised projects, and a written reflection where you'll connect the course material to your own life and interests.

Please note: Due to grading deadlines, late submissions for the final portfolio cannot be accepted.

Tips for Success

General Course Advice:

- Ask questions! Ask questions! Ask questions!
    - Learning is not a passive sport. Ask questions of me and your classmates often. I am here to help and support you. I promise you are not bugging me or anyone else by getting the support you need!
    - Coding can be frustrating at times, even the best coders must look things up or restart code frequently, so be patient with yourself.
- Do not wait until the last minute to do your work

Canvas

You are required to check this website daily. To access Canvas, log in to http://canvas.uc.edu. Then click the link to this course. Class announcements and homework assignments will be posted there. The Modules section will have copies of all course handouts. Your attendance and grades will also be posted. If you believe that a grade on Canvas is incorrect, please contact the instructor.

Academic Integrity

The University Rules, including the Student Code of Conduct and other documented policies of the department, college, and university related to academic integrity, including the assessment policies listed above, will be enforced. https://www.uc.edu/campus-life/conduct/student-code-of-conduct.html

The sanction for Academic Misconduct will be failure of the course.

(AI) Artificial Intelligence/Apps/Extensions :

Students must use the code shown in class for all graded assignments. If a student wishes to use code from another source, they must get permission from the instructor in advance, and they may be asked to present to the class how to use said code. If a student is found to be using artificial intelligence or code not shown in class, it will be considered an act of academic misconduct, and the instructor will follow procedures accordingly.

If you are in doubt as to whether you are using online learning support appropriately, I encourage you to meet with me for advice.

Please make note of and review the College of Arts and Sciences' Two-Strikes Policy. We take these violations seriously https://www.artsci.uc.edu/information/undergrad/academic-policies.html

Student Resources

Information regarding Student Resources can be found in the UC Student Resources Canvas site. I encourage you to consider the resources available to help ensure your academic success as well as your health and wellness.

Drop-in Study Tables

The Math and Science Support (MASS) Center provides study table tutoring for this course. More information about the study tables can be found here: https://www.uc.edu/campus-life/learning-commons/programs/mass-center.html#study-table-schedule

Tutoring and Coaching

The Learning Assistance Center (LAC) offers one-on-one tutoring for this course. Students may schedule individual tutoring appointments to improve their understanding of course materials and develop effective study strategies. LAC appointments are available Mon-Thurs 9 am-8 pm and Fri 9 am-5 pm. Students may schedule appointments online. More information about tutoring can be found here: https://www.uc.edu/campus-life/learning-commons/programs/peer-tutoring.html

The LAC also offers Academic Coaching. Academic Coaches are high-achieving UC upperclassmen and graduate students who provide one-on-one support to encourage success-building practices and habits in students. Coaching is not course-specific, but applicable to all majors and courses. More information about coaching can be found here: https://www.uc.edu/campus-life/learning-commons/programs/academic-coaching.html

Religious Accommodations

Ohio law and the University's Student Religious Accommodations 1.3.7 permits a student, upon request, to be absent for reasons of faith or religious or spiritual belief system or participate in organized activities conducted under the auspices of a religious denomination, church, or other religious or spiritual organization and/or to receive alternative accommodations about examinations and other course requirements due to an absence permitted for the above-described reasons. Not later than fourteen days after the first day of instruction on the course, a student should provide the instructor with written notice of the specific dates for which the student requests alternative accommodation. For additional information about this policy, please contact the Executive Director of the Office of Equal Opportunity and Access at (513) 556-5503 or oeohelp@UCMAIL.UC.EDU

Please be aware that although the course policies provide a general guideline/description of this course, it is still subject to change. Official changes concerning the items contained in this document will be announced on Canvas and during class meetings.